APPENDIX A

Notice of Preparation and Summary of Comments Received

City of Atascadero
6598 Palma Avenue
Atascadero, CA 93422
(805) 461-5000
www.Atascadero.org

Notice Of Preparation

TO: **RESPONSIBLE AGENCIES AND INTERESTED PARTIES**

SUBJECT: **NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE CITY OF ATASCADERO COMPREHENSIVE 2045 GENERAL PLAN UPDATE**

Notice of Preparation

Notice is hereby given that the City of Atascadero (City) will be the Lead Agency and will prepare an Environmental Impact Report (EIR) under the California Environmental Quality Act (CEQA) for the Atascadero Comprehensive 2045 General Plan Update (project or 2045 General Plan Update). This Notice of Preparation (NOP) is hereby provided pursuant to Section 15082(a) of the State CEQA Guidelines. The City is requesting your views as to the scope and content of the environmental information that is relevant to your agency's statutory responsibilities in connection with the project and/or your organization's or individual interest in the project. Responsible agencies will need to use the EIR prepared for the project when considering a permit or other approval for the project. The City is issuing this NOP to notify public agencies and the public and to request input regarding the scope and content of the Draft EIR for this project.

Review and Response Period

In accordance with CEQA Guidelines Section 15082, this NOP is being circulated for a 30-day comment period from July 15, 2024 to August 14, 2024. Pursuant to State CEQA Guidelines Section 15082(b), responses to this NOP must be provided during this comment period. No Initial Study (IS) is attached because the Lead Agency has determined that an EIR is required for the project, which will consider each issue area included in the IS/CEQA Environmental Checklist Form, and is therefore not required to prepare an Initial Study per State CEQA Guidelines Section 15063(a).

Written comments may be submitted to the City's Community Development Department at the address below:

City of Atascadero
Community Development Department
Attn: Kelly Gleason, Planning Manager
6500 Palma Avenue
Atascadero, CA 93422

Comments may also be submitted electronically to: planning@atascadero.org.

Notice of Public Scoping Meeting

In addition, as the project is of regional and areawide significance and in accordance with Section 15082(c)(1) of the State CEQA Guidelines, a scoping meeting will be held by the City on **July 24th, 2024** from **4:00 PM to 7:00 PM**. The scoping meeting will be held at the Atascadero City Administration Building, located at **6500 Palma Ave, Atascadero, CA 93422**.

As a covered entity under Title II of the Americans with Disabilities Act, the City of Atascadero does not discriminate. Closed captioning or other assistive services may be provided upon request. Other services, such as translation between English and other languages, may also be provided upon request. To ensure availability of services, please make your request no later than three working days (72 hours) prior to the meeting by contacting the City at the phone number or by the email shown at the end of this notice.

Project Title: *City of Atascadero Comprehensive 2045 General Plan Update*

State Clearinghouse #: *Pending*

Project Location:

The project location, or Planning Area, encompasses all properties within the city of Atascadero incorporated city limits and its surrounding Sphere of Influence (SOI). The city of Atascadero is located in northern San Luis Obispo County, California, on U.S. Highway 101 (U.S. 101) approximately 13 miles east of the Pacific Ocean. Atascadero is nestled between the Santa Lucia Mountains to the west and the Salinas River to the east. U.S. 101 bisects the community running north/south. California State Route 41 (SR 41) also bisects the city and provides east/west access for travelers to reach the Pacific Coast and the California Central Valley. The city of Atascadero encompasses approximately 26 square miles of varied residential, agricultural, commercial, industrial, park, and open space landscapes. The Planning Area, which includes the SOI, encompasses approximately 20,218 acres or 32 square miles.[1]

Project Description:

A City's General Plan is the primary policy document that lays out the overarching vision and policies for how a city will develop and function in the future. All elements of the General Plan have equal legal status. This means that one policy does not supersede another policy. It also means that any optional element or topic a City includes in its General Plan has the same legal status as required elements. The goals, policies, and actions established in the 2045 General Plan Update would be interrelated and considered together when making decisions related to land use, mobility, growth, preservation, and development.

[1] Source: San Luis Obispo Local Agency Formation Commission (LAFCO) 2024

The project involves a comprehensive update to the City of Atascadero's current 2025 General Plan (2025 General Plan), which was adopted in 2002 and most recently amended in 2016.

Since Atascadero adopted its current General Plan in 2002, shifts in demographics, land use, transportation, economics, community character, and the housing market warrant the need for a comprehensive update. A changing economic and fiscal landscape, along with the need to supply additional workforce housing and head of household jobs, further support the need to ensure the City's visions, goals, policies, and programs are current and adequately address community needs.

The 2045 General Plan Update would be comprehensive and internally consistent, serving as the City's top-level planning document to guide the City's future growth and development. The overall role of the 2045 General Plan Update is to:

- Define a realistic community vision for Atascadero through the year 2045.
- Provide the legal foundation for local government decision-making. This includes but is not limited to zoning regulations, ordinances, guidelines, standards, other adopted Citywide plans, compliance with the California Environmental Quality Act (CEQA) decisions and projects, all of which must be consistent with the General Plan.
- Express policy direction in regard to the physical, social, economic, cultural, and environmental character of the city.
- Serve as a comprehensive guide for making decisions regulating land use, circulation, environmental management, parks and recreation, housing, noise, public health, and safety.
- Provide citizens the opportunity to participate in the planning and decision-making process of their community; and
- Inform citizens, developers, decision-makers, and other cities and counties of the ground rules that guide development within a particular community.

General Plan Elements:

According to State law, General Plans are required to cover nine topics: land use, circulation, housing, conservation, open space, noise, air quality, safety, and environmental justice (note: including environmental justice is only required when a city has a State-identified disadvantaged community, which Atascadero does not). Jurisdictions may include any other topics that are relevant to planning its future and may address the required topics in conjunction with these other topics.

The 2025 General Plan contains the following elements:

- Land Use, Conservation, and Open Space Element
- Circulation Element
- Safety and Noise Element
- Housing Element

The 2045 General Plan Update would include the following elements:

- Land Use and Community Form Element
- Economic Development Element
- Mobility Element
- Recreation and Open Space Element

- Public Services and Infrastructure Element
- Safety and Emergency Preparedness Element

The City of Atascadero Housing Element was adopted in 2020 and is valid until 2028. It will not be part of this current update process.

Proposed Land Use Plan:

The 2045 General Plan Update will include a combination of new and refined land uses and updated land use designations referred to here as "placetypes". Placetypes intend to create more clarity around the character of new development. Placetypes are similar to land use designations, as they set densities and intensities, but also include detail on the character of the various types of uses, including scale, design quality, and relationship to the street. Placetypes would be further refined by zoning districts, which provide more detailed distinction of allowed uses and development standards within each placetype established in the 2045 General Plan Update. Placetypes, or updated land use designations, that will be included in the 2045 General Plan Update are as follows:

- Rural Residential (0.1-1 dwelling units per acre [du/ac])
- Single Family Residential (1-4 du/ac)
- Low Density Multi-Family (5-12 du/ac)
- Medium Density Multi-Family (13-24 du/ac)
- High Density Multi-Family (25-36 du/ac)
- Mixed Use (20-36 du/acre)
- Downtown Mixed Use (20-45 du/ac)
- Commercial
- Community Recreation
- Innovation/Flex
- Industrial
- Conservation/Parks/Open Space
- Public/Quasi Public
- Agriculture (0.1-1 du/ac)

General Plan Population and Employment Growth Projections

The 2045 General Plan Update will include city population and employment growth projections based on land capacity, ability to expand infrastructure, and the anticipated growth rates for both residential and commercial sectors based on multiple factors. These projections will be used to make assumptions about anticipated infrastructure and service needs over the planning period.

- The city's current (2024) population is **30,158** and the forecasted population for the planning period (through 2045) is **38,112**, an increase of approximately 21% for the 20-year planning period, or just over 1% per year.[2] (The 2025 General Plan projected the city's population would grow to 36,000 by 2025)

[2] Population estimates assume a 2.42 person per household ratio and a 95.45% occupancy rate, based on demographic trends.

- The city's current number of dwelling units (2024) is **12,431**; the forecasted number of dwelling units for the planning period (through 2045) is **15,976**.
- The city's current total employment (2024) is **8,603** jobs. This results in a jobs/housing balance ratio of 0.69. Anticipated employment in 2045 is **13,438**. This will result in a change to the jobs/housing ratio to 0.84.

The City will consider all written comments regarding the potential environmental effects of the project received during the NOP public review period. All written comments received will be reviewed and considered by the City as part of the environmental analysis of the proposed project and will become a part of the public record for the EIR.

Potential Environmental Effects:

The 2045 General Plan Update will guide growth in Atascadero over the next twenty years. The potential environmental effects associated with the growth of a community include, but are not necessarily limited to, impacts related to aesthetics, air quality, biological resources, cultural and tribal cultural resources, energy, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology/water quality, land use and planning, noise, population and housing, public services and recreation, transportation, utility and service systems, and wildfire. In addition to analyzing the proposed project's environmental effects, the EIR will also include a reasonable range of alternatives to the project to reduce and avoid environmental impacts to the extent feasible.

Responses to NOP:

Written comments regarding the project should be addressed to the City via the contact information below. Comments will be accepted from July 15, 2024 to August 14, 2024.

City of Atascadero
Community Development Department
Attn: Kelly Gleason, Planning Manager
6500 Palma Avenue
Atascadero, CA 93422

planning@atascadero.org

Date: July 12, 2024 **Signature:** FOR

Kelly Gleason, Planning Manager
planning@atascadero.org
(805) 470-3446

Table A-1. Summary of NOP Comments and EIR Response Locations

Commentor	Summary of NOP Comments	EIR Chapter or Section Addressing Comments
NOP Comments		
California Native American Heritage Commission	• Notes consultation requirements pursuant to Senate Bill (SB) 18 and Assembly Bill 52 (AB) 52 • Recommends early and thorough tribal consultation • Offers guidance on cultural resources assessment and mitigation	• Information on tribal consultation and cultural resources assessment can be found in Section 4.5, *Cultural Resources and Tribal Cultural Resources.*
California Department of Fish and Wildlife	• Establishes role and regulatory authority • Provides recommendations for biological resource analysis • Offers regulatory and procedural guidance for biological resource assessment	• Information on biological resource analysis can be found in Section 4.4, *Biological Resources.*
Santa Ynez Band of Chumash Indians	• Requests no further consultation on the project	• While this comment does not raise any environmental concerns, a summary of all tribal consultation conducted for the project under SB 18 and AB 52 can be found in Section 4.5, *Cultural and Tribal Cultural Resources.*
Santa Lucia Chapter of the Sierra Club	• Raises concerns about lack of specific, lasting, and enforced Land Use and Conservation element in the general plan update, particularly regarding the Salinas River and accompanying wildlife and ecosystems	• While this comment is directed towards the proposed General Plan Update rather than providing input regarding the scope of the EIR, a discussion of potential impacts pertaining to biological resources, including aquatic and riparian habitats associated with the Salinas River, is provided in Section 4.4, *Biological Resources*.
	• Request for the Salinas River and its tributaries to be protected from any increase of sand mining operations	• The 2045 General Plan Update maintains existing policies and does not propose changes that would result in or allow for increased sand mining operations within the Salinas River and its tributaries within city limits. Information on mining and mineral resources can be found in Section 4.10, *Mineral Resources.*
Edward Young and Trudy Valdez	• Request for City to consider rezoning their property for high-density residential or mixed-use development in EIR	• While this comment is directed towards the proposed General Plan Update rather than providing input regarding the scope of the EIR, information on land uses and zoning is provided in Section 4.9, *Land Use and Planning,* and information regarding housing demand is provided in Section 4.12, *Population and Housing*.
N/A (no name provided)	• Request to establish an overlay plan for the potential downstream coverage by water of all areas within Atascadero City limits	• Information relating to water quality, flood hazards, and stormwater is provided in Section 4.8, *Hydrology and Water Quality*.
	• Request to establish the Salinas River and its tributaries as areas to receive environmental mitigation projects	• While this comment is directed towards the proposed General Plan Update rather than providing input regarding the scope of the EIR, information regarding water quality of the Salinas River and other surface water features within city limits can be found in Section 4.8, *Hydrology and Water Quality*.

Commentor	Summary of NOP Comments	EIR Chapter or Section Addressing Comments
	• Request to mitigate any Atascadero Mutual Water Company (AMWC) Projects	• Any projects by AMWC would be required to be consistent with the 2045 General Plan, the effects of which are evaluated throughout Chapter 4*, Environmental Impact Analysis*.
	• Request to establish, name, and protect all cultural resources within the city limits, including a procedure for communication with affected communities	• Information on cultural resources can be found in Section 4.5, *Cultural Resources and Tribal Cultural Resources*.
	• Request for re-zoning of all lands along the Salinas River to non-industrial activities and recreational zoning	• The 2045 General Plan Update would not establish any new industrial zoned land adjacent to the Salinas River. While this comment is directed towards the proposed General Plan Update rather than providing input regarding the scope of the EIR, information on zoning can be found in Section 4.9, *Land Use and Planning.*
N/A (no name provided)	• Request for the review and completion of all existing DeAnza Trail plans	• While this comment is directed towards the proposed General Plan Update rather than providing input regarding the scope of the EIR, information on trail plans and recreational facilities can be found in Section 4.14, *Public Services and Recreation*.
	• Request for the re-zoning of all AMWC properties to agricultural or recreational use with no commercial use allowance	• While this comment is directed towards the proposed General Plan Update rather than providing input regarding the scope of the EIR, information on land use and zoning can be found in Section 4.9, *Land Use and Planning*.
	• Request for monitoring of all water leaving sewer plant	• Information on water quality can be found in Section 4.8, *Hydrology and Water Quality.*
	• Comments regarding the creation and conservation of public open spaces, parks, and trails	• Information on parks and recreation can be found in Section 4.13, *Public Services and Recreation*.
	• Request to inform public of process	• The City is required to follow all public notification requirements per the requirements of CEQA. Additional information on public participation can be found in Chapter 1, *Introduction* and Chapter 9, *Response to Comments.*
Nancy Johnson	• Requests remapping of the Salinas River including current determination of the top of bank, high-water mark, and floodplain	• These types of features change over time and are required to be reevaluated any time a project could affect the Salinas River to determine regulatory agency jurisdiction and permitting requirements. Information regarding hydrology can be found in Section 4.8, *Hydrology and Water Quality*.
	• Requests info on which consulting firms are working on EIR and GP update	• As consultants to the City, the General Plan Update was supported by MIG, Inc. and the EIR was supported by SWCA Environmental Consultants, Inc. Additional details regarding the preparers of this EIR are provided in Chapter 8, *References and Report Preparation*.

Commentor	Summary of NOP Comments	EIR Chapter or Section Addressing Comments
	• Question regarding terminology change for zoning designations	• Information on zoning designations can be found in Section 4.9, *Land Use and Planning.*
	• Question regarding changing goals for Eagle Ranch	• Information regarding Specific Plans, including Eagle Ranch, can be found in the Land Use and Community Form Element of the 2045 General Plan Update.
	• Requests historic De Anza Trail exhibit and inclusion of trail system connectivity in impact analysis	• Information on public trails, including the De Anza Trail, can be found in Section 4.13, *Public Services and Recreation*.
	• Comment regarding outline of legal public use activities allowed on the Salinas River	• Information on uses allowed on the Salinas River and associated tributaries is based on the applicable Placetype and Zoning Districts identified in the Land Use and Community Form Element.
	• Request for EIR to discuss damage due to motorized vehicle use along the Salinas River	• Any existing damage due to motorized vehicle use will be considered part of the environmental baseline against which the 2045 General Plan Update will be evaluated. Potential environmental impacts related to changes in allowed uses along the Salinas River proposed by the 2045 General Plan Update will be evaluated throughout Chapter 4*, Environmental Impact Analysis*.
	• Requests Mitigation Monitoring and Reporting Program (MMRP) be included for motorized vehicle damage	• Any existing damage due to motorized vehicle use will be considered part of the environmental baseline against which the 2045 General Plan Update will be evaluated. Potential environmental impacts related to changes in allowed uses along the Salinas River proposed by the 2045 General Plan Update will be evaluated throughout Chapter 4*, Environmental Impact Analysis*.
	• Requests impacts of development within the boundaries of the Salinas River be discussed with recommendations provided	• The 2045 General Plan Update includes discussion, policies, and actions pertaining to balancing safety, protection of natural resources, and economic development for public and private development in close proximity to sensitive lands, including creeks, riparian corridors, and wetlands in the Recreation, Open Space, and Natural Resources Element. Any existing development in proximity to the Salinas River will be considered part of the environmental baseline against which the 2045 General Plan Update will be evaluated. Any potential impacts resulting from proposed changes in permitted development along the Salinas River will be evaluated throughout Chapter 4*, Environmental Impact Analysis*. • Information regarding impacts associated with stormwater runoff, water quality, and erosion can be found in Section 4.8, *Hydrology and Water Quality*.

Commentor	Summary of NOP Comments	EIR Chapter or Section Addressing Comments
	• Requests updated mapping of boundaries and protected areas of Atascadero Creek and Graves Creek	• While this comment is directed towards content of the General Plan Update rather than input regarding the scope of the EIR, information regarding hydrology can be found in Section 4.8, *Hydrology and Water Quality*.
	• Requests the EIR study the effects of multi-use public trails to make determinations regarding equestrian and motorized vehicle use	• Information on public recreation and associated environmental effects being proposed by the 2045 General Plan Update can be found in Section 4.13, *Public Services and Recreation*.
	• Requests use of Salinas River as 'mitigation bank' for development projects in other areas that require mitigation	• This comment is directed towards content of the General Plan Update rather than input regarding the scope of the EIR, Mitigation banking is typically a strategy used for mitigating impacts to biological resources. Information regarding biological resources, including aquatic and riparian habitats associated with the Salinas River, is provided in Section 4.4, *Biological Resources*.
Eric Greening	• Requests update to maps of areas affected by Salinas Dam failure	• Information on dam failure mapping can be found in Section 4.8, *Hydrology and Water Quality*
	• Requests survey of historical sources to help develop mitigation measures for bio impacts	• Information on impacts to biological resources can be found in Section 4.4, *Biological Resources.*
	• Requests all non-motorized routes be seen as transportation infrastructure • Requests review of Short-Range Transit Plan	• Information on transportation infrastructure and transit plans, including the Atascadero Bicycle Transportation Plan, can be found in Section 4.14, *Transportation.* The City has not developed or published a "Short-Range Transit Plan."
Alejandra Prendergast	• Request for baseline mapping of environmentally sensitive habitat zones within city limits • Requests creation of buffer areas for sensitive habitats • Requests development criteria within buffers • Requests mitigation measures and environmental protection for sensitive areas	• Information on sensitive habitat mapping, development buffers, and mitigation can be found in *Section 4.4, Biological Resources.*
	• Excited for development	• N/A (no environmental issues raised)
	• Concerned about state of environmental resources	• Information on existing conditions and potential impacts to environmental resources can be found throughout *Chapter 4, Environmental Impact Analysis*.
Audrey Taub, SLO Beaver Brigade	• Request for City to support acquisition of conservation easements for Salinas River Corridor (SRC)	• The 2045 General Plan Update includes policies and actions pertaining to the establishment of conservation easements in the Recreation, Open Space, and Natural Resources Element. This comment is directed towards preparation of the 2045 General Plan Update rather than the scope of the EIR.

Commentor	Summary of NOP Comments	EIR Chapter or Section Addressing Comments
	• Requests inclusion of Water Element, including a Planning and Regulatory Section	• The 2045 General Plan Update includes discussion and policies pertaining to water supply and delivery, wastewater collection and treatment, and stormwater drainage and flood protection in Chapter 8, Public Services and Infrastructure Element. • This comment is directed towards preparation of the 2045 General Plan Update rather than the scope of the EIR. However, information on existing conditions and potential impacts associated with water quality, groundwater supply, stormwater drainage, and flood hazards is provided in Section 4.8, *Hydrology and Water Quality*.
	• Requests the City maintain oversight over AMWC	• N/A (no environmental issues raised)
	• Requests mapping, protection, and appropriate zoning of rivers, creeks, and riparian zones	• This comment is directed towards preparation of the 2045 General Plan Update rather than the scope of the EIR. However, information on existing conditions and potential impacts associated with rivers, creeks, and riparian zones can be found in Section 4.4, *Biological Resources.*
	• Statement of intent to form Salinas River Conservancy	• N/A (no environmental issues raised)
Ann Colby	• Questions about climate change, fire insurance, public safety, and wildfire issues	• Information regarding climate change can be found in Section 4.3, *Air Quality, Greenhouse Gas Emissions, and Energy*, and information regarding wildfire and associated public safety concerns can be found in Section 4.16, *Wildfire*.
	• Questions about wildlife, natural habitat conservation, and places to connect with nature	• Information regarding wildlife and natural habitat conservation can be found in Section 4.4, *Biological Resources*, and information regarding existing and future public recreation areas can be found in Section 4.13, *Public Services and Recreation*.
	• Questions regarding equestrian and non-motorized access	• Information on equestrian and non-motorized access can be found in Section 4.13, *Public Services and Recreation*.
	• Questions regarding the City's response to new forms of transportation (e-bikes, scooters, etc.) to ensure public safety	• Information on all modes of transportation and transportation safety can be found in Section 4.14, *Transportation.*
	• Comments regarding SRC restoration and protection	• Information on the Salinas River restoration and protection can be found in Section 4.4, *Biological Resources.*
	• Comments regarding involvement of community groups and using developer funds for restoration and stewardship	• N/A (no environmental issues raised)

Commentor	Summary of NOP Comments	EIR Chapter or Section Addressing Comments
David Broadwater	• Concern for the degradation of the SRC including illegal motor vehicle use, lack of enforcement, and lack of General Plan and Municipal Code provisions including request for City to enforce Municipal Code and General Plan Goals to prevent damage to the SRC	• Information on potential impacts to the Salinas River due to proposed changes in the 2045 General Plan Update can be found in Section 4.4, *Biological Resources*, and Section 4.9, *Land Use and Planning*.
	• Comments regarding the removal of Conservation as an element of the updated General Plan and recommendations regarding designated conservation zones	• Information regarding natural resource conservation is provided in the Recreation, Open Space, and Natural Resources Element of the 2045 General Plan Update. • While this comment is directed towards preparation of the 2045 General Plan Update rather than the scope of the EIR, information regarding conservation of natural resources can be found in Section 4.4, *Biological Resources*.
	• Comments regarding community and economic potential of Salinas River as well as the adoption of a broader, long-term vision for its future	• While this comment is directed towards preparation of the 2045 General Plan Update rather than the scope of the EIR, information regarding conservation of natural resources can be found in Section 4.4, *Biological Resources* and information regarding water quality of surface water features, including the Salinas River, can be found in Section 4.8, *Hydrology and Water Quality*.
Jennifer Cohn	• Comments regarding equestrian safety and access to existing trails • Comments regarding the extension of trails	• Information on public recreation trails can be found in Section 4.13, *Public Services and Recreation.*
Gordon L. Fuglie	• Request for the re-vegetation of AMWC property with native plants and the screening of well heads/pumping stations	• The EIR will evaluate any potential impacts associated with changes proposed in the 2045 General Plan Update. The existing condition of AMWC properties will be considered part of the environmental baseline.
	• Request for trail systems on AMWC property and maintenance of AMWC access roads	• While this comment is directed towards preparation of the 2045 General Plan Update rather than the scope of the EIR, information on existing and future public recreation trails and maintenance can be found in Section 4.13, *Public Services and Recreation*, and information on transportation and roads can be found in Section 4.14, *Transportation*.
	• Concern regarding water quality, pollution, and beaver presence in the SRC	• Information on water quality, pollution, and beaver presence in the SRC can be found in Section 4.4, *Biological Resources*, and Section 4.8, *Hydrology and Water Quality*.
	• Comments regarding the acquisition of lands that abut the western side of the Salinas River and joining then to existing AMWC property	• N/A (no environmental concerns raised)
	• Comments regarding noise pollution from motorized vehicles on AMWC property and the De Anza trail	• Information on existing noise conditions and potential noise impacts associated with the 2045 General Plan Update can be found in Section 4.11, *Noise*.

Commentor	Summary of NOP Comments	EIR Chapter or Section Addressing Comments
	• Comments regarding ecological restoration of disturbed natural areas due to vehicle use on AMWC property	• Information on existing conditions and impacts to biological resources, including habitats associated with the Salinas River, can be found in Section 4.4, Biological Resources and information regarding water quality can be found in Section 4.8, *Hydrology and Water Quality*.
Dorothy Jennings	• Comments regarding Salinas River planning with other agencies (e.g., the County)	• Information on existing conditions and impacts to biological resources, including habitats associated with the Salinas River, can be found in Section 4.4, Biological Resources and information regarding water quality can be found in Section 4.8, *Hydrology and Water Quality*.
	• Request to eliminate motor vehicles from the SRC and provide alternate locations for recreational motorized vehicle use	• Information on recreational activities can be found in Section 4.13, *Public Services and Recreation*.
	• Request for identification of the Salinas River as navigable and subject to the Public Trust	• The Salinas River is likely under the jurisdiction of the U.S. Army Corps of Engineers. Information regarding impacts to plant and wildlife habitats associated with the Salinas River is provided in Section 4.4., *Biological Resources*.
	• Request for inclusion of existing plans such as the San Juan Bautista de Anza National Historic Trail	• Information on existing and future recreation trails can be found in Section 4.13, *Public Services and Recreation*. • Information on bicycle infrastructure and connectivity can be found in Section 4.14, *Transportation*.
	• Request for pedestrian and bicycle connectivity from all areas within the city to the Anza Trail and the Salinas River	• Information on bicycle infrastructure and connectivity can be found in Section 4.14, *Transportation*.
	• Comments regarding endangered species and their protection	• Information on endangered species can be found in Section 4.4, *Biological Resources*.
	• Request for recognition of the Anza Trail story as a cultural resource	• Information on existing and future recreation trails can be found in Section 4.13, *Public Services and Recreation*, and information on historic and cultural resources can be found in Section 4.5, *Cultural Resources and Tribal Cultural Resources*.
	• Comments regarding the inclusion of a Conservation Element	• The 2045 General Plan Update includes a Recreation, Open Space, and Natural Resources Element that includes information, policies, and actions associated with conservation of natural resources. • While this comment is directed towards preparation of the 2045 General Plan Update rather than the scope of the EIR, additional information on conservation of natural resources can be found in Section 4.4, *Biological Resources*.

Commentor	Summary of NOP Comments	EIR Chapter or Section Addressing Comments
Teresa and John E. Robinson	• Request for frequent use of the word "conservation"	• The 2045 General Plan Update includes a Recreation, Open Space, and Natural Resources Element that includes information, policies, and actions associated with conservation of natural resources. Information regarding conservation can be found in Section 4.4, *Biological Resources.*
	• Request to prohibit backyard burning, fireworks, the use of the Salinas Riverbed by motorized vehicles, and wood-burning fireplaces for all new construction	• While this comment is directed towards preparation of the 2045 General Plan Update rather than the scope of the EIR, the 2045 General Plan Update includes discussion, policies, and actions pertaining to wildland and urban fire risks in the Safety Element. • Information on wildfire risks is included in Section 4.16, *Wildfire*.
	• Request for creation of joint oversight commission for the SRC	• N/A (no environmental issues raised)
	• Request to block illegal off-road vehicles from entering the SRC at Halcon Road and provide citations to those that do	• While this comment is directed towards preparation of the 2045 General Plan Update rather than the scope of the EIR, the 2045 General Plan Update includes policies and actions to protect biological resources, including protection of surface waters and watersheds, in the Recreation, Open Space, and Natural Resources Element. • Recent California case law has established that code enforcement/illegal activities are not environmental issues to be evaluated under CEQA.
	• Request to establish setbacks for development along the SRC	• The 2045 General Plan Update includes policies and actions to protect biological resources, including protection of surface waters and watersheds, in the Recreation, Open Space, and Natural Resources Element. • While this comment is directed towards preparation of the 2045 General Plan Update, additional information on wildlife habitats associated with the SRC is provided in Section 4.4, *Biological Resources*, and information regarding surface water quality and stormwater pollution is provided in Section 4.8, *Hydrology and Water Quality*.
	• Request to establish the Salinas River Wildlife Refuge	• N/A (no environmental issues raised)

Commentor	Summary of NOP Comments	EIR Chapter or Section Addressing Comments
	• Request for zero tolerance for homeless encampments in the SRC	• The 2045 General Plan Update does not include an update to the Housing Element, as that element was recently prepared in 2020. • While this comment is directed towards preparation of the 2045 General Plan Update, an evaluation of the 2045 General Plan Update's potential to displace people or existing housing is discussed in Section 4.12, *Population and Housing,* information on wildlife habitats associated with the SRC is provided in Section 4.4, *Biological Resources*, and information regarding surface water quality and stormwater pollution is provided in Section 4.8, *Hydrology and Water Quality*.
	• Request to stop use of pesticides and herbicides wherever possible and to prohibit weedkillers in public schools	• Information on pesticides and herbicides can be found in Section 4.7, *Hazards and Hazardous Materials*.
	• Request to remove encampments along Atascadero Creek	• The 2045 General Plan Update does not include an update to the Housing Element, as that element was recently prepared in 2020. • An evaluation of the 2045 General Plan Update's potential to displace people or existing housing is discussed in Section 4.12, *Population and Housing,* information on wildlife habitats associated with the SRC is provided in Section 4.4, *Biological Resources*, and information regarding surface water quality and stormwater pollution is provided in Section 4.8, *Hydrology and Water Quality*.
	• Protect ground water and waterways by removing encampments and trash and encouraging the El Camino Homeless Organization (ECHO) to stop distributing so much plastic	• While this comment is directed towards preparation of the 2045 General Plan Update, an evaluation of the 2045 General Plan Update's potential to displace people or existing housing is discussed in Section 4.12, *Population and Housing,* information on wildlife habitats associated with the SRC is provided in Section 4.4, *Biological Resources*, and information regarding surface water quality and stormwater pollution is provided in Section 4.8, *Hydrology and Water Quality*.
	• Request to move ECHO away from schools and churches	• N/A (no environmental issues raised)
Jill and Rob Urmy	• Concerns regarding open space, clean air, and flora and fauna	• Information on parks and open space can be found in Section 4.13, *Public Services and Recreation*. • Information on air quality can be found in Section 4.3, *Air Quality, Greenhouse Gas Emissions, and Energy*. • Information on biological resources can be found in Section 4.4, *Biological Resources*.

Commentor	Summary of NOP Comments	EIR Chapter or Section Addressing Comments
	• Concerns regarding motor vehicle use along the SRC	• The 2045 General Plan Update includes policies and actions to protect biological resources, including protection of surface waters and watersheds, in the Recreation, Open Space, and Natural Resources Element. • Information on wildlife habitats associated with the SRC is provided in Section 4.4, *Biological Resources*, and information regarding surface water quality and stormwater pollution is provided in Section 4.8, *Hydrology and Water Quality*.
	• Desire to recreate safely and protect open space	• Information on parks, open space, and recreation is provided in Section 4.13, *Public Services and Recreation*.
Dolores Howard	• Concern regarding the exclusion of environmental justice discourse	• Information on why no Environmental Justice Element was prepared as part of the 2045 General Plan Update is discussed in Chapter 2, *Project Description*.
	• Request for Tribal Cultural Resources to be addressed separately from Cultural Resources	• Information on cultural resources and tribal cultural resources can be found in Section 4.5, *Cultural Resources and Tribal Cultural Resources.* While these two topics are discussed in the same section of the EIR, they are addressed separately and have different analyses.
	• Request to protect the rights of nature through wildlife corridors and the mapping and protection of riparian zones, environmentally sensitive habitat areas (ESHAs)	• Information on wildlife corridors, riparian habitats, and sensitive natural communities can be found in Section 4.4, *Biological Resources.*
Ranel Porter	• Concern regarding ATV use in the SRC • Concern regarding the protection of the SRC, specifically regarding beavers, climate change, and indigenous resources • Request for the mapping of the Salinas River to better protect and honor it	• The 2045 General Plan Update includes policies and actions to protect biological resources, including protection of surface waters and watersheds, in the Recreation, Open Space, and Natural Resources Element. • Information on existing conditions and potential impacts to wildlife habitats associated with the SRC is provided in Section 4.4, *Biological Resources*, and information regarding surface water quality, flood hazards, and stormwater pollution is provided in Section 4.8, *Hydrology and Water Quality*. • Information on cultural resources and tribal cultural resources can be found in Section 4.5, *Cultural Resources and Tribal Cultural Resources.*
Scoping Meeting Comments		
N/A	• Concern regarding speeding on San Jacinto Avenue	• The 2045 General Plan Update includes a discussion, policies, and actions pertaining to traffic safety in the Mobility Element. • Information on traffic safety can be found in Section 4.14, *Transportation.*

Commentor	Summary of NOP Comments	EIR Chapter or Section Addressing Comments
N/A	• Support for Salinas River protections, specifically regarding recreation, beaver habitat, and water supply	• The 2045 General Plan Update includes policies and actions to protect biological resources, including protection of surface waters and watersheds, in the Recreation, Open Space, and Natural Resources Element. • Information on existing conditions and potential impacts to wildlife habitats associated with the SRC is provided in Section 4.4, *Biological Resources*, and information regarding groundwater supply is provided in Section 4.8, *Hydrology and Water Quality*.
N/A	• Flood potential for existing residential areas and new growth areas • Updated flood hazard mapping	• Information on flood potential and hazard mapping can be found in Section 4.8, *Hydrology &and Water Quality*.
	• Affordable housing priority	• Information on housing supply and demand and affordable housing can be found in Section 4.12, *Population and Housing*.
N/A	• Need for updated maps of flood hazard from Salinas Dam failure	• Information on flood hazard mapping and inundation areas in the event of a dam failure can be found in Section 4.8, *Hydrology and Water Quality*.
	• Revision of Urban Services Line	• The 2045 General Plan Update includes discussion, policies, and actions pertaining to concentrating new and infill development within the Urban Services Line in areas where utilities and public services exist or are planned. • Information on the Urban Services Line can be found in Section 4.9, *Land Use and Planning.*
N/A	• ATV park with regional trail connections	• Information on existing and future planned recreational facilities can be found in Section 4.13, *Public Services and Recreation*.
N/A	• Walking trail along creek from Sunken Gardens to Three Bridges	• While this comment is directed towards the 2045 General Plan Update rather than the scope of the EIR, information on existing and future planned public trails can be found in Section 4.13, *Public Services and Recreation*.
N/A	• Replace rock barricades at Halcon Road to prevent illegal off-road vehicles from entering the Salinas riverbed	• The 2045 General Plan Update includes policies and actions to protect biological resources, including protection of surface waters and watersheds, in the Recreation, Open Space, and Natural Resources Element. • Information on existing conditions and potential impacts to wildlife habitats associated with the SRC is provided in Section 4.4, *Biological Resources*, and information regarding groundwater supply is provided in Section 4.8, *Hydrology and Water Quality*.

Commentor	Summary of NOP Comments	EIR Chapter or Section Addressing Comments
N/A	• Zero tolerance for encampments along Salinas Riverbed • Establish the Salinas River Wildlife Refuge • Establish a Salinas River Joint Commission	• While these comments are directed towards preparation of the 2045 General Plan Update, an evaluation of the 2045 General Plan Update's potential to displace people or existing housing is discussed in Section 4.12, *Population and Housing,* information on wildlife habitats associated with the SRC is provided in Section 4.4, *Biological Resources*, and information regarding surface water quality and stormwater pollution is provided in Section 4.8, *Hydrology and Water Quality*.
N/A	• Ensure developments along the Salinas River preserve the integrity along the river	• The 2045 General Plan Update includes policies and actions to protect biological resources, including protection of surface waters and watersheds, in the Recreation, Open Space, and Natural Resources Element. • Information on existing conditions and potential impacts to wildlife habitats associated with the SRC is provided in Section 4.4, *Biological Resources*, and information regarding groundwater supply is provided in Section 4.8, *Hydrology and Water Quality*.
	• Make De Anza trail fully connected and for non-motorized use	• Information on trails can be found in Section 4.13, *Public Services and Recreation.*
N/A	• Requesting mixed use of Sean Knoplt's El Camino property	• N/A (no environmental issues raised)
N/A	• Dam failure	• Information on dam failure can be found in Section 4.8, *Hydrology and Water Quality*.
N/A	• Ensure industrial dust is kept outside of sensitive or unsafe zones	• Information on dust and air quality can be found in Section 4.3, *Air Quality, Greenhouse Gas Emissions, and Energy.*
N/A	• Request for De Anza Trail to work with County to connect to Santa Margarita	• Information on trails can be found in Section 4.13, *Public Services and Recreation.*
N/A	• Repaving at San Gabriel Road	• Information on roadway improvements can be found in Section 4.14, *Transportation.*
N/A	• Request for stoplights at Santa Rosa and Highway 101 to be in all one-way direction	• Information on traffic control can be found in Section 4.14, *Transportation.*
N/A	• Concern about proximity of electric vehicle charging to homes, schools, etc. and risk of electromagnetic radiation	• Information on health hazards can be found in Section 4.7, *Hazards and Hazardous Materials*.
	• Inclusion of electromagnetic pollution in the Safety Element.	• While this comment is directed towards the preparation of the 2045 General Plan Update rather than the scope of the EIR, information on health hazards can be found in section 4.7, *Hazards and Hazardous Materials*.
	• Lobbying for repeal of Section 704 of the Telecommunications Act of 1996	• N/A (no environmental issues raised)
N/A	• Request for 4-way stop signs on both sides of the Curbaril Interchange	• Information on traffic control can be found in Section 4.14, *Transportation.*

Commentor	Summary of NOP Comments	EIR Chapter or Section Addressing Comments
N/A	• Request to consider area near "Garcia" as ATV rec area	• Information on existing and planned public recreational facilities can be found in Section 4.13, *Public Services and Recreation.*
N/A	• Request for designated ATV area • Question regarding getting homeowners to allow trails through their property	• Information on existing and planned public recreational facilities can be found in Section 4.13, *Public Services and Recreation.*

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APPENDIX B

Draft 2045 General Plan

Authentic Atascadero

2045 General Plan

Working together to **serve,** build **community** and enhance **quality of life.**

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Chapter 1: Introduction

The 2045 General Plan articulates the shared community vision for preservation, growth, and change in our community. This General Plan is a long-range policy document that guides decision-making and establishes the intent for the design and development of new projects, conservation of natural resources, promotion of economic development, improvements to mobility and infrastructure systems, expansion of public services, and enhancement of community amenities. This General Plan directs how Atascadero will look and how residents, property owners, business owners, and visitors will experience our City today and well into the future. While the Plan identifies 2045 as a horizon year, not all initiatives and goals in this Plan may be achieved by then. However, this Plan defines the interconnected actions we will pursue to create the conditions for the City we envision.

In 2002, the City adopted a plan focused on "smart growth" shaped by four guiding principles:

- Protect the natural environment.
- Improve the appearance and character of Atascadero.
- Provide a secure revenue base.
- Promote well-planned neighborhoods.

This Plan recognizes what has been achieved: new housing types, public and private reinvestments in Downtown, development focused within the Urban Services Line, and the continued consideration of hillsides and habitats. Planning for the next two to three decades will build upon these successes while accounting for the rapid technological and societal changes affecting how people work, shop, enjoy leisure time, and move in, around, and through the City. The COVID-19 pandemic caused many shifts likely to be permanent, particularly work-at-home jobs, online shopping, and home food delivery. These conditions, as well as the impacts of climate change, will guide development of Atascadero's next generation General Plan.

Initiated in 2023, this update effort focused on revisiting, refining, and updating goals, policies, and actions to reflect evolving trends, demographics, and collective ideas. Residents, business owners, and other community members participated in a robust public engagement program to ensure that all perspectives were shared and represented in the shaping of this Plan.

Historical Context

While this General Plan looks towards the future, it is also important to understand the past, Atascadero is distinguished by its unique history. The community was founded in 1913, when Edward Gardner Lewis envisioned establishing a model colony of 38 square miles that could grow to 30,000 residents. Lewis moved forward with the vision, overseeing the sale of land plots, construction of more than 100 miles of local roads, and founding of the Atascadero Mutual Water Company. Development halted abruptly in 1924 when Lewis declared bankruptcy, and the Great Depression slowed growth for decades after.

Atascadero was a planned community from the beginning, with a focus on creating a welcoming environment for residents through features such as wide, tree-lined streets and a defined civic center. The City attracted individuals and families seeking a retreat from the busier urban centers of California. Atascadero incorporated in 1979, after which a surge in population and ensuing development of residential and commercial areas shaped the community we experience today.

Throughout the mid-20th century, Atascadero continued to develop as a suburban community with a strong sense of local identity. The City's growth was influenced by its early master planning efforts and the charm of its surrounding landscapes, which attracted both new residents and visitors. Today, Atascadero is known for its blend of historical charm, community-focused living, and its scenic Central Coast setting, reflecting its origins as a thoughtfully designed, model City.

Atascadero has a historic charm that comes from many preserved sites citywide. Although most of the colony-era homes are not listed on the State or National register, 17 prominent sites are either listed or eligible for historic status, and another 17 potential historic resources are located throughout the community.

Atascadero City Hall (also known as the Doran Building) is a key architectural landmark and symbol of the City's early vision. Designed by architect Walter D. Bliss in the Italian Renaissance style, the building is central to the City's historic identity and continues to serve as a civic hub.

Built in 1914, the Atascadero Printery is a notable example of early 20th-century industrial architecture. Originally constructed as a printing facility, it features distinctive Italian Renaissance design elements.

The Atascadero Estates Residential Historic District, established in the early 20th century, encompasses a collection of well-preserved residential properties that showcase the City's early planning and architectural styles, including Mission Revival and Craftsman. Both the Bucklin House and the Jorgens House serve as early examples of residential architecture in Atascadero. The homes feature elements of the Mission Revival style and have been well preserved.

Following the early colony years, Atascadero's growth resulted from major infrastructure investments: the construction of Highway 101, establishment of the Atascadero State Hospital (which brought many new jobs to the community), and provision of sewer service to the town center, which resulted in a near doubling of the population within the town boundaries. In 1979, Atascadero incorporated, becoming the second largest City in the County at that time.

Authentic Atascadero

The 2045 General Plan — **Authentic Atascadero** — frames the community vision for how Atascadero should grow and respond to change over the coming years and decades. As the City's overarching policy document, every land use, mobility, and infrastructure decision made by elected and appointed City officials and City staff must be consistent with the General Plan vision, goals, policies, programs, and actions.

State law requires that every City prepare and adopt a comprehensive and long-range General Plan (California Government Code Section 65300) and that the plan inform the content and application of programs and ordinances that govern land use, infrastructure investments, and generally, the spending of public monies. The General Plan and its maps, diagrams, and policies are reflected, for example, in the Zoning Ordinance and economic development strategies. Also, under California law, all specific plans, area plans, community plans, zoning ordinances, subdivision maps, and public works projects must be consistent with the General Plan.

While a General Plan can cover a variety of topics based on a community's specific needs, State law requires that it address these seven topics, or elements: Land Use, Circulation, Housing, Conservation, Open Space, Noise, and Safety. An eighth topic, Environmental Justice, is only required to be addressed if a City includes "disadvantaged communities," as designated by the State. Atascadero does not have any State-identified disadvantaged communities.

The required elements must establish policy direction relating to:

- The use and development of properties citywide
- Accommodation of all modes of transportation
- The provision of parks and other open spaces to meet community needs
- The types of housing available in the community
- The use and consideration of natural resources

- The provision of public safety services and protection against natural and human-caused hazards (including noise)

The 2045 General Plan is structured around topics that emerged through an extensive community engagement process. As noted above, General Plans are required to contain a minimum of seven State-mandated elements, but municipalities have flexibility in the organization of the chapters and content to reflect local preferences and sensibilities. **Table 1-1** indicates how the General Plan chapters relate to the State-mandated elements.

Table 1-1: State-Required General Plan Topics

Atascadero 2045 General Plan Chapters	State Mandated Elements								
	Land Use	Circulation	Housing[1]	Conservation	Open Space	Noise	Safety	Environmental Justice[2]	Optional Topics
Chapter 1: Introduction			*Prepared under separate cover*					*Not required in Atascadero*	■
Chapter 2: General Plan Vision and Guiding Principles									■
Chapter 3: Land Use and Community Form Element	■			■					
Chapter 4: Economic Development Element									■
Chapter 5: Housing Element									
Chapter 6: Mobility Element		■							
Chapter 7: Recreation and Open Space Element				■	■				
Chapter 8: Public Services and Infrastructure Element									■
Chapter 9: Safety and Emergency Preparedness Element						■	■		
Glossary									■

1. The State of California Department of Housing and Community Development (HCD) requires Housing Elements to be periodically reviewed, updated, and certified. The City of Atascadero Housing Element is included under separate cover.
2. The State of California requires jurisdictions to prepare an Environmental Justice Element only if they have one or more communities that are identified as "disadvantaged communities" based on CalEnviroScreen 4.0. The City of Atascadero does not have any identified disadvantaged communities as of 2024 when this General Plan was prepared.

Community Involvement

Beginning in early 2023, City staff undertook a series of community engagement activities to promote and inform the 2045 General Plan. The City was committed to designing and implementing an inclusive and dynamic engagement process to ensure robust and genuine feedback from the community, civic and City leaders, and the private sector. The following is a summary of key engagement materials and activities that took place during the process.

General Plan Update Website

The City prepared a dedicated General Plan Update website (www.atascadero2045.org) that kept the public informed and allowed people to directly submit comments. The website compiled all events, documents, and other materials associated with the project.

Stakeholder Interviews and Focus Groups

City staff met with a range of stakeholders, civic leaders, and community groups throughout the process to discuss challenges and opportunities, alternatives, and draft policies. These meetings allowed for important discussions to occur that helped inform the process and ultimately the goals, policies, and actions included in the 2045 General Plan.

Community Engagement Series #1: Vision for the Future

In early 2023, the City hosted a series of targeted group discussions and an open house to solicit community ideas on a vision for the future of Atascadero and feedback on challenges and emerging opportunities; these conversations informed the Alternatives phase of the project. These meetings and workshops provided an opportunity for the community to learn about the process and the importance of the General Plan, and to discuss the future of Atascadero. Events in this series included informational pop-up events during concurrent community-led programming, an open house that allowed discussions based on each General Plan element, and the creation of an Existing Conditions Atlas that allowed community members to use maps to comment on specific areas throughout the City and identify opportunities, challenges, or additional questions.

Community Engagement Series #2: Alternatives

In Fall 2023, the City hosted a series of pop-up events, focus group meetings, open houses, high school student policy projects, and an online survey to solicit community ideas on a preferred land use and growth alternative for the future of Atascadero. These interactive events and activities provided community members and stakeholders with an opportunity to learn about the proposed new land use designations—called Placetypes—and areas of change (focus areas), provide feedback on growth ideas and concepts for each focus area, and discuss additional things they would improve or change in the future. Focus areas were a key part of the alternatives discussion and used throughout the planning process to inform community discussions around potential changes, investments, and key priorities.

Community 2045 General Plan Open House

[Note: this section will be updated later]

City Council Study Sessions

The Atascadero City Council was actively involved in all phases of the project. In addition to their role as the legislative body for the City, the Council also functioned as an advisory committee for the General Plan Update, holding study sessions on a regular basis to consider policy strategies, review community feedback, and provide direction to City staff on key topics to study and choices for the future. Each study sessions was a public meeting, and the community was encouraged to attend and provide feedback.

Public Hearings

[Note: this section will be updated later]

Planning Area

In 2023, when the planning process for this General Plan began, the incorporated City boundaries encompassed about 26 square miles, less than the extent Lewis envisioned for the model colony. However, under State law, the City has the authority and ability to plan beyond its boundaries within an area referred to as its sphere of influence (SOI). Together, the incorporated City area and the sphere of influence are termed the "Planning Area," which generally coincides with the historic Atascadero Colony boundary. The 2045 General Plan Planning Area boundary (see **Figure 1-2**) covers about 32 square miles. The following is a more detailed summary of the purpose and size of each major boundary.

City Limits

The Atascadero City limits encompass approximately 26 square miles, or 16,738 acres, as of 2024. The City has land use authority over all properties within these limits, except for properties owned by the State of California, San Luis Obispo County, and public school districts.

Urban Services Line (USL)

Atascadero's Urban Services Line (USL) designates land within the City limits where services, in particular water and sewer, are provided or may be provided in the future. Due to topography, environmental, and physical constraints, rural residential development is and will remain the predominant land use development pattern outside the USL.

Sphere of Influence (SOI)

The SOI represents adjacent unincorporated areas that currently, or may in the future, receive City services. The San Luis Obispo County Local Agency Formation Commission, or LAFCo, identifies two unincorporated areas within the City's SOI, totaling approximately five square miles, or 3,466 acres. The most significant is a property known as Eagle Ranch, abutting

Atascadero's southern City boundary. Eagle Ranch contains existing colony lots (452) and is subject to a Memorandum of Agreement (MOA) between San Luis Obispo County and the City of Atascadero that guides the future annexation and development of this area.

The "Big Moves"

The 2045 General Plan process involved extensive community and decision-maker discussions regarding future growth and evolving community character. This engagement process (summarized above) helped inform the goals, policies, actions, and programs included in this General Plan. While each chapter discusses specific topics, the community and City Council identified a series "Big Moves" that establish the overarching focus of the 2045 General Plan. The Big Moves represent key land use objectives and strategies that will help advance the Vision and Guiding Principles (see **Chapter 2**) and define how the community grows and evolves into the future.





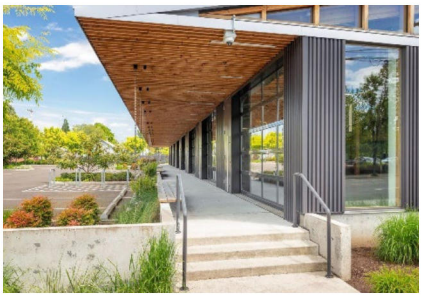
Big Move A

Create a Mix of Housing

This 2045 General Plan identifies ways to support future community needs and choices by expanding the types, formats, and affordability of new housing in Atascadero.

Key Policy Considerations

- Allow higher-density residential and mixed-use projects within Downtown and along key stretches of El Camino Real and Morro Road that are accessible to a range of community services, amenities, and activities.
- Consider development incentives for projects that provide needed workforce housing near areas of employment.
- Encourage incremental infill housing in traditionally single-family areas that maintains the character and neighborhood scale (second units, duplexes, cottage clusters).





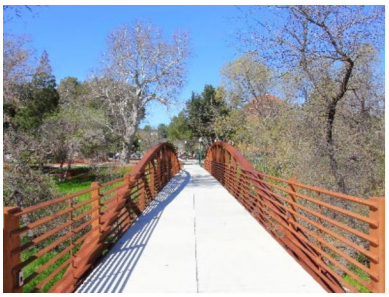
Big Move B

Attract New Industries and Higher Wage Jobs

The 2045 General Plan identifies ways to cultivate a successful, resilient, and diverse business environment that supports existing and new businesses, attracts innovative and emerging industries, and increases higher wage jobs in Atascadero.

Key Policy Considerations

- Encourage business investment through targeted regulatory incentives and infrastructure prioritization (onsite parking reductions, infrastructure upgrades).
- Actively market Atascadero as a business-friendly City, and engage technology, research and development, and similar industries to locate in the City.
- Provide opportunities for flexible building uses and conversion of spaces within key commercial and mixed-use areas.





Big Move C

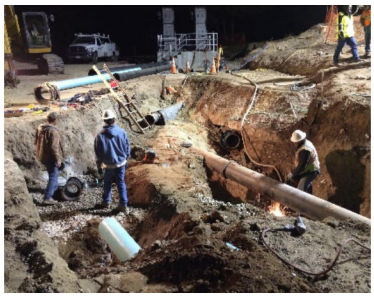
Improve Mobility, Access, and Safety

The 2045 General Plan identifies ways to create and maintain a circulation network that provides safe, efficient, and convenient mobility choices.

Key Policy Considerations

- Enhance multi-modal street design and amenities along El Camino Real and Morro Road to encourage and accommodate more walking and biking.
- Create a network of emergency routes for wildfire-prone areas that provide safe evacuation for residents and efficient entry for first responders.
- Prioritize key collector streets for multi-modal improvements to enhance mobility options.






Big Move D

Address Public Infrastructure Needs

The 2045 General Plan identifies ways to maintain adequate and efficient backbone infrastructure to support current and future community, business, and development needs in Atascadero.

Key Policy Considerations

- Expand telecommunications infrastructure and public utilities to and within key employment areas.
- Implement streetscape improvements along El Camino Real and Morro Road near major planned residential and employment nodes to incentivize new development.
- Develop fiscal strategies for maintaining and expanding key infrastructure.





Big Move E

Ensure Fiscal Sustainability

The 2045 General Plan identifies ways to balance new public investment and private development to maintain sustainable and resilient fiscal resources for the City.

Key Policy Considerations

- Prioritize public investments that have a positive influence on long-term economic growth, including focusing infrastructure improvements within employment-generating areas.
- Use financing mechanisms that attract new development that contributes to near-term investment and long-term infrastructure maintenance.
- Acknowledge the fiscal implications of different land use types and the necessity of maintaining a balanced land use mix to mitigate fiscal vulnerabilities during variable market cycles.

General Plan Chapters

The 2045 General Plan is organized into the following chapters.

Chapter 1: Introduction

Describes the context of Atascadero and the 2045 General Plan process, including the extensive community outreach and feedback that informed goals, policies, actions, and programs going forward. It also identifies the Planning Area, provides an overview of general plan requirements, presents the "Big Moves," and summarizes the approach, structure, and key components of the 2045 General Plan.

Chapter 2: General Plan Vision and Guiding Principles

Presents the community's vision for Atascadero and guiding principles that will shape the vision.

Chapter 3: Land Use and Community Form Element

Fulfills the State requirements for the Land Use Element and identifies policies to preserve and foster community character when exploring opportunities for growth. This chapter outlines goals and policies for development citywide, as well as for unique areas within Atascadero.

Chapter 4: Economic Development Element

Represents a topic emphasized by community members and City leaders, but it is not required by State law. This chapter provides policies to diversify the economic base and expand employment opportunities by attracting new businesses and supporting existing businesses.

Chapter 5: Housing Element

Fulfills State requirements and certified by the California Department of Housing and Community Development (HCD) in January 2021 as part of the 6th Cycle Housing Element update process. Adopted by the City Council in November 2020, the City of Atascadero 2021-2028 Housing Element is a coordinated and comprehensive strategy for promoting the production of safe, decent, and affordable housing for residents. In accordance with State law, Housing Elements are updated every eight years and thus is on a different update cycle than this General Plan

Chapter 6: Mobility Element

Fulfills State requirements for the Circulation Element and outlines policies to balance all modes of travel throughout Atascadero, with an emphasis on multi-modal transportation along major corridors, strategies to improve circulation at key intersections and freeway overpasses, and identifying opportunities for expanded bicycle routes and pedestrian connections and trails.

Chapter 7: Recreation and Open Space Element

Fulfills State requirements for the Conservation and Open Space Elements, which focus on resource preservation, park space, and recreation resources.

Chapter 8: Public Services and Infrastructure Element

Addresses topics required for the Safety and Circulation Elements, including water supply, storage, and delivery, wastewater collection and treatment, flood control and stormwater management, solid waste management, energy, and telecommunications.

Chapter 9: Safety and Emergency Preparedness Element

Fulfills State requirements for the Safety and Noise Elements. This chapter establishes goals and policies regarding adequate emergency services and response systems, encompassing both preventative and proactive practices. It also outlines policies to protect the community from wildland fire hazards, noise, hazardous materials, adverse effects of climate change, and geological events.

Key Terms

Each chapter contains goals, policies, and actions crafted to achieve the community's vision.

- A **goal** is an overall statement of community desires and consists of a broad statement of purpose or direction. For each goal in the 2045 General Plan, associated and more definitive policy statements follow.
- A **policy** provides more specific guidance to the City Council, Planning Commission, other City commissions and boards, and City staff in their review of development proposals and other actions taken.
- Implementation **actions** further articulate how the City will achieve its goals and policies.

Implementation Categories

The 2045 General Plan is implemented in a variety of ways. Each policy and action include one or more of the abbreviations below to identify how they will be implemented. Many policies are implemented through City legislative or regulatory actions, while others require either new research or community partnerships. This approach of tracking how each policy is implemented allows City decision-makers and staff, business and property owners, residents, and the entire Atascadero community to actively monitor General Plan implementation progress.

Development Review [DR]

Many General Plan policies are implemented through regulations based on the City's "police power" to protect public health, safety, and welfare. City ordinances also create a development review process that provides for review of individual project proposals and authorizes the City to approve, conditionally approve, or deny projects based on their consistency with the General

Plan. The following plans, ordinances, and procedures are commonly used by the City to implement the General Plan:

- Specific Plans
- Zoning Code
- Objective Design Standards
- Design Guidelines
- Subdivision Code
- Building Code
- Development Review Process
- Annexation Requirements

Master Plans [MP]

The City has adopted master plans, strategies, and programs for various City services and facilities, types of development, and geographic areas. These are prepared to provide more specific direction for decision-makers, staff, and the public about policy and program decisions in the future. They are not elements or components of the General Plan; rather, they are tools that implement the General Plan. Specific General Plan implementation programs call for the annual or periodic review of many of these master plans, strategies, and programs, in addition to adoption of new ones.

Financing and Budgeting [FB]

The development, maintenance, and operation of public facilities such as parks and civic buildings require financial resources derived from various sources. Programming of City capital projects and their funding, as outlined in the Capital Improvement Projects list, is updated annually. The following revenue sources used by or available to the City will continue to support the development, maintenance, and operation of public facilities and services:

- Property Tax Revenue
- Sales Tax Revenue
- User Fees
- Development Impact and Linkage Fees
- Community Facilities and Special Assessment Districts
- Municipal Bonds
- Special Taxes
- Regional Agency, State, and Federal Grants
- Other Regional Agency, State, and Federal Funding

Studies and Reports [SR]

The City conducts studies and produces reports to collect and evaluate information related to specific issues. These studies and reports are undertaken at the direction of the City Council as needed or are prepared annually to report on the status and implementation of the General Plan.

Services and Operations [SO]

The City provides a broad range of services to its residents, businesses, and visitors, and manages and operates its facilities to meet community needs. How the City provides services and carries out its operations influence the effectiveness of General Plan implementation.

Agency Coordination [AC]

The City must coordinate with numerous local, regional, State, and Federal agencies to implement the General Plan. These agencies provide services, facilities, or funding, and administer regulations that directly or indirectly affect many issues addressed in the General Plan. The following is a partial list of public agencies that may play a role in implementing the General Plan:

- Adjacent jurisdictions, including San Luis Obispo County, with which Atascadero shares certain municipal services and facilities
- Local water provider
- Regional agencies such as SLO Council of Governments
- State agencies such as Caltrans, General Services, State Parks, the State Lands Commission, The Water Quality Control Board, the California Department of Fish and Wildlife, and the California Environmental Protection Agency
- Federal agencies such as U.S. Fish and Wildlife Services, the U.S. Park Service, the U.S. Army Corps of Engineers, and the Federal Emergency Management Agency

Partnerships with the Private Sector [PA]

The City may coordinate its activities with private sector efforts to improve public service delivery, manage public sector assets, or leverage private sector investment. By exploring new partnerships with the private sector, the City can use its technical, management, and financial resources in creative ways to achieve the goals of the General Plan.

Public Information and Education [PI]

A critical City function is providing information to residents and the business community about the policies and programs being carried out to achieve community goals. This is done either digitally (City website, email blasts, social media) or through physical materials (mailers, newspaper ads).

User Groups

The 2045 General Plan is intended for use by a variety of individuals and organizations, including residents, businesses, developers, City staff, the City Council, and appointed boards and commissions.

Residents

For Atascadero residents, the General Plan indicates: 1) the overall uses that are permitted in various Atascadero neighborhoods and districts, 2) the long-range plans and changes that may affect different areas of the community, 3) the programs and services the City will develop or refine to improve quality of life, and 4) the policies the City will use to evaluate future development applications. Sections of the General Plan of most interest to residents include the Vision and Guiding Principles (see **Chapter 2**), Land Use and Community Form Element (see **Chapter 3**), Mobility Element (see **Chapter 6**), Recreation and Open Space Element (see **Chapter 7**), and Safety and Emergency Preparedness Element (see **Chapter 9**).

Businesses

For Atascadero businesses, the General Plan outlines the actions the City will take in support of local business and to expand and diversify the local economy. General Plan sections of most interest to businesses include the Vision and Guiding Principles (see **Chapter 2**), Land Use and Community Form Element (see **Chapter 3**), Economic Development Element (see **Chapter 4**), Mobility Element (see **Chapter 6**), and Safety and Emergency Preparedness Element (see **Chapter 9**).

Developers

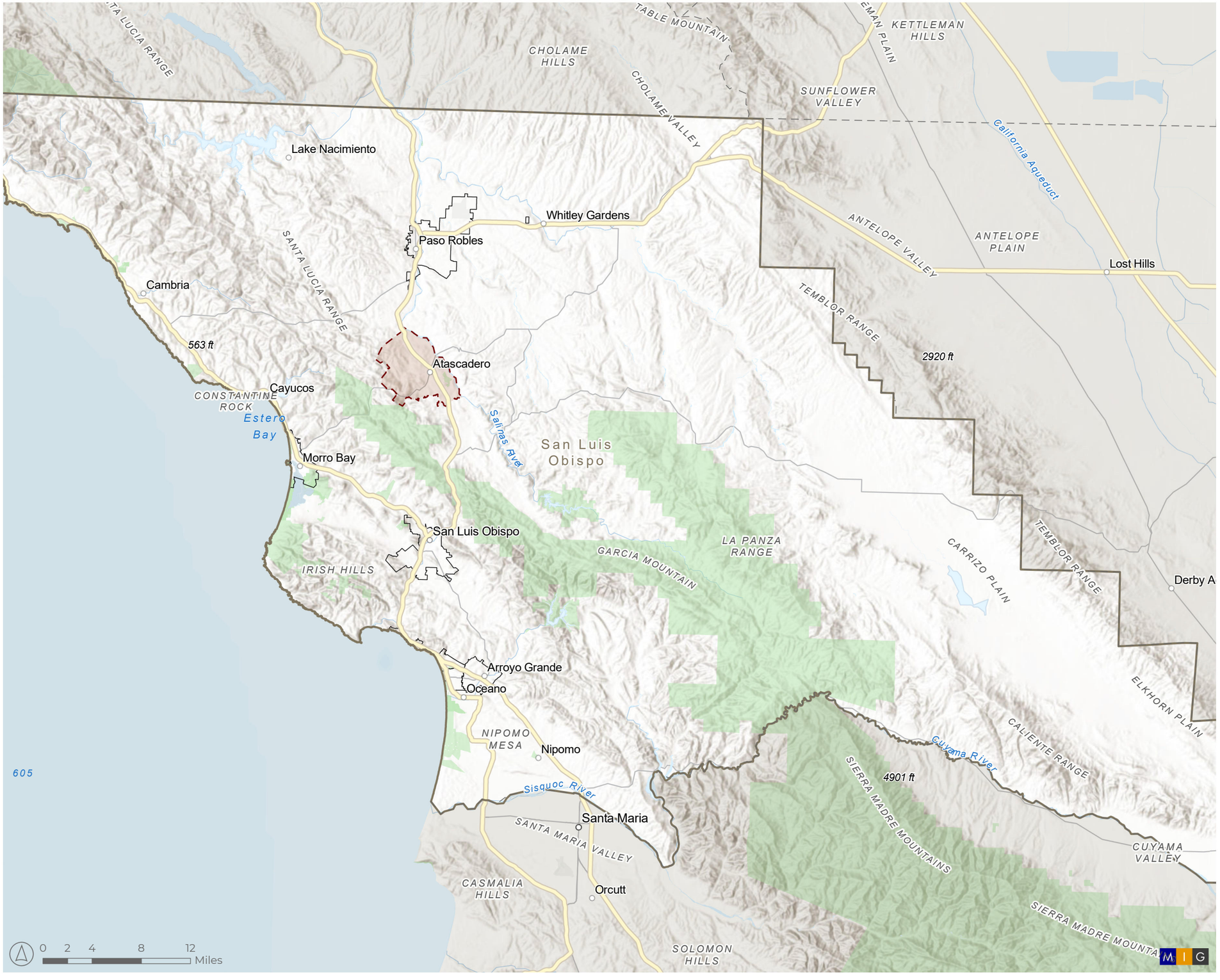
For developers looking to build in and contribute in a positive manner to Atascadero, the General Plan provides an overview of the Atascadero community, summarizes its vision, and outlines the overarching policies and expectations for development. Developers should review all elements of the General Plan to gain an understanding of challenges and opportunities related to land use and economic development. Other applicable documents, such as specific plans and the Zoning Ordinance, should also be reviewed to gain a complete perspective on the City's regulatory documents and processes.

City Staff

City staff uses the General Plan to make decisions related to programs and services, capital improvement projects, and land use and development applications. The Plan also provides the goal and policy framework for City staff to make land use recommendations to the City Council, Planning Commission, and other boards and commissions. In addition, the General Plan provides a detailed implementation program that identifies actions to be completed by City staff. The implementation programs can be used as a guide to establish annual work programs and budgets.

City Council, Boards, and Commissions

For the City Council and appointed boards and commissions, the General Plan guides policy and development decisions and actions on capital improvement projects. Future land use and development decisions and infrastructure improvements must be consistent with the General Plan.



AUTHENTIC Atascadero OUR CITY, OUR PLAN

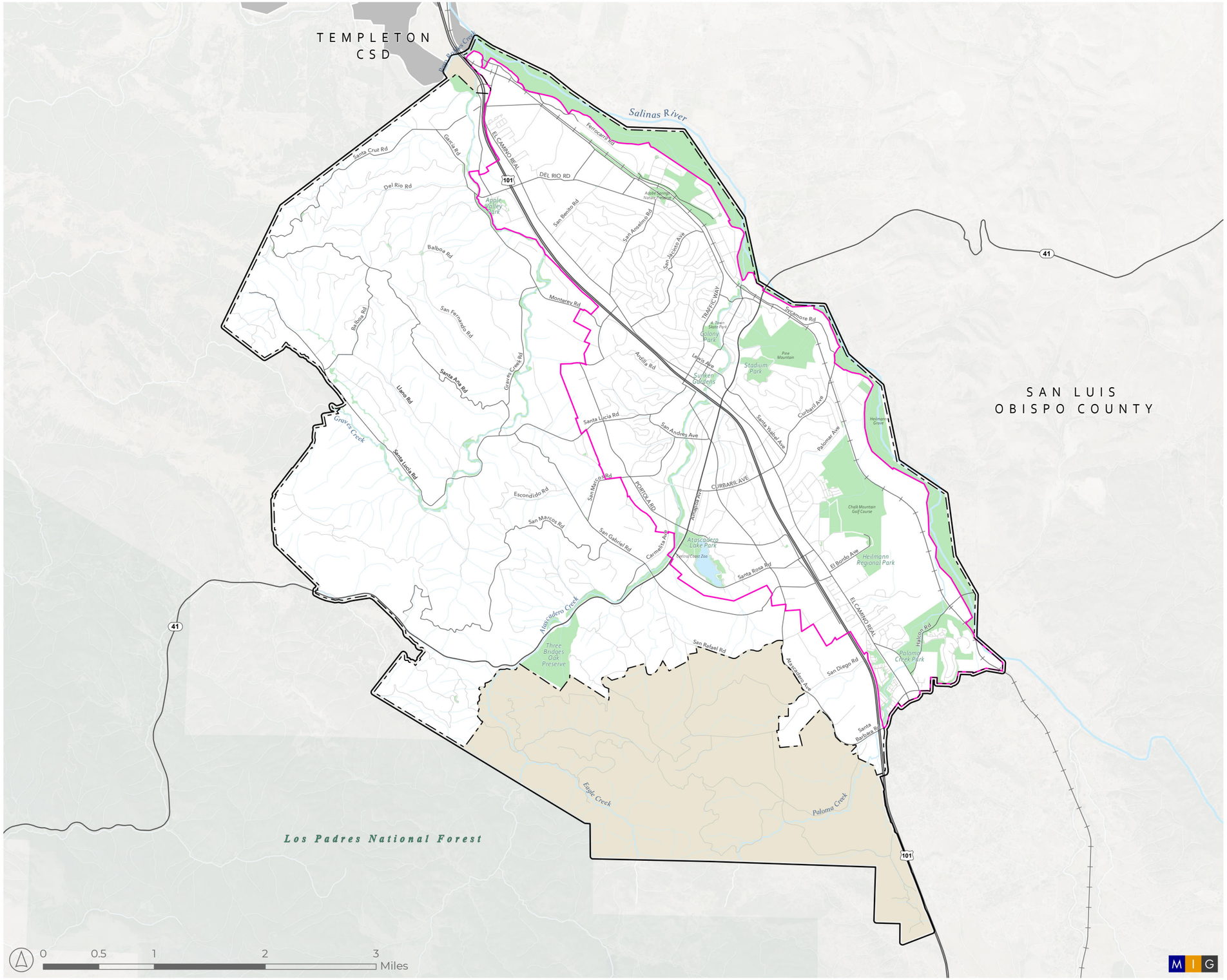
Figure 1-1

Regional Context

Basemap Features

- Atascadero City Limit
- San Luis Obispo County
- San Luis Obispo County Cities
- Highways
- Major Roads
- Creeks, Drainages, Rivers, and Waterbodies
- Rivers + Waterbodies

Source(s): Esri, USDA, CADOT, CNRA, County of San Luis Obispo Open Data, City of Atascadero, 2024.



AUTHENTIC Atascadero OUR CITY, OUR PLAN

Figure 1-2

Planning Area

Basemap Features

- Atascadero Planning Area
- Atascadero City Limit
- Urban Services Line
- Sphere of Influence
- Creeks, Drainages, Rivers, and Waterbodies
- Parks + Open Space

Source(s): Esri, USDA, CADOT, CNRA, County of San Luis Obispo Open Data, City of Atascadero, 2024.



Chapter 2: General Plan Vision and Guiding Principles

The Vision Statement and Guiding Principles form the General Plan foundation. The Vision Statement expresses the collective community philosophy that will shape Atascadero through 2045 and beyond. The vision does not describe an end statement; rather, it defines the framework for decision making moving forward. The principles further articulate the vision by focusing on the specific growth, change, and preservation frameworks for decisions. These represent the highest-level policy direction of this General Plan. All goals, policies, strategies, and actions have been crafted to be consistent with the Vision Statement and Guiding Principles.

Vision Statement

To prioritize goals and actions in the 2045 General Plan, the City developed an overarching Vision Statement based on extensive community ideas and feedback received during the General Plan update process. This Vision Statement shown below reflects the ideas, thoughts, and desires heard from residents, local business and property owners, elected and appointed officials, and other members of the Atascadero community. The statement expresses a bold vision for Atascadero, both as a goal and lens through which long-term planning decisions will be made.

2045 General Plan Vision Statement

Atascadero provides opportunities for all residents and business owners to thrive. Our community-focused culture pursues investments and land use strategies that create a diversity of housing types, support local businesses, improve all mobility modes, and respect our natural environment. Collective community actions improve conditions for current and future generations.

Guiding Principles

The Guiding Principles are rooted in community voices heard during initial engagement activities and City Council's strategic planning initiatives. They will both guide the goals, policies, strategies, and programs in this General Plan and future decisions the City will make related to implementation of this plan. These principles, organized into five topical categories, essentially provide the decision-making lens for City officials, staff, and decision-makers.

Guiding Principles – Our Places

- Respect Atascadero's semi-rural character as the community evolves.
- Facilitate vibrant public spaces that encourage community connections. Support City parks, trails, and facilities that provide access to a variety of recreation experiences.
- Promote investments in downtown that support the needs of local businesses and residents and provide a quality experience for visitors.
- Encourage synergistic commercial and residential uses along the El Camino Real and Morro Road corridors to support long-term viability of commercial spaces.

Guiding Principles – Our People

- Support a culture that is welcoming, inclusive, and based on mutual respect.
- Create and maintain opportunities for people of all income levels and ages to live, work, raise families, and retire in Atascadero.
- Target growth to serve community needs and enhance the quality of life.

Guiding Principles – Our Economy

- Incentivize a mix of business and revenue streams that support a resilient economy.
- Diversify Atascadero's employment opportunities to address the needs of an evolving workforce and attract jobs for all skill levels and income ranges.

Guiding Principles – Our Infrastructure

- Facilitate safe, convenient, and comfortable connections for people of all abilities and in different stages of life.
- Support and maintain efficient and sustainable infrastructure systems.
- Organize public service systems so that all neighborhoods and business districts have access to public services and emergency response.
- Plan and prepare for community safety and resiliency from evolving climate threats, natural, and human-caused hazards.

Guiding Principles – Our Natural Environment

- Integrate Atascadero's natural, historical, and cultural landscapes and resources into planning decisions.



Chapter 3: Land Use and Community Form Element

Introduction

Nestled between the Salinas River to the east and oak-covered hillsides of the Santa Lucia Mountains to the west, Atascadero is a vibrant community with a rich history and rural community form. While Atascadero's nascent land use pattern was established by and built to conform to the 1913 Colony Plan, over 100 years of development, evolving community needs, and external influences—most notably the 1954 construction of Highway 101 through the middle of Atascadero—have resulted in a community largely organized around two major corridors: El Camino Real and Highway 41. Businesses predominate along the corridors, with single-family residential neighborhoods extending east and west. This Land Use and Community Form Element accounts for the City's history of growth and development but is intentionally forward thinking about how Atascadero can evolve into a more mixed-use and job-rich community, supported by a range of new housing types, businesses formats, walkable neighborhoods, and a dynamic and active Downtown.

Grounded on the community vision (see **Chapter 2**) this chapter establishes the framework for short- and long-term decisions about land use and development patterns. The primary objective is to accommodate moderate growth that respects established neighborhoods, historical assets, and natural landscapes.

Integral to the vision is preservation of the qualities that distinguish the community. Residents consistently tout the balance Atascadero achieves between accommodating rural lifestyles and providing places more suburban in nature. This General Plan continues to implement the Urban Services Line (see **Figure 1-2**).

Land Use and Community Form Priorities

To ensure Atascadero has the right mix of land uses, range of housing types, job-rich commercial and mixed-use districts, a thriving economy, and vibrant Downtown, this General Plan addresses the following land use and community attributes.

Atascadero's Authentic Character

Atascadero is a unique place. The community values Atascadero's special character, with a strong will to preserve these features when exploring opportunities for growth. The people make Atascadero the supportive, family-oriented community that it is, and the General Plan needs to promote areas to gather, recreate, socialize, and conduct business as the community grows and evolves.

Rural Residential Focus

Atascadero's predominant land use, in terms of total acreage, consists of large lot homesites with a rural character, encompassing over 9,000 acres (just over 41 percent of the City). Most of these homesites lie west of Highway 101, beyond the Urban Services Line, and extend to the northern and southern edges of the City limits. Terrain and the absence of sewer service will continue to limit growth west of Highway 101.

Commercial Corridors

Commercial businesses extend over seven miles along El Camino Real and Morro Road south of El Camino. Industrial uses are concentrated along the northeastern fringe of the City, along Traffic Way and the Salinas River. No other areas of Atascadero are suitable for business activity based on topography and infrastructure limitations, so land use decisions will need to account for the City's strategic job growth objectives and provide space for desired local businesses.

Housing Affordability

Housing affordability is a continuing concern voiced by the community, both locally and throughout the region. The type and size of housing has made it challenging for younger residents and first-time home buyers to find housing that they can afford. Regional desirability and the increasing ease of remote work resulted in people moving to Atascadero from the Los Angeles and Bay Area regions, tightening the housing market. Expanding the range of housing types and

affordability in Atascadero has become more critical to meet the needs of long-time residents. Higher density, multi-family, and accessory dwelling unit (ADU) projects all represent ways to increase the supply of affordable housing for the local workforce.

Jobs-Housing Balance

In 2024, Atascadero had a job-to-housing ratio of 0.75, indicating substantially more households than jobs in the City. Over 10,700 Atascadero residents were employed outside of the City in 2019, while 6,000 employees traveled to Atascadero for work. The jobs-to-housing imbalance has persisted over time, with one reason being that the land area available to support large-scale employment centers is limited. However, evolving technologies and the ways that business is conducted mean that limited space can be used more efficiently. The City's economic development strategy focuses on attracting a greater diversity of businesses that create new jobs for residents, as well as placemaking to support commercial synergy and vitality. Land use policy in this element supports this objective.

Strategic, Targeted, and Managed Growth

The City is committed to accommodating and planning for future growth through higher allowed housing densities and expanded opportunities for job-generating businesses, all within the Urban Services Line. Areas targeted for change and growth are close to the Downtown and along El Camino Real and Morro Road, creating a synergy of focused land uses at key nodes along the each corridor.. This element supports these two key City objectives, and any public infrastructure improvements needed to support this growth will occur in line with these objectives.

- Moving toward a 1.0 jobs/housing ratio, meaning local employment opportunities will increase. This objective aims to achieve a balance between the number of available jobs and the number of workforce residents within a community, potentially resulting in enhanced economic vitality, improved quality of life and affordability, and reduced commutes and vehicle miles traveled. These initiatives will limit environmental impacts associated with growth.
- Focusing new housing production on the creation of higher-density development, thereby diversifying the housing stock and accommodating households of all income levels. This includes a combination of traditional multi-family style development, missing middle style development, and incremental neighborhood infill development to create a range of housing types and settings.

Land use policy will allow for approximately 4,800 new jobs and 4,500 new dwelling units relative to the 2024 baseline. Planned residential density increases could increase Atascadero's population by approximately 7,800 people. The forecasted growth included in this General Plan is shown on **Table 3-1**.

Table 3-1: General Plan Forecasted Growth

Type	Baseline (2024)	General Plan Horizon Year (2045)	Net Change (2024 – 2045)
Dwelling Units (total)	11,529	15,976	+4,447
Single-Units	*9,594*	*9,900*	*+306*
Multi-Units	*1,935*	*5,907*	*+3,972*
Population[1]	30,296	38,112	+7,816
Employees	8,644	13,438	+4,794
Jobs/Housing Ratio[2]	0.75	0.84	+0.9

1. Population includes group quarters (1,318) at Atascadero State Hospital.

2. Jobs/Housing Ratio is an equation used to determine how many jobs are available in a community relative to the number of dwelling units (homes). The policy approach assumes that a "balanced community" has a 1.0 ratio (or 1:1), which strives to match the number of local jobs to the number of available housing units. This approach does not require residents to work in town; rather, it looks to provide the opportunity for residents to have jobs within the community.

Maintaining the historic Colony land use pattern and rural character of Atascadero is of utmost importance to residents. This will be achieved using Placetypes to guide and accommodate Atascadero's desired growth through 2045. Placetypes, or land use classifications, illustrate the type, character, and density/intensity of development envisioned. This will ensure compatibility with Atascadero's established character while creating a vision for growth.

Placetypes and Land Use Plan

To identify existing and planned land uses throughout the Planning Area, this General Plan uses a designator system consisting of "Placetypes." Each Placetype category defines both the primary uses of land allowed and the character of those uses. Placetypes are broad enough to provide flexibility in implementation and clear enough to provide sufficient direction to carry out the General Plan. While most of the Placetypes reflect existing and long-established development types such as Rural Residential, Commercial, and Industrial, three new Placetypes are established as part of this General Plan: High Density Multi-Family, Mixed Use, and Innovation/Flex.

Table 3-2 summarizes each Placetype, including generally allowed uses, development intensities, and corresponding zoning districts. The extent to which properties may be developed or redeveloped over time is expressed in terms of density (ranges) for residential uses and intensity (maximums) for nonresidential development.

Density reflects how many units may be built per acre of land (dwelling units per acre). Intensity is analyzed using a floor-area ratio (FAR) metric, which measures the building square footage on a property relative to the size of that property. Density and intensity do not control building

height, setbacks, required open space area, or other development parameters. The Zoning Code establishes how density and intensity are implemented citywide through development standards and other provisions.

The General Plan Land Use Plan (see **Figure 3-1**) illustrates the planned distribution, location, and extent of future land uses within Atascadero and the sphere of influence. Beyond what is required by State law, each Placetype is further described to inspire the general character, desired building types, and streetscape elements.

Table 3-2: Placetypes

Placetype	Density and Intensity	Primary Use(s)	Corresponding Zoning Districts	Character
RURAL RESIDENTIAL One home on a lot generally one acre or larger in size, depending on slope conditions	0.1 – 1 unit per gross acre	Residential	Residential Rural – 2.5-10 acres Residential Suburban: 1.5-2.5 acres	
SINGLE-FAMILY RESIDENTIAL One home on a lot generally less than one acre in size	1 – 4 unit per gross or net acre *(zone district dependent)*	Residential	Residential Single Family – 1 acre Residential Single Family – 0.5 acre Residential Small Lot Single Family	
LOW DENSITY MULTI-FAMILY Duplexes, triplexes, fourplexes, and cottage clusters	5 – 12 units per net acre	Residential	Low Density Multi-Family Residential	

Table 3-2: Placetypes

Placetype	Density and Intensity	Primary Use(s)	Corresponding Zoning Districts	Character
MEDIUM DENSITY MULTI-FAMILY Duplexes, triplexes, fourplexes, cottage clusters, townhomes, and mobile home parks	13 – 24 units per net acre	Residential	Medium Density Multi-Family Residential	
HIGH DENSITY MULTI-FAMILY Apartments and condominiums	25 – 36 units per net acre	Residential	High Density Multi-Family Residential	
MIXED USE Combined commercial and residential uses on a project site	20 – 36 units per net acre 1.0 FAR	Residential Commercial Civic and Institutional	Mixed Use – Commercial 1 Mixed Use – Commercial 2 Mixed Use – Office	

Table 3-2: Placetypes

Placetype	Density and Intensity	Primary Use(s)	Corresponding Zoning Districts	Character
DOWNTOWN MIXED USE Mix of civic, dining, shopping, recreation, residential, entertainment, and other pedestrian-oriented uses	20 – 45 units per net acre 3.0 FAR	Residential Commercial Civic and Institutional	Downtown Commercial Downtown Office	
COMMERCIAL Retail stores, offices, restaurants, entertainment, and service uses	0.6 FAR	Commercial	Commercial Commercial Service	
INNOVATION/FLEX Research and development, light manufacturing, creative industries, and dining	0.6 FAR	Commercial Light Industrial	Commercial Innovation	

Table 3-2: Placetypes

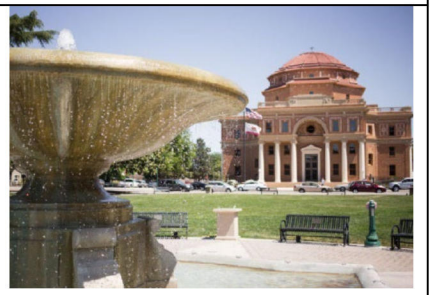
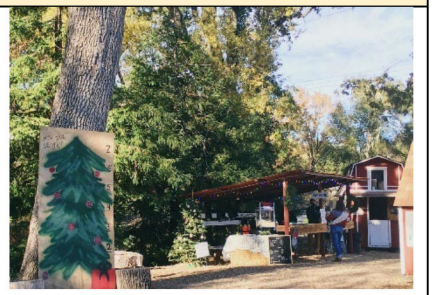
Placetype	Density and Intensity	Primary Use(s)	Corresponding Zoning Districts	Character
INDUSTRIAL Manufacturing, materials processing, assembly, and limited storage	0.8 FAR	Industrial and Warehousing Transportation and Utilities	Industrial	
PUBLIC/QUASI-PUBLIC Government facilities, public schools, and private utilities	0.8 FAR	Civic and Institutional	Public	
CONSERVATION/PARKS/OPEN SPACE Parks and recreation and community-serving uses, habitat preserves, rivers and creeks, other protected lands	Not applicable	Conservation Parks and Recreation Open Space	Recreation – Parks Conservation/ Parks/OS Conservation/ Parks/OS	

Table 3-2: Placetypes

Placetype	Density and Intensity	Primary Use(s)	Corresponding Zoning Districts	Character
AGRICULTURE Livestock, crop production, and one home on a lot one acre or larger in size, depending on slope conditions	0.1-0.4 units per gross acre	Agriculture Residential	Agriculture	





RURAL RESIDENTIAL

General Location

Rural Residential is the prevalent Placetype outside the Urban Services Line. Within the Urban Services Line, Rural Residential is concentrated west of Highway 101 and east of El Camino Real north from San Benito Road and east from the Southern Pacific Railroad corridor.

Character and Typical Development

Rural Residential neighborhoods are well established and rural in nature. Development is characterized by large lots (1.5 to 10+ acres) and large setbacks, single-family detached homes, vacant land, and livestock.

Major Corridor(s) or Mobility Characteristics

The road network in Rural Residential areas supports low traffic volumes and is primarily composed of winding, tree-lined local streets, some of which have no outlet.

Defining Features

- Steep topography
- Ample private outdoor space
- Dependent on onsite wastewater facilities





SINGLE-FAMILY RESIDENTIAL

General Location

Single-Family Residential is the prevalent Placetype within the Urban Services Line, outside the Downtown core and commercial corridors. This Placetype buffers the Rural Residential Placetype from other, more intensive residential and commercial uses.

Character and Typical Development

Single-Family Residential neighborhoods are well established and suburban in nature. Development is characterized by medium to large lots (less than or equal to one acre) occupied by single-family detached homes. Additional characteristics include irregular block shapes, curvilinear streets, absence of streetlights, and limited or no sidewalks. The smaller lot size zone within this designation allow opportunities for missing middle and gentle density style infill development.

Major Corridor(s) or Mobility Characteristics

The road network in Single-Family Residential areas supports low traffic volumes and is primarily composed of narrow local streets. Key connections from Single-Family Residential neighborhoods to major corridors/destinations include San Anselmo Road, San Jacinto Avenue, Curbaril Avenue, Portola Road, and Santa Lucia Road.

Defining Features

- Private outdoor space
- Proximity to nearby parks, recreation opportunities, shopping, and public facilities





LOW DENSITY MULTI-FAMILY

General Location

Low Density Multi-Family neighborhoods are concentrated adjacent to more urban uses, positioned between the Mixed Use and Single-Family Residential Placetypes.

Character and Typical Development

Low Density Multi-Family neighborhoods continue to grow in Atascadero, providing a mix of housing types and affordability. Development in this Placetype is urban in nature and characterized by detached and attached multi-unit development (cottage cluster, duplex, triplex, fourplex, multiplex with 5+ units). Additional characteristics include irregular block shapes, streets that run parallel and/or connect to major corridors, streetlights, on-street parking, and sidewalks.

Major Corridor(s) or Mobility Characteristics

The road network in Low Density Multi-Family areas supports low traffic volumes and is primarily composed of local streets. Key connections from Low Density Multi-Family neighborhoods to major corridors/destinations include San Benito Road, Rosario Avenue, Curbaril Avenue, Atascadero Avenue, and San Andres Avenue.

Defining Features

- Private and/or shared amenities (e.g., entries, outdoor space, driveway, pedestrian path)
- Pedestrian and bicycle access to and from nearby parks, recreation opportunities, shopping, and public facilities
- Consolidated or shared parking





MEDIUM DENSITY MULTI-FAMILY

General Location

Medium Density Multi-Family is concentrated along major corridors, including El Camino Real, Morro Road, and Traffic Way, in addition to adjacent streets. This Placetype acts as a buffer between nonresidential or mixed-use and lower-density residential uses.

Character and Typical Development

Medium Density Multi-Family neighborhoods continue to grow in Atascadero, providing a mix of housing types and affordability. Development in this Placetype is urban in nature and characterized by detached and attached multi-unit development (duplex, triplex, fourplex, and multiplex with 5+ units). Additional characteristics include irregular block shapes, streets that run parallel and/or connect to major corridors, streetlights, and sidewalks.

Major Corridor(s) or Mobility Characteristics

The road network in Medium Density Multi-Family areas supports moderate traffic volumes and is primarily composed of collector and arterial streets. Key connections from Low Density Multi-Family neighborhoods to major corridors/destinations include La Linia Avenue, Santa Ysabel Avenue, Santa Ynez Avenue, Curbaril Avenue, Atascadero Avenue, and San Andres Avenue.

Defining Features

- Private and/or shared amenities (e.g., entries, outdoor space, driveway, pedestrian path)
- Pedestrian and bicycle access to and from nearby parks, recreation opportunities, and public facilities
- On-street and consolidated or shared parking





HIGH DENSITY MULTI-FAMILY

General Location

High Density Multi-Family is concentrated along the southern segment of El Camino Real, between Paloma Park and Santa Rosa Road. Additional High-Density Multi-Family areas are located near the Downtown core.

Character and Typical Development

This Placetype is intended to promote high-density residential development to support commercial nodes and enhance neighborhood vibrancy. This Placetype is characterized by moderate residential building heights of a more urban character, including apartments and condominiums with shared entrances and open spaces. Lower-scale structures are typically found in areas transitioning to surrounding residential neighborhoods. Transitions between Placetypes are established with development standards in the Zoning Code.

Major Corridor(s) or Mobility Characteristics

Key connections from High Density Multi-Family neighborhoods to major corridors/destinations include El Bordo Avenue, Principal Avenue, Santa Lucia Avenue, and Atascadero Avenue. High Density Multi-Family areas front or back up to El Camino Real.

Defining Features

- Private and/or shared amenities (e.g., entries, outdoor space)
- Pedestrian, bicycle, and transit connectivity to and from Downtown
- On-street and consolidated shared parking





MIXED USE

General Location

Mixed Use is generally concentrated near major intersections, as well as along El Camino Real and Morro Road between El Camino Real and Atascadero Lake Park.

Character and Typical Development

This Placetype is intended to promote a flexible and compatible mix of residential and commercial uses in focused areas. A commercial land use dominates the street facing façade or ground floor of a mixed-use project, while office and residential dominate the upper floors (vertical mixed-use) or buildings that are set back from a public street (horizontal mixed-use). Each area that includes the Mixed Use Placetype is unique. The composition and mix of permitted uses are established by zoning districts in the Zoning Code. Development may allow for a horizontal or vertical mix of commercial and residential uses, depending on zoning district. This Placetype is characterized by moderate-scale residential and commercial building heights that promote urban character. Buildings are oriented toward the street to encourage pedestrian activity.

Major Corridor(s) or Mobility Characteristics

Mixed Use areas generally abut arterial and collector roads and have direct frontage along these major corridors. Parking is generally on-site with limited street parking.

Defining Features

- Multi-family residential developments, either above or adjacent to commercial uses
- Neighborhood-serving retail, office, and services
- Employment centers
- Active ground-floor uses
- High pedestrian and bicycle activity due to streetscape improvements
- Focal points of economic investment and activity
- Shared and on-street parking
- Shared or private amenities


801






Bliss
Bliss







DOWNTOWN MIXED USE

General Location

Downtown extends north of Morro Road and south of Rosario Avenue along El Camino Real, Traffic Way, and adjacent cross streets.

Character and Typical Development

Downtown Mixed Use encourages an eclectic and complementary mix of uses, pedestrian-scale development, and locally owned retail and restaurant businesses with upper-story residential and office units. Ground-floor uses should consist of businesses with a weekday, evening, and weekend presence. The Downtown Mixed Use Placetype is characterized by moderate to high building heights to promote urban character. This district has the highest density of any district.

Major Corridor(s) or Mobility Characteristics

The 0.6-mile Downtown corridor extends along El Camino Real from Rosario Avenue to the intersection of State Route 41. High levels of pedestrian and bicycle use occur throughout the Downtown core, and this district has the greatest access to transit. A street grid, with consistent block shapes and sizes, surrounds City Hall. Short walking distances, sidewalks, street trees, street parking, and access to the Sunken Gardens Park and the Salinas River corridor encourage pedestrian activity.

Defining Features

- Civic center
- Vibrant, walkable, town center
- Active ground-floor commercial uses, many of which are open during evening hours and/or weekends
- Buildings have consistent orientation with no or shallow front setbacks or with recessed storefronts for outdoor dining
- Minimized on-site parking





COMMERCIAL

General Location

Commercial Placetypes are concentrated along El Camino Real adjacent to major intersections with San Ramon, Del Rio, San Anselmo, Morro Road and Santa Rosa Road, particularly where these intersections have access to Highway 101. This Placetype is generally adjacent to Mixed Use, Innovation/Flex, and Multi-Family Placetypes.

Character and Typical Development

Commercial uses include regional- and local-serving retail, restaurants, office, tourist, and service businesses with easy access to and from residential neighborhoods. Development is characterized by single-use commercial buildings, multi-tenant shopping centers, and office buildings. Commercial tenants may include businesses targeted toward visitors to Atascadero, such as breweries, distilleries, and recreation hubs. Uses with outdoor storage are not typically permitted. Residential and Mixed-Use are adjacent to, but not within, this district to prioritize commercial activities and reduce conflict between uses.

Major Corridor(s) or Mobility Characteristics

Commercial areas abut El Camino Real and are in locations with easy access to Highway 101. Multi-modal access is encouraged as well as on-street parking to supplement on-site parking areas.

Defining Features

- Retail and employment based
- Day-to-day needs for residents, visitors, and employees

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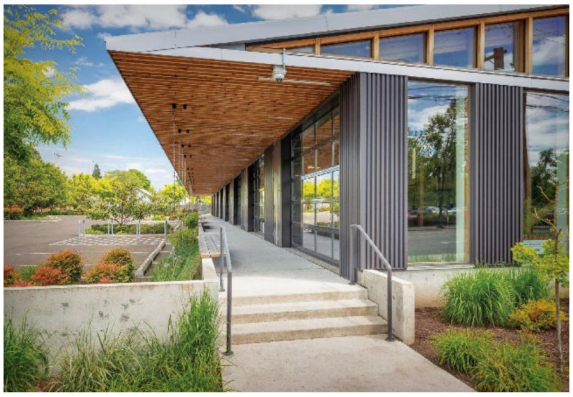
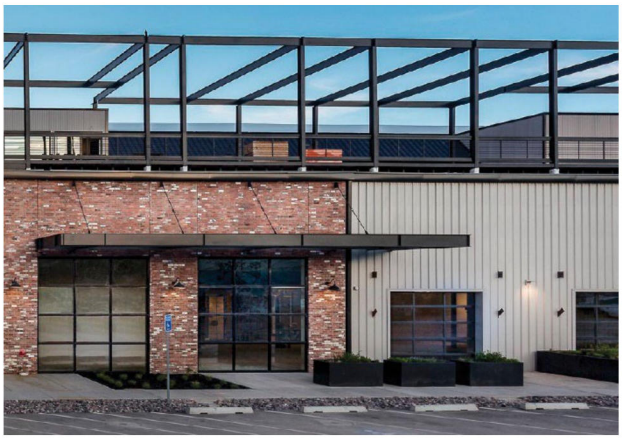








INNOVATION/FLEX

General Location

Innovation/Flex is concentrated along El Camino Real between Santa Cruz Road and San Anselmo Road, Morro Road and Curbaril, and Palomar and Principal Avenue.

Character and Typical Development

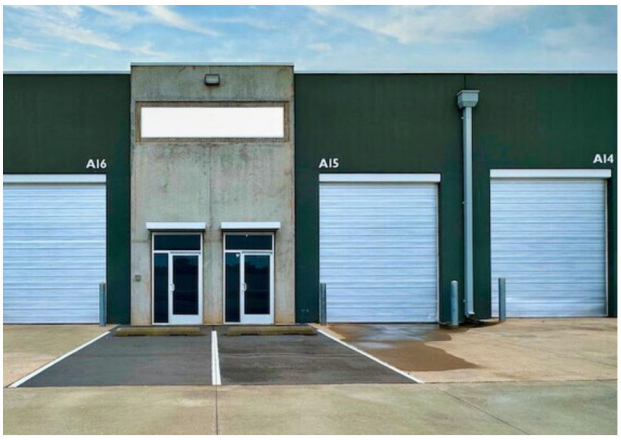
This Placetype is intended to promote opportunities for startup businesses and head-of-household jobs and provide spaces that can be adaptable to a variety of compatible uses as workforce trends evolve. This Placetype should attract concentrations of production, design, and maker-space businesses as well as uses that support those businesses and the people that work there. Development is characterized by multi-tenant buildings, often with office or retail uses oriented toward the street and light industrial/manufacturing in the back. Scale varies greatly dependent upon the surrounding context and character. Innovation/Flex has the potential to serve as a primary place for employment and commerce in the Central Coast region in support of emerging technologies and space innovations. Uses with outdoor storage are not permitted except in appropriate locations and limited quantities, and all subject to discretionary review. Residential and Mixed-Use are adjacent to, but not within, this district to prioritize commercial activities and reduce conflict between uses.

Major Corridor(s) or Mobility Characteristics

Innovation/Flex areas generally abut El Camino Real, with some areas along adjacent collector roads. Most of the parking is located on-site, but some on-street parking may be provided.

Defining Features

- Employment center providing opportunities for a mix of job types/experience
- Desired industries and businesses include but are not limited to research and design, labs, robotics and technology, and artisan business such as microbreweries, and small-scale wineries and distilleries, as well as artisanal food and craft production
- Supportive uses may include restaurants, hotels, and offices





INDUSTRIAL

General Location

Industrial is limited to two areas within Atascadero: along Traffic Way/Sycamore Road and as part of the Woodlands Specific Plan (Las Lomas Neighborhood) at Halcon Road/the Southern Pacific Railroad corridor.

Character and Typical Development

Industrial uses typically include heavy and moderately intense manufacturing, distribution, and vehicle-related uses. Development consists of varying-sized industrial buildings, either as stand-alone businesses or as part of an integrated development. These areas are intended to support industry that contributes to the fiscal health of the City.

Major Corridor(s) or Mobility Characteristics

Industrial areas abut Sycamore Road, Traffic Way, and Halcon Road. As these areas abut streets where pedestrian linkage to bordering uses is a priority, streets include pedestrian paths and bike lanes. Where areas abut the Salinas River, incorporation of trails or landscape setbacks and buffering to recreational areas is integrated. Parking is concentrated on-site.

Defining Features

- Access to Highway 101 and State Route 41
- Larger parcels for a mix of tenant uses
- Buffers between industrial and surrounding uses (e.g., landscaping, open space, large setbacks, gradual changes in density)
- Screening from the public rights-of-way





PUBLIC/QUASI-PUBLIC

General Location

Public/Quasi-Public parcels are distributed throughout the City based on the location of existing facilities, mostly within the Urban Services Line.

Character and Typical Development

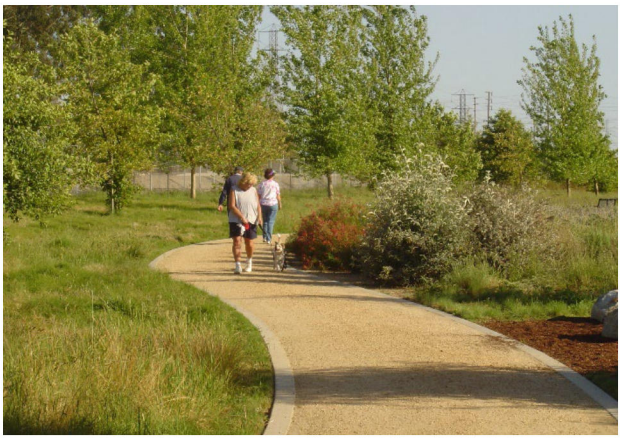
Public/Quasi-Public parcels are set aside for governmental or semi-public facilities, such as hospitals, schools, utilities, and government offices/facilities or related uses such as cemeteries. However, such public facilities may also be allowed in areas with other Placetypes, provided they comply with applicable Zoning Code standards.

Major Corridor(s) or Mobility Characteristics

The road network that connects the Public/Quasi-Public Placetype to surrounding areas is primarily composed of arterial and collector streets.

Defining Features

- Civic buildings, formal public spaces, emergency services, schools, State facilities, and community centers
- Atascadero State Hospital





CONSERVATION/PARKS/OPEN SPACE

General Location

Most of the land designated Conservation/Parks/Open Space lies along the Salinas River, Atascadero Creek, and Graves Creek. The Three Bridges Oak Preserve is the largest Conservation/Open Space area outside the Urban Services Line. Multiple City parks are located throughout the community to serve adjacent neighborhoods and citywide sports needs. The City also includes Heilman Park, which is owned and maintained by the County of San Luis Obispo.

Character and Typical Development

The Conservation/Parks/Open Space Placetype applies to lands:

- Currently used or planned for parks or recreation purposes, including trail corridors, sports fields, community gathering spaces, and equestrian facilities
- Identified as a park or creek reservation parcel
- Established for conservation purposes due to the presence of sensitive wildlife or habitats

Land designated for these uses include both publicly and privately owned land. See **Chapter 7** for additional details, including a summary of park types.

Major Corridor(s) or Mobility Characteristics

Parks are located throughout the community, with larger scale facilities generally located off arterials and collector streets and smaller neighborhood serving spaces off local roads. Parking may be provided on-street or on-site.

Defining Features

Atascadero's park system (as of 2024) includes regional parks, community parks, neighborhood parks and special use parks, trails, equestrian facilities, natural areas, and open space.

City recreation facilities include the Atascadero Lake Pavilion, Central Coast Zoo, and Colony Park Community Center.





AGRICULTURE

General Location

The Agriculture Placetype applies to two areas in Atascadero: an approximately 44-acre area adjacent to Graves Creek south of Balboa Road and an approximately 27-acre area along the Salinas River east of the Las Lomas neighborhood (Woodlands Specific Plan area).

Character and Typical Development

This Placetype designates lands to be used for agricultural activities, including field crops, orchards, and ranching and livestock raising, with the Zoning Code identifying specific permitted uses and operational standards. Allowed accessory uses include single-family detached homes and housing for agriculture employees, as permitted by the Zoning Code. Uses may also allow opportunities for public facing commercial uses such as event areas and bed and breakfasts.

Major Corridor(s) or Mobility Characteristics

Agricultural areas are largely served by local, rural roads.

Defining Features

- Graves Creek
- Orchards, cropland, grasslands, ranching and livestock, and undeveloped land

Land Use and Community Form Goals, Policies, and Actions

The following sections include goals, supporting policies, and implementation actions related to the following topics:

- Citywide Growth and Development
- Key Nodes and Corridors
- Morro Road (Highway 41)
- Industrial Areas
- Downtown

Citywide Growth and Development

Atascadero is a collection of wonderfully diverse neighborhoods, commercial centers, streets, parks, and open space areas, all having their own unique character—and with some needing focused attention to create more vibrancy and long-term community vitality. The following goals, policies, and actions look to maintain the qualities that distinguish Atascadero and to further neighborhood preservation, economic development, resource protection, and overall community well-being objectives.

Goal LU-1: Growth integrated and compatible with established land use patterns and the community aesthetic

Policy LU-1.1: Rural Character. Safeguard the rural character of Atascadero including the concept of "elbow room," which calls for maintaining larger minimum lot sizes and lower density and intensity standards proportionate to distance from the Downtown core and major corridors.

Action A: Maintain performance standards for determining minimum residential lot size in the Rural Residential Placetype.

Action B: Maintain "dark sky" requirements to minimize light pollution.

Action C: Maintain allowances for where livestock may be owned and kept within the Rural Residential and Agriculture Placetypes.

Action D: Continue to require undergrounding of utilities for new development.

Policy LU-1.2: Urban Services Line (USL). Concentrate new and infill development within the Urban Services Line in areas where utilities and public services exist or are planned.

Action A: Revisit density and intensity requirements for land use(s) if sewer extends into new areas.

Action B: Maintain Rural Residential as the predominant use and limit the subdivision of land beyond the USL.

Action C: Consider future planned density and intensity when repairing infrastructure and ensure that infrastructure is sized to accommodate future growth.

Policy LU-1.3: Character and Scale. Ensure new and infill development complements the character and scale of existing neighborhoods, cultural resources, historic structures, and natural landscapes.

Action A: Maintain design standards that address the transitions between multi-family and mixed-use development and adjacent lower-density residential zones.

Action B: Provide parking/loading from secondary streets, wherever possible, to maintain an active frontage along major corridors.

Action C: Create a transition in density of development on large parcels moving back from El Camino Real.

Action D: Update or replace the Appearance Review Manual for nonresidential development.

Action E: Undertake a comprehensive Zoning Code update.

Action F: Continue abatement programs to remove unsafe buildings and require the cleanup of premises and vacant lots with code violations.

Policy LU-1.4: Gentle Density Infill. Allow opportunities for missing middle and gentle density style infill development surrounding mixed-use and commercial corridors.

Action A: Support the development of multi-family residential, including missing middle housing, in the neighborhoods adjacent to commercial corridors, including the neighborhood bordered by Morro Road, Highway 101, and Portola Road, as a way to increase density and maintain community character.

Policy LU-1.5: Historic Resources. Encourage the conservation and preservation of structures and houses that have historical and architectural significance.

Action A: Maintain a comprehensive Historic Resources Inventory.

Action B: Continue to implement the California Historical Building Code in review, approval, and design of projects involving historic resources.

Action C: Utilize the Secretary of the Interior's Standards and Guidelines for Rehabilitating Historic Properties to assess proposed improvements to historic properties.

Action D: Develop incentives for retaining and rehabilitating Atascadero's historic resources, which may include exceptions to development regulations, conservation districts, staff technical assistance, programs to facilitate relocation instead of demolition, and Mill's Act contracts.

Policy LU-1.6: Specific Plans. Adopt, update, and implement specific plans as necessary to address community needs and changing demographic, economic, and market conditions.

Action A: Require the preparation of a specific plan for single-family subdivision developments over 100 units to address fiscal and environmental impacts, community benefits, and neighborhood compatibility.

Action B: Update existing Specific Plans and Overlay Zones to be consistent with the General Plan.

Action C: Utilize Specific Plans to streamline the development process and incentivize development through modified development standards.

Policy LU-1.7: Regional Impacts. Coordinate with neighboring cities and community services districts, the County of San Luis Obispo, and regional transportation agencies to plan for growth and minimize regional impacts.

Action A: Continue to coordinate with the County to maintain rural land use patterns, agriculture, and open space uses beyond the City limit.

Action B: Discourage land use changes by the County within the Colony boundary that would result in more intensive or higher density development, particularly in unincorporated areas and east of the Salinas River.

Action C: Develop financial agreement(s) with the County to recoup the costs to the City if development occurs beyond the City limit that would rely on City services or infrastructure.

Action D: Update the County Memorandum of Understanding requiring City comment on development proposals in the area between Vineyard Drive and Cuesta Grade, between the ridges east of the Salinas River, and Cerro Alto Campground.

Policy LU-1.8: Annexations. Ensure that growth beyond the City limit serves community needs, enhances fiscal stability, and improves quality of life for community members.

Action A: Require annexation proposals align with the Vision, Guiding Principles, Goals, and Policies included in this General Plan.

Action B: Oppose all development within the sphere of influence the site prior to annexation.

Action C: Require the approval of a Specific Plan prior to the annexation of the Eagle Ranch property.

Key Nodes and Corridors

Atascadero is defined by its two major corridors: El Camino Real and Morro Road (Highway 41). These thoroughfares have been the centers of retail, commercial, and office uses since Atascadero's historic Colony founding. They act as the "spines" of the community–connecting residential neighborhoods to employment centers, schools, civic uses, parks, highways and freeways, and adjacent cities. To support local and regional commercial, office, and housing needs, these corridors must be improved, as described in the Mobility Element (see **Chapter 6**). They should be enhanced with more pedestrian, bicycle and transit facilities; supported by focused development standards that promote placemaking and a pleasing pedestrian environment; and encouraged to redevelop to meet the current and future community needs.

Focused and intentional development in Downtown and along the major corridors maintains Atascadero's "elbow room" principle, which calls for maintaining larger minimum lot sizes and lower density and intensity standards proportionate to distance from the Downtown core and major corridors. Areas of change and growth in this Plan center around the following principles:

- Areas that support the growth and community design objectives outlined in the Vision Statement and Guiding Principles (see **Chapter 2**).
- Areas designated for and developed with commercial, office, mixed use, or industrial uses.
- Areas along major corridors and near Highway 101 that have good access to local and regional road networks, pedestrian and bicycle amenities, and civic destinations.
- Areas that have infrastructure available to support new and more intensive commercial and residential development.
- Areas that have the potential to become more walkable and economically viable as new and more intensive development occurs.
- Areas where increased residential density can support intensified commercial activity and economic vitality.
- Underutilized commercial areas where the City can capitalize on redevelopment efforts and shape development to accommodate uses that support the City's desire for a more balanced jobs-housing ratio.

Goal LU-2: Enhanced major corridors that serve regional and local needs by creating focused, distinct, and economically viable nodes

Policy LU-2.1: Innovation/Flex Areas. Create innovation areas that allow and encourage a mix of lighter, creative employment uses, entertainment, and services.

Action A: Allow property owners to convert and reuse existing buildings for creative commercial, light industrial, and office use.

Action B: Maintain and update uses in the Innovation/Flex zone to allow for restaurant and entertainment uses that are compatible with light industrial and artisan uses.

Action C: Maintain innovation/flex areas for non-residential uses to prioritize commercial activities without conflict with incompatible uses.

Policy LU-2.2: Commercial Vitality. Maintain key areas for commercial and employment uses that are incompatible with integrated residential uses.

Action A: Focus commercial retail development at key nodes to create commercial synergy and destinations for shopping and entertainment.

Action B: Maintain larger parcels of land to accommodate large format uses (e.g., business headquarters, light manufacturing, accommodation, regional retail, and tourist-serving uses) at strategic locations along major corridors and key nodes.

Action C: Maintain key commercial nodes for non-residential uses to prioritize commercial activities without conflict with incompatible uses.

Policy LU-2.3: Mid-block Infill. Promote flexible land use patterns in areas between activity nodes along El Camino Real and support increased residential densities adjacent to and along commercial corridors to support commercial business activity and growth

Action A: Encourage infill mixed-use development between commercial nodes along El Camino Real to support the economic vitality of commercial centers.

Action B: Explore flexibility in standards for mixed-use development on commercially zoned mid-block infill lots where commercial use potential is limited.

Action C: Increase residential density in areas adjacent to key commercial nodes to support commercial viability and economic vitality.

Action D: Consider utilizing Development Agreements to allow for mid-block multi-family development in exchange for commercial development/redevelopment at key locations.

Policy LU-2.4: Mixed-Use Areas. Create mixed-use districts in locations that benefit from the synergy of commercial and residential uses.

Action A: Focus vertical mixed-use development at key nodes where a ground floor commercial presence is a priority.

Action B: Provide opportunities for horizontal mixed-use developments on deep or double frontage lots where ground floor commercial uses are focused along the primary street frontage.

Action C: Prioritize land uses in mixed-use areas that generate tax revenue, attract economic activity, create jobs, and cater to residents and short-term visitors.

Policy LU-2.5: Multi-Modal Corridors. Improve pedestrian and bicycle facilities along El Camino Real and Morro Road. Major corridors should be safe, comfortable, and enjoyable for pedestrians, bicyclists, and drivers alike.

Action A: Continue to make circulation and safety improvements in coordination and collaboration with the Public Works Department and consistent with this General Plan (see **Chapter 6**).

Action B: Require new development to provide pedestrian, bicycle, and trail alignments and facilities consistent with the Mobility Element (see **Chapter 6**).

Action C: Adopt plan lines for new neighborhood streets that allow for and support orderly development with increased residential density.

Action D: Support Caltrans' completion of its complete streets plan to include pedestrian facilities and a safe buffer between the bike lane and travel/parking lanes.

Action E: Improve pedestrian and bicycle safety measures at intersections along major corridors.

Action F: Enhance entries to Atascadero along El Camino Real with gateway design elements (e.g., signage, entry monuments, landscaping, lighting, etc.).

Action G: Find locations for safe mid-block crossings on El Camino Real to connect neighborhoods and commercial centers.

Morro Road (Highway 41)

Goal LU-3: A new professional office, retail, and employment area focused on (but not limited to) the medical industry, including research and development uses

Policy LU-3.1: Medical/Office Development. Support medical, office, and supporting commercial uses along the Morro Road corridor.

Action A: Prioritize land uses along the Morro Road corridor that attract medical and healthcare-related businesses, generate high-quality jobs, and accommodate long- and short-term workforce needs.

Action B: Incentivize the relocation of existing medical offices and other weekday-only oriented uses from Downtown to the Morro Road corridor.

Policy LU-3.2: Increased residential density. Increase residential density within and adjacent to the Morro Rod corridor to support commercial and office viability.

Action A: Support higher density multi-family development between Morro Road and Atascadero Creek.

Action B: Develop standards for horizontal and vertical mixed use along Morro Road.

Industrial Areas

Goal LU-4: A dedicated, focused area for industrial activity that minimizes impact on nearby residential neighborhoods and protected open space areas

Policy LU-4.1: Employment Opportunity/Diversity. Protect and enhance viable industrial uses to retain job employment opportunities and job diversity.

Action A: Provide zoning flexibility for adaptive reuse of heavy industrial buildings.

Action B: Ensure that the properties along Via Ave are developed to maximize spaces for jobs, industry, and/or commerce. Partner with the property owners to develop a comprehensive master plan for the area.

Policy LU-4.2: Research and Development. Transition away from heavy industrial and storage uses in favor of light industrial uses.

Action A: Prohibit future uses solely devoted to outdoor storage in industrial areas.

Action B: Adopt development standards that focus on creating buildings and spaces that can be adapted over time and respond to changing trends. Consider a form based code for new development in the Industrial Zone.

Policy LU-4.3: Buffer Industrial Uses. Provide buffers between industrial and residential uses. Focus heavy industrial sites away from residential uses.

Action A: Establish standards for new industrial uses adjacent to existing residential and commercial uses, and standards for new residential and commercial uses adjacent to existing industrial uses.

Action B: Develop standards for the interface between industrial development and adjacent creeks and rivers. Consider requirements for public trails and access where appropriate.

Action C: Focus landscaping, including street trees and visual landscape buffers along Traffic Way and Sycamore Ave to enhance the pedestrian and bike connections between adjacent commercial and residential neighborhoods as well as adjacent schools.

Downtown

Goal LU-5: A Downtown core celebrated by the community, with places to shop, be entertained, live, gather outside, learn, and engage in civic discourse

Policy LU-5.1: Community Vibrancy. Intensify the Downtown core with restaurants, community-serving retail, shopping, and entertainment opportunities for residents and visitors.

Action A: Update the Downtown Revitalization Plan.

Action B: Encourage encroachment into the right-of-way and City plaza spaces for outdoor dining activities, where feasible and where public access is maintained.

Action C: Encourage new multi-story developments to accommodate office spaces above the ground floor in the Downtown core.

Action D: Develop standards to incentivize a reduction in surface parking on Downtown lots and develop a program for alternatives to on-site parking, such as an in-lieu fee program to consolidate parking within the Downtown core and optimize land use, increase commercial viability, and enhance the pedestrian experience.

Policy LU-5.2: Highest Density Residential/Mixed Use. Foster a dynamic Downtown environment by concentrating larger mixed-use projects, higher-density residential development, employment opportunities, and amenities Downtown.

Action A: Focus the highest density and intensity development within the Downtown core.

Action B: Create a discretionary review process for increased height and create standards to ensure that City Hall remains the most prominent structure Downtown.

Action C: Track vacant and underutilized sites. Compile, maintain, and publish an inventory of publicly owned vacant sites that may be developed to serve community needs.

Policy LU-5.3: Pedestrian Environment. Prioritize pedestrian safety and circulation Downtown with sidewalk improvements, street trees, and other streetscape and public realm amenities.

Action A: Update the Appearance Review Manual and the Downtown Design Toolkit to focus on pedestrian-scale design elements and private outdoor use areas that support a vibrant and active streetscape.

Action B: Explore the use and/or redevelopment of alleys for increased pedestrian and community gathering spaces.

Action C: Continue outreach to Downtown business and property owners to facilitate street tree and frontage maintenance. Seek opportunities for City partnerships to support these actions.

Action D: Periodically review parking needs and continue to provide information on publicly available parking within and surrounding the Downtown core.

Policy LU-5.4: Civic Center. Promote the centralization of civic uses and functions in the Downtown core.

Action A: Support a variety of events Downtown year-round, including City-sponsored events and events that encourage partnerships with local and regional organizations.

Action B: Continue to support the adaptive reuse of the Printery building and the adjacent Armory site for future civic uses.

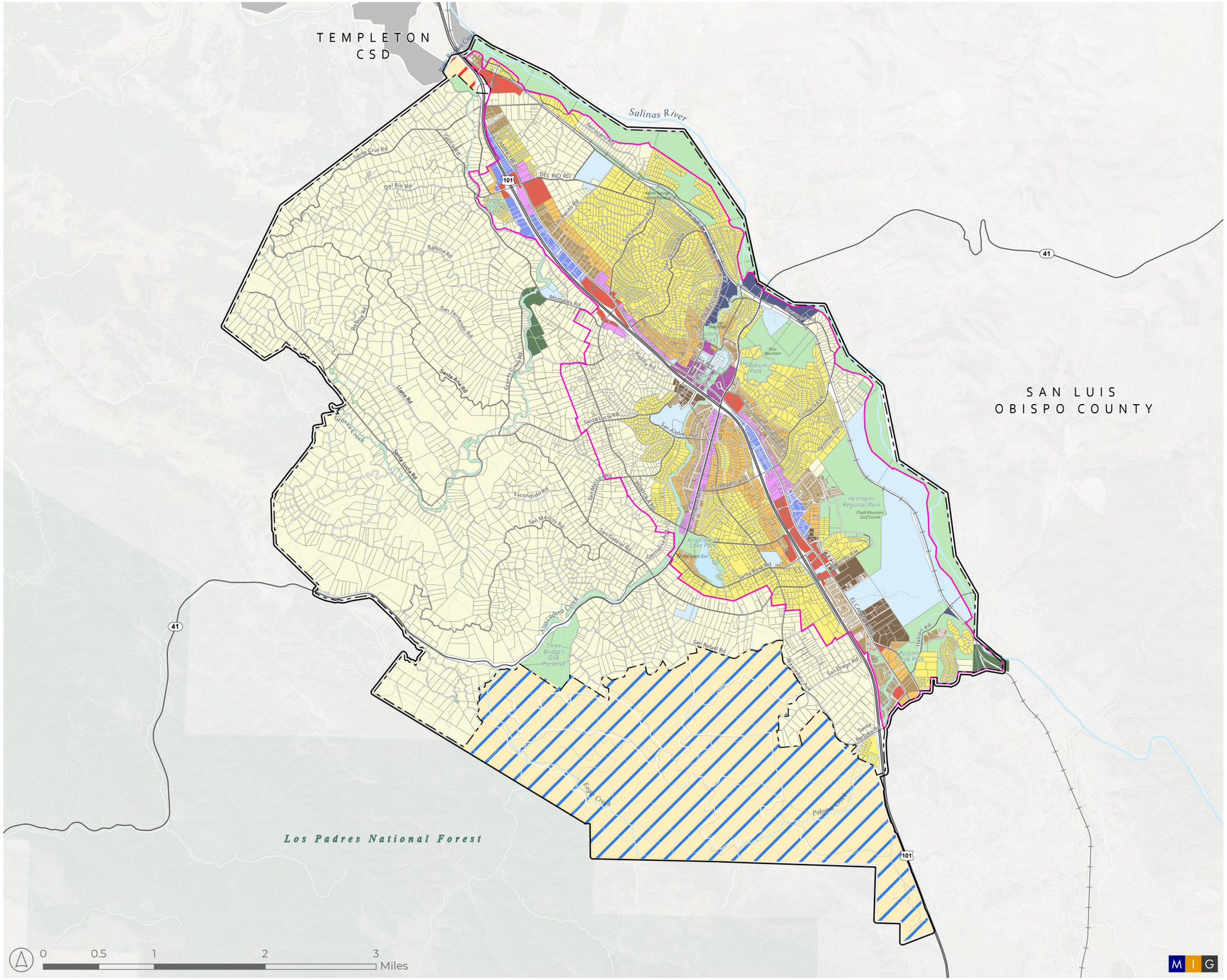
Policy LU-5.5: Atascadero Creek. Transform Atascadero Creek in the Downtown core into a recreation asset, including trails, outdoor plazas, and public gathering spaces.

Action A: Continue to make improvements to the multi-use path along the Atascadero Creek corridor.

Action B: Consider opportunities for creek-oriented development Downtown.

Action C: Enhance opportunities for public use of Atascadero Creek Reservation Parcels 2 and 3 and develop standards for adjacent businesses to orient toward the creek.

Action D: Partner with the Historic Society to focus future museum and historical resource operations at their Hotel Park parcel.


TEMPLETON CSD
SAN LUIS OBISPO COUNTY
Los Padres National Forest
Salinas River
Atascadero Creek
Graves Creek
Three Bridges Oak Preserve
Heilmann Regional Park
Chalk Mountain Golf Course
Atascadero Lake Park
Zoo
Sunken Gardens
Paloma Creek Park
Sunken Park
Colony Park
Pine Mountain
Sobrato Park
Rotary Park
Pioneer Park
Del Rio Rd
Santa Cruz Rd
Balboa Rd
Montalvo Rd
San Ramon Rd
Santa Ana Rd
Santa Lucia Rd
Santa Lucia Mesa Rd
Encinal Rd
Encinada Rd
San Marcos Rd
San Gabriel Rd
Santa Rosa Rd
San Rafael Rd
San Diego Rd
Santa Barbara Rd
Halcon Rd
Portola Rd
Curbaril Ave
Pismo Ave
Entrada Ave
Palomar Ave
Gorbea Ave
Alhambra Ave
Capistrano Ave
Camarillo Ave
Cayucos Ave
Morro Ave
Ardilla Rd
Rosario Rd
Ramona Rd
Rancho Rd
Lewis Rd
Lo Rd
Las Lomas Rd
Las Cruces Rd
Las Cruces Ct
Las Cruces Cir
Las Cruces Pl
Las Cruces Way
Las Cruces Ln
Las Cruces Dr
Las Cruces Loop
Las Cruces Trl
Las Cruces Pkwy
Las Cruces Blvd
Las Cruces Ave
Las Cruces St



Chapter 4: Economic Development Element

Introduction

For its compact size, Atascadero has a diverse local economy, with strengths in healthcare, small-scale manufacturing, and retail sectors, with a growing participation in hospitality and tourism. Atascadero's location in the heart of the Central Coast along Highway 101 creates easy connections north and south, with people from the greater Los Angeles and Bay Area regions only three hours' distance to the amenities Atascadero offers. Atascadero serves as a regional gateway to California's Central Coast and via Highway 41, provides access to the Central Valley. Most importantly, however, is Atascadero's role in providing places where locals can work and shop, thereby reducing trips to nearby communities and building an economic base that supports increased investment in City infrastructure and services.

In previous General Plan planning processes, the City addressed its economic development goals within the context of land use planning. This 2045 General Plan elevates the discussion of economic development by dedicating a stand-alone element that highlights specific strategies the City will pursue to support established businesses and further diversify the local economy

through new business attraction. These goals, policies, and actions can be turned into marketing materials to demonstrate to desired industries Atascadero's commitment.

In planning for fiscal sustainability, the City continues to look for ways to increase municipal revenues, primarily through business diversification. Although the City's general fund revenues appeared relatively stable for the first two decades of this century, fund revenues actually decreased by 10 percent between fiscal years 2007-2008 and 2022-2023 when inflation was factored in, limiting the City's ability to expand service levels or invest in infrastructure. Some voter-approved measures aimed to restore General Fund revenues, such as Measure D-20 (approved in 2020), which to raised sales tax by $0.01, and measure F14 (extended as measure L-14 in 2024), which allocates a 0.5% sales tax toward repairing and maintaining neighborhood roads.

One key strategy in the 2045 General Plan is to support and grow the number of jobs in Atascadero. Historically, the City has been a bedroom community, with many residents commuting out of the City for work each day. One way to change this dynamic is to encourage more higher-wage jobs and new industries to locate in Atascadero. While no optimal jobs/housing balance ratio can be known to strive for (see **Chapter 3**), the local jobs to housing "imbalance" that has existed for years reveals a need to increase nonresidential, employment-generating uses in Atascadero which, on a per-service population basis, could lead to higher net positive annual general fund revenues. Capturing this demand is a key component of City fiscal sustainability and will allow the City to appropriately plan for and deliver needed public services and capital improvements.

In planning for the future, the City's goal is to focus on finding ways to diversify revenues by encouraging new types of businesses and industries to locate in Atascadero. In particular, this includes higher wage and head of household jobs available to local residents. To support the City's economic development initiatives, the 2045 General Plan details a new path forward and addresses these key economic development challenges and opportunities.

City Revenue Sources

The City's main general fund revenue sources in 2022 were property taxes (36.9 percent), sales taxes (33.6 percent), and transient occupancy taxes (4.2 percent). Combined, all types of taxes accounted for roughly 82.6 percent of Atascadero's estimated revenue in 2023. Of these revenue sources, transient occupancy taxes (the tax on hotel rooms) were disproportionately affected by non-resident activity, underscoring the importance of commercial and visitor activity to the City's fiscal health.

Long-Term Fiscal Health

Between 2007 and 2023, the City's overall general fund revenues decreased by 10 percent, limiting the ability to expand service levels or invest in new/upgraded infrastructure. Creating long-term fiscal sustainability is a key objective. The lack of growth that outpaces inflation in general fund revenues will make it difficult for the City to improve public service levels going forward unless new funding sources are identified. Even maintaining existing service levels

could be difficult, particularly for higher cost items like salaries and pension obligations that increase faster than inflation. In planning for fiscal sustainability, the 2045 General Plan identifies ways to increase revenues primarily through the types and extent of new uses and businesses and by planning for efficient growth. Efficient growth is particularly important because it ensures the City is not overcommitted with a sprawling infrastructure network.

Visitor Activity Growth

Visitor activity in Atascadero and surrounding communities, and the general draw of the Central Coast, contributes to vibrancy and generates overnight hotel stays and restaurant and retail spending that are critical to the City's fiscal health. Reported hotel data in 2022 indicated high occupancy rates and strong upward pressure on achievable room rates, suggesting opportunities in the market for additional hotel rooms. Moving forward, the City will work to attract a range of hotel types, allowing for a diversity in price points and the ability to capture more visitors. This can be paired with initiatives to create places people want to visit and experience—and for longer time periods. The Central Coast offers unparalleled weather, scenery, and outdoor recreation opportunities, and those visitors need places to overnight, eat, and shop.

Business Attraction, Retention, and Growth

Supporting local businesses and attracting desired new businesses are important components of the General Plan. An increase in employment-supporting uses that draw head-of-household jobs allows opportunities for more employment that directly serves residents—while also generally leading to higher annual general fund revenues through increased property taxes, sales taxes, and business license revenue.

Capital Improvements

An important component of fiscal sustainability is the City's ability to appropriately plan for and deliver needed capital improvements. As of 2022, the City was not collecting sufficient revenues through impact fees (which were subsidized and based on 2006 assumed infrastructure costs) to cover the cost of needed capital improvements. This requires that the City further subsidize the improvements with money from the general fund. To be fiscally sustainable, the City will need to recalibrate impact fees to address contemporary infrastructure costs and market conditions, while also keeping an eye on sustainable long-term infrastructure maintenance.

Economic Prosperity and Diversity

A healthy, diverse, and growing business mix provides a range of job opportunities for residents and allows Atascadero to weather economic cycles. The revenues generated by businesses—such as hotel taxes (transient occupancy taxes), sales and use taxes, and business license fees—contribute to providing quality services and infrastructure for residents, workers, and visitors. Higher paying jobs and greater diversity in business options compound direct revenues by keeping people local and reinvesting in the community. Expanded public services and infrastructure upgrades will further reinforce Atascadero's reputation as a highly desirable location for new businesses, creating a virtuous cycle that benefits the entire community.

Atascadero's economic development policies must be responsive to larger economic trends in the region and throughout California. This includes being flexible and nimble enough to address the changing nature nationally of how people work and shop. Increasing demand for open format office space, high-quality research and development space, and flexible/blended retail space will position Atascadero for remaining an attractive and easy place to locate and grow businesses. Opportunities to expand the business mix in Atascadero provided through new land use Placetypes and flexible land use policies (see **Chapter 3**) will accommodate a range of business sizes and types. As Atascadero does not have the ability to expand the City outward to capture areas for greenfield development, the focus will be on maximizing potential along existing commercial corridors and creating spaces that can be flexible and respond to emerging business needs over time.

The following goal and policies focus on maintaining a diversified economic base by accommodating a variety of business types, supporting major revenue-generating activities that support municipal services, and leveraging Atascadero's competitive advantages.

Goal ED-1: A sound economic base to sustain the City's unique character through a range of employment and business opportunities and generation of sufficient revenue to support adequate levels of public services, as well as environmental and social quality

Policy ED-1.1: Business Attraction. Facilitate establishment of a full range of goods and services desired by Atascadero residents, workers, and visitors.

Action A: Update and maintain the Zoning Ordinance to promote retail, service, and grocery stores at designated neighborhood nodes.

Action B: Consider the use of a form based code to guide development in the Innovation/Flex district to respond to changing business trends over time.

Action C: Ensure that development in commercial and innovation/flex zones is geared to tax-generating uses and/or provides flexible use spaces for evolving trends that allow local businesses to capitalize on emerging economic growth sectors.

Action D: Encourage and incentivize office and medical uses to locate or expand along Morro Road.

Action E: Maintain key commercial sites and nodes that prioritize commercial activities and provide spaces for larger-scale commercial uses, technical education facilities, and light-industrial uses.

Policy ED-1.2: Tourism. Expand tourist-oriented uses in key areas to serve the traveling public, and capitalize on opportunities for tourist destinations that reflect Atascadero's unique character.

Action A: Actively recruit tourism and traveler-serving businesses that can take advantage of accessible and unique areas of the City.

Action B: Encourage hotel, conference, and resort development. Protect potential sites from adjacent incompatible uses.

Action C: Promote the community's rural character, open spaces, zoo, outdoor recreation amenities, and oak woodlands as part of the strategy to attract tourists. Develop tourist destinations based on these features.

Policy ED-1.3: Regional Commercial Centers. Accommodate commercial centers with regional draws that have visibility from Highway 101.

Action A: Ensure zoning regulations continue to allow regional retail uses (including auto related and home furnishing).

Policy ED-1.4: Regulatory Updates. Ensure that City regulations, processes, and initiatives support the City's economic development goals and new private industry opportunities.

Action A: Regularly review and update the Zoning Ordinance to address any regulatory impediments to attracting target businesses and to facilitate desired business expansion and adaptive reuse.

Action B: Prioritize infrastructure upgrades that can provide the service levels needed and desired by industries the City looks to attract.

Business Retention

The City's ability to attract and retain businesses, entrepreneurs, and worker talent is heavily influenced by its land use and economic development policies, infrastructure, and relative affordability within the Central Coast region.

The policies in this section address the need to focus attention on retention and expansion of existing businesses in Atascadero. Existing businesses provide a job base and constitute the most effective starting point from which to grow the local economy. The following goal and policies support Atascadero's desire to retain existing businesses, attract new higher-wage

businesses and industries, and position itself for greater economic growth and resilience through careful planning, incentives, and investments.

Goal ED-2: Retention and expansion of existing businesses and attraction of new businesses and industries to increase economic growth, improve the availability of goods and services, and increase opportunities for higher-wage jobs in Atascadero

Policy ED-2.1: Existing Business Support. Encourage established businesses to continue providing products and services the community desires.

Action A: Continue to support Chamber of Commerce efforts to market goods and services available in Atascadero, particularly those produced locally.

Action B: Identify locations with adequate land to accommodate established businesses looking to expand.

Policy ED-2.2: Local Job Growth. Attract new development and enterprises that provide jobs and services for current residents and that build the local jobs base of higher-wage positions.

Action A: Update the Municipal Code to provide flexibility for home occupation uses.

Action B: Update the Zoning Ordinance to ensure land use regulations accommodate a broad range of desired industries and that entitlement processes are more efficient.

Partnerships

The City has a long history of being proactive and supportive of a range of businesses and economic development activities. With a focus on attracting new business and industry types to Atascadero, the City will need to develop new partnerships with the private sector. These can include activities from marketing and branding coordination, industry attraction, industry clusters, and more formal public-private partnerships. The following goal and policies highlight Atascadero's ongoing focus to work with private sector on mutually growing and diversifying the local economy.

Goal ED-3: Leveraging the impact of the City's resources and investments in economic development through effective public-private partnerships

Policy ED-3.1: Local Business and Organization Partnerships. Continue to coordinate economic development efforts with local businesses and organizations such as workforce development organizations and businesses and the Chamber of Commerce.

Action A: Hold regular meetings with the Chamber of Commerce to discuss economic development goals, activities, and ways to help promote or streamline new businesses and industries.

Action B: Formulate and/or refine economic development strategies with local service and utility providers (e.g., broadband internet providers, PG&E, etc.).

Action C: Partner with local employers, co-working spaces, and vocational institutions to expand workforce training, entrepreneurship, and innovation opportunities.

Policy ED-3.2: Regional Partnerships. Continue economic development activities coordination with regional partners.

Action A: Promote the location of new industry sectors to Atascadero, including aerospace, agricultural technology, and biotech.

Action B: Support incubator spaces and small business resources and highlight proximity to top-tier universities to promote Atascadero as a supportive location for high-tech and entrepreneurial ecosystems.

Policy ED-3.3: Workforce Development Partnerships. Support and coordinate with educational and training institutions, including local school districts, universities, and the County Workforce Development Board to advance workforce training and talent retention.

Action A: Engage with Cal Poly San Luis Obispo, Cuesta College, and the County office of Education, and encourage them to expand curriculum to offer education in areas that would prepare students to work in industries prevalent within Atascadero, such as hospitality and tourism services, aerospace, agricultural technology, and precision manufacturing.

Fiscal Health

The long-term and sustainable fiscal health of Atascadero is an overarching objective and a guiding principle of the 2045 General Plan. Many of the goals, policies, and actions throughout this General Plan focus on attracting, allowing, and supporting new businesses and industries, as well as the expansion of established businesses. This includes establishing new Placetypes that allow for a range of businesses, new incentives (e.g., permitting and regulatory incentives, job creation incentives such as tax credits, workforce training, etc.), and programs that will help to create unique and active places coupled with public service enhancements and infrastructure upgrades that will support these uses. The following goal, policies, and actions build upon these land use and planning strategies by providing clarity regarding specific economic development activities the City will undertake to further support its fiscal health.

Goal ED-4: Long-term fiscal strength that reinforces Atascadero's desire to grow and attract businesses

Policy ED-4.1: Ongoing Fiscal Health. Continue to take a long-range view of the City's fiscal condition, including the possibility of enhancing revenues to maintain and, wherever possible and desirable, enhance current levels of service.

Action A: Prepare and periodically update an Economic Development Strategic Plan that frames a comprehensive strategy for current and future City fiscal health so that projected levels of service can be maintained and enhanced or expanded, as needed.

Action B: Annually adjust long-range revenue and expenditure projections to track changes in the City's fiscal situation so that areas of concern and opportunities can be anticipated and planned for.

Action C: Require new development to pay its share of the costs of providing capital facilities needed to support it.

Action D: Review development impact fees on a regular basis to ensure they stay in line with current City expenditures for providing facilities and services.

Action E: Work to minimize the City's road maintenance responsibilities by establishing private funding mechanisms for the maintenance of new local streets.

Action F: Regularly review land use regulations to support opportunities for employment centers, entertainment zones, and tax-generating uses.

Policy ED-4.2: Retail/Restaurant Businesses. Maximize development of, and revenues from, the retail and restaurant business sectors. Improve the local retail restaurant business environment by undertaking planning, incentivizing, or other means to help align locations of stores and restaurants with locations of residents and workers.

Action A: Encourage the co-location of retail, dining, and drinking establishments within retail, flex, experience, and entertainment nodes, particularly in Downtown, to create engaging and active neighborhood centers.

Action B: Establish policies to ensure new tenant spaces in areas identified as key nodes contain basic facilities and mechanical space to support restaurant occupancy requirements.

Policy ED-4.3: Hotel Attraction. Maximize opportunities for tourism growth by maintaining and expanding locations for transient lodging.

Action A: Continue to evaluate the hotel market in Atascadero, and identify specific types of lodging that do not currently exist but can be attracted to the City to create a range of hotel options and price points.

Action B. Research and evaluate incentive options that support older or boutique hotels and motels to make upgrades to their facilities to attract more visitors.

Policy ED-4.4: Targeted Economic Incentives. Assess the value of alternative incentive concepts and programs for specific business types.

Action A. Evaluate what competing cities within the region are doing to incentivize and support local business, along with a thoughtful assessment of actual overall competitive strength of the community.

Action B. Explore development incentives such as fee deferrals or subsidies, infrastructure prioritization, and streetscape enhancements that the City can use to proactively market target businesses and industries to Atascadero.



Chapter 6: Mobility Element

Introduction

Atascadero has over 145 miles of roadways, more than any other city in San Luis Obispo County. This complex web of streets supports the transportation of people and goods to, through, and within the City, and includes State highways, streets owned and maintained by the City, and public streets that are privately maintained. Edward Gardner Lewis' original Colony plan established the gridded street network still evident today in downtown, and it envisioned a roadway west to the coast, realized in 1934 as State Route 41. Much of the early street network in Atascadero was implemented in 1913, with later extensions serving higher density neighborhoods as they emerged. In the 1950s, the construction of U.S. Highway 101 through Atascadero bisected the City, majorly limiting east-west travel to the bridges and underpasses over and under the freeway.

Combined, this complex street system supports a variety of transportation modes, including freight trucks, vehicles, transit, bicycles, pedestrians, and equestrians. This element focuses on goals, policies, and actions to create, improve, and maintain a network of safe, accessible, and multi-modal streets. Although the City recognizes that the automobile will continue to be the primary means of transportation during the timeframe of this plan, this element also emphasizes

policies and actions that reduce vehicle use by promoting alternative travel modes. This includes reflecting the importance of neighborhood quality as well as vehicle, bicyclist, and pedestrian safety.

As noted, the current circulation network was laid out in the 1913 Atascadero Colony plan. The network consists of radial routes emanating from the Atascadero Administrative Building, supported by a series of arterial rings to convey traffic to outlying areas. Farther from the civic core, the streets follow the topography, resulting in winding, narrow tree-lined streets that have become a defining part of the City's character. As noted above, the radial street pattern was interrupted in 1954 with Highway 101 construction bisecting the civic core and limiting east-west travel to eight crossings. The Colony plan centralized all civic, social, educational, administrative, and commercial activities at the Civic Center. Commercial development has since spread along El Camino Real, and residential neighborhoods extended east of El Camino Real and west of Highway 101. This has increased demand for travel beyond the original Colony era vision.

Few streets within Atascadero are designed to carry high traffic volumes. Freeway interchanges create bottlenecks because they are undersized, and many roadways do not accommodate cyclists and pedestrians. Street patterns, widths, and adjacent topography constrain transit operations and access. The extent of the roadway network and lack of funding means that maintenance is an ongoing challenge. A key goal of the Mobility Element is to improve these connections and capitalize on opportunities for safe and efficient multi-modal use.

The El Camino Real and Morro Road corridors will be the primary growth areas. The Downtown section has been reinvented for multi-modal travel and economic synergy, including a reduction in vehicle travel lanes to make room for parking, transit, bicycle, pedestrian, and streetscape improvements. Parking surveys have shown that the peak parking demand in the City core is less than half the available parking supply. However, many parking spaces are privately controlled, inefficiently allocated, or located away from key destinations.

The SLO Regional Transit Authority provides fixed-route bus transit along the El Camino Real corridor, but service is infrequent and stops are largely concentrated in limited areas, restricting access for residents in western neighborhoods. Additionally, while the local climate and mixed-use development patterns support cycling, the City's bicycle commute mode share is lower than the statewide average due to an incomplete cycling network. The Bicycle Transportation Plan outlines 18 proposed infrastructure projects to enhance connectivity to key destinations.

Community data indicate that walking is a more common mode of commute in Atascadero when compared to the State average, but factors such as steep topography, missing sidewalks, and narrow Highway 101 interchanges are areas of concern for many pedestrians.

Freight movement primarily relies on Union Pacific Railroad's Coast Line, which runs through the City but lacks rail stops, limiting rail-based goods delivery. Highway 101 serves as the main thoroughfare for commercial goods. While Atascadero does not have an airport, it is served by the San Luis Obispo County Regional Airport about 20 miles to the south.

In the 2020s, State laws established a new paradigm for assessing and addressing traffic impacts, shifting the focus from vehicle delay metrics, which prioritized cars, to vehicle miles traveled (VMT), which promotes sustainable development practices. The SLOCOG Regional Transportation Plan encourages growth in mixed-use corridors, with funding allocated for various infrastructure projects to improve overall transportation efficiency. Strategic planning and investments, bearing in mind the latest State laws and funding opportunities, will be essential for enhancing mobility and accessibility in Atascadero.

Mobility Priorities

To support Atascadero's mobility needs today and well into the future, this General Plan addresses the following mobility considerations.

Impacts of Highway 101

The freeway bisects Atascadero and limits east-west access. Of the eight freeway interchanges, most were constructed in the 1960s and are undersized or outdated, creating congestion and barriers for motorists, pedestrians, and bicyclists. Future interchange upgrades will be costly and will need to be prioritized in consultation with Caltrans.

Transit

Atascadero is served by a fixed-route bus transit service along the El Camino Real corridor through the SLO Regional Transit Authority (SLO RTA), and Amtrak provides bus services that link to its rail routes. Bus transit stops are largely concentrated along El Camino Real, with limited access to western residential neighborhoods, and bus service infrequent, which hinders residents' ability to fully rely on transit. SLO RTA also provides dial-a-ride services.

Bicycle Mobility

Atascadero's climate, eastside topography, and development patterns in mixed-use areas are conducive to recreational and commute bicycle trips. However, the bicycle commute mode share in the City is lower than the statewide average (1.6 percent versus 3.1 percent) due to a limited and incomplete bicycle network. With a growing interest in outdoor recreation and supporting local and regional emissions reduction goals, the City sees opportunities to expand the bicycle network and create improved connections to schools, commercial areas, and other destinations.

Pedestrian Mobility

Approximately 4.5 percent of local commute trips are made by walking, substantially higher than the statewide average of 2.7 percent. The City's steep topography and low-density land uses on the west side and east side periphery discourage destination walking, but the higher densities and mix of uses along and adjacent to the El Camino Real and Morro Road corridors generally support walking. Walking is hindered in more residential and rural neighborhoods due to topography, physical constraints, sidewalk gaps, and limited east-west crossings.

Parking

Community members have identified parking as an important issue. Parking surveys show that the overall peak parking demand in downtown Atascadero is less than half the available parking supply. However, many parking spaces are privately controlled, inefficiently allocated, or located away from key destinations. Sufficient and convenient parking will contribute to the economic success of downtown. Parking management techniques such as limited hours and shared parking could be used to maximize resources.

Traffic Collisions

Between 2015 and 2019, more than one-third of the collisions in Atascadero resulted from vehicles traveling at unsafe speeds. Between 2013 and 2023, 145 reported collisions involving cyclists or pedestrians occurred, the majority along El Camino Real and Morro Road/State Route 41. Residents have highlighted roadway and traffic safety as a major concern.

Street Maintenance

Atascadero has 145 miles of roadways, more than any other city in the County. The City utilizes several funding sources to maintain its extensive roadway network, including Local, State, and Federal funding measures (including the City's general fund), SB-1 (Road Maintenance and Rehabilitation Program), and SLOCOG's Local Transportation Funds. Voters approved a one-half percent sales tax in 2014 (Measure F-14) that the City has used to fund roadway maintenance, with a 12-year term that has generated over $20 million. Measure L-24 in 2024 extended this sales tax until it is cancelled by voters and is projected to generate $3 million annually.

Roadway Capacities and Managing Congestion through New Metrics

Few improvements have been made to the City's road network to increase capacity as growth has not warranted substantial investments other than the needed, but unrealized, State investments to improve freeway bridges. Congestion is typically localized near undersized Highway 101 interchanges and around schools during pick-up and drop-off times. Generally, congestion is short lived, and most drivers experience low levels of delay outside of peak periods.

Consistent with State law, project transportation impact analyses focus on VMT. Historically, the City considered level of service, or LOS, to identify road system impacts associated with new development projects, but this approach focuses on driver delay during a short period of time and often results in undesirable outcomes for connectivity, fiscal responsibility, commercial synergy, and land development. Vehicle operations continue to be evaluated for planning roadway improvements, but multi-modal connectivity and safety are higher priorities than reducing vehicle delay.

The City requires project applicants to submit traffic information to evaluate vehicle miles traveled, vehicular LOS and queuing, project trip generation, site access and circulation, bicycle and pedestrian conditions, access to public transit, and transportation safety. These documents are critical for understanding how all transportation modes may interact with one another on and near a proposed development site and ensure that project impacts are mitigated to improve

connectivity and address safety.

Street Classification System

The Circulation Diagram (see **Figure 6-1**) classifies roadways based on their intended function and projected traffic levels, which determines the appropriate type of design and number of lanes for the route. **Table 6-1** describes the different classes of roads.

Table 6-1: Street Classification System

Type	Purpose and Function	Streets Designated
Freeway	Freeways are high-capacity and high-speed limited access facilities that serve intercity and regional travel.	U.S. 101
Arterial Streets	Arterial streets provide for circulation between major activity centers and residential areas within the City and beyond. They are also the main point of access to freeways and serve as major corridors supporting growth. Arterials should be designed to safely move all modes of travel while efficiently moving vehicles throughout the City. Access points to arterials should be minimized to the extent feasible to reduce conflict points and maintain steady flows. Arterials near schools should be enhanced to provide Safe Routes to School for pedestrians and bicyclists. Arterial Street rights-of-way typically range from 80 to 100 feet.	El Camino Real Morro Road (SR 41) Atascadero Avenue Halcon Road Portola Road Santa Barbara Road Santa Rosa Road Traffic Way *Portions of:* Curbaril Avenue Del Rio Road San Anselmo Road Santa Cruz Road Santa Lucia Avenue
Collector Streets	Collectors channel traffic from residential or commercial areas to arterials. Residences, offices, commercial uses, and public activities typically front on to them. They are usually two-lane streets, with maximum acceptable volumes often dictated by residents' concerns about intrusion rather than traffic capacity considerations. Collector Streets rights-of-way typically range from 40 to 60 feet. Collectors are divided into two categories, depending on the area and type of topography: **Urban collectors** serve commercial and higher density areas. Urban roads generally provide on-street parking, as well as sidewalks and bike lanes.	See **Figure 6-1** (Circulation Plan)

Table 6-1: Street Classification System		
Type	**Purpose and Function**	**Streets Designated**
	Rural collectors serve areas that typically have larger parcels. They are generally narrower in width due to lower volumes and limited need to accommodate on-street parking. Rural roadway cross-sections vary depending on topography but may have walkable shoulders, bike lanes, and/or multi-use pathways to provide multi-modal connections to other destinations.	
Local Streets	Local streets provide access to adjoining land uses. All streets not otherwise depicted on the circulation plan are local streets. Local streets typically provide narrower travel lanes and may or may not have dedicated bike lanes. They typically serve rural residential and single-family residential land uses. Local Streets rights-of-way typically range from 36 to 40 feet.	See **Figure 6-1** (Circulation Plan)

Mobility Goals, Policies, and Actions

To address mobility challenges and opportunities, the City will continue to find innovative, creative, and cost-effective solutions for expanding Atascadero's circulation infrastructure and the community's access to multi-modal transportation related to:

- Circulation Network
- Parking
- Freeway Access and Interchanges
- Pedestrian, Bicycle, and Equestrian Facilities
- Transit and Travel Demand Management
- Emerging Mobility Technology

Circulation Network

An efficient, accessible, and safe multimodal transportation network moves people and goods through the community. Atascadero's streets serve many functions, including:

- Allowing people to move about town
- Connecting adjacent communities to businesses, stores, homes, schools, parks, and public spaces
- Supporting adjacent land uses and developments
- Providing safe, attractive areas that encourage personal interactions
- Promoting human and environmental health by making it easier and safer to travel by transit, by bicycle, or on foot

Public rights-of-way (roadways, sidewalks, trails, and paths) cover a significant part of any community, and the layout and use of these areas influence many aspects of the physical environment. Street designs affect the safety and independence of people in the community, especially vulnerable populations such as children, persons with disabilities, and the elderly. A well-planned and well-designed mobility network is a means to realize the community's goals for improved health, economic vitality and growth, quality of life, and fiscal soundness. The Circulation Diagram (see **Figure 6-1**) illustrates the existing circulation network for Atascadero and proposed improvements. The following goals, policies, and actions provide a framework for ensuring that future changes and improvements to the circulation system are implemented in a way that improves safety, reduces conflicts, enhances mobility, maintains community character, and supports a range of transportation modes.

Goal MO-1: A safe, multimodal, interconnected, and efficient circulation system that serves all community members

Policy MO-1.1: Roadway Improvements. Plan, fund, and implement circulation improvements consistent with the Mobility Element and Circulation Diagram.

Action A: Maintain an updated Capital Improvement Plan and pursue construction of circulation system improvements on a prioritized basis.

Action B: Require that right-of-way dedications and road improvements required of new development be consistent with the approved concept plans, plan line setbacks, and other adopted circulation studies.

Action C: Enhance all modes of access and travel within the City. Require frontage improvements consistent with planned facilities when adjacent to new development.

Action D: Preserve options for future transportation facilities in advance of development by such means as identifying routes, reserving rights-of-way, establishing setbacks to accommodate future road widths, and limiting direct parcel access along arterials.

Action E: Design future roadway extensions and connections to enable reasonably direct paths to destinations.

Action F: Update development impact fees to ensure fair share payment toward roadway improvements from new development. Include periodic review and updates to fees based on current construction costs.

Action G: Implement Complete Streets projects, including improved travel lanes, enhanced pedestrian and bicycle facilities, and upgraded bus stops on El Camino Real.

Action H: Work with Caltrans to implement Complete Streets projects, including curb, gutter, and sidewalk improvements, on Highway 41.

Action I: Focus multi-modal improvements, as feasible, on designated connector and

backbone rights-of-way through rural west and east side neighborhoods to increase connectivity between rural residential areas and the Downtown core. Connection streets include Portola Road, Atascadero Avenue, Traffic Way, and Santa Lucia Road.

Action J: Look for opportunities to increase parking and enhance walkability along commercial and multi-family corridors including road diets, bulb-outs, controlled crossings, transit enhancements, and other complete streets features.

Action K: Seek funding (e.g., grants, development requirements) for roadway construction projects that complete unbuilt rights-of-way (e.g., missing roadway gaps), especially those that will reduce emergency response times and/or provide key evacuation routes.

Policy MO-1.2: Multimodal Options. Increase pedestrian and bicycle connections and safety between residential areas and commercial areas along major corridors, parks and recreation opportunities, and neighboring communities.

Action A: Provide for roadway and intersection improvements along major corridors as outlined in this Mobility Element.

Action B: Increase safety and access across major corridors and Highway 101.

Action C: Continue working with the County, SLOCOG, Caltrans, and local agencies to create pedestrian and bicycle access between Atascadero and Templeton.

Action D: Work with county and SLOCOG to increase multi-modal connectivity between Santa Margarita and Atascadero.

Action E: Continue to partner with the County, SLOCOG, and Caltrans to improve multimodal safety and mobility adjacent to the City limits in a manner that reflects local priorities.

Action F: Utilize unbuilt rights-of-way in areas where multi-modal pathways could connect neighborhoods to schools, parks, or commercial activity areas.

Action G: Develop road standards that support pedestrian use on rural roads, especially on roads that serve as residential connectors to adjacent neighborhoods, schools, and commercial areas.

Policy MO-1.3: Regional Facilities. Provide regional roadway facilities that minimize through-traffic intrusion on local streets and mitigate impacts on local traffic.

Action A: Support regional planning efforts to identify improvements and projects that align with multi-modal and VMT reduction goals, such as the North County US 101 Multi-Modal Plan, and ensure that plans are geared toward support of grant funding efforts.

Action B: Coordinate transportation planning efforts with local, regional, State, and Federal agencies to maintain and upgrade State roadways and prioritize improvements to improve safety and multimodal connectivity.

Action C: Identify key arterial and collector streets and seek funding to provide multimodal connectivity.

Action D: Balance commercial goods movement with the health and quality of life priorities of the community by routing heavy truck traffic away from residential zones and promoting safety at rail crossings.

Action E: Update the City's Capital Facilities Fees consistent with the requirements of AB 1600 and include fair share fees toward Caltrans facilities and multimodal improvements.

Action F: As freeway overcrossings are replaced, work with Caltrans to ensure that bridges can accommodate turn lanes, sidewalks, and bike facilities.

Action G: Develop concept plans and plan lines for interchange corridors and seek funding opportunities to construct improvements.

Policy MO-1.4: Congestion Management and Trip Reduction. Encourage mixed-use and jobs focused infill development that is served by multi-modal facilities to support reductions in regional and local vehicle miles traveled (VMT).

Action A: Streamline transportation analysis requirements for infill projects that are consistent with the Land Use and Community Form Element (see **Chapter 3**).

Action B: Consider secondary effects of roadway widening to accommodate multimodal accessibility and safety.

Action C: Minimize driveways and access points along arterial streets whenever possible to reduce the number of conflict points and increase pedestrian and cyclist safety.

Action D: Encourage mixed-use development with residential and commercial densities high enough to support ridesharing and transit.

Action E: Support reduced on-site parking requirements where different uses can share parking or where easy access to frequent transit and bicycle and pedestrian facilities is available.

Policy MO-1.5: Hillside Area Street Character. Preserve the winding, tree-lined nature of the City street system in hillside areas.

Action A: Continue to allow flexible street design standards to allow roads to curve around hillsides to preserve rural character, limit landform alteration, and control vehicle speed.

Policy MO-1.6: Truck Routes. Ensure the new and existing business that use large trucks as a core part of their operations, more than just routine delivery, minimize maintenance impacts on City infrastructure and noise impacts on residents.

Action A: Direct truck routes away from noise- and emissions-sensitive residents.

Action B: Require truck routing plans to describe the operational characteristics of the use of the facility operator. Require plans to include methods and responsibility of enforcement for implementing measures that avoid impacts to public streets.

Parking

Atascadero residents and businesses have expressed the need for convenient parking in Downtown and along commercial corridors, as well as in higher density residential districts. Parking requirements can disincentivize development by displacing building area, but constrained parking supply can limit customer access to businesses. Excessive parking worsens multimodal access and increases impermeable surface areas. Inadequate parking for high-density residential development can impact nearby neighborhoods. The following goal, policies, and actions look to find ways to ensure adequate and well-managed, but not excessive, parking in Atascadero.

Goal MO-2: Accessible, right-sized, well-designed, and convenient public and private parking facilities

Policy MO-2.2: Parking Supply Management. Maintain an adequate and well-designed supply of off-street parking, particularly in commercial, industrial, and higher-density residential areas.

Action A: Balance parking needs within the public right-of-way with considerations of safety, street width, visibility, and property access.

Action B: Require all development to provide sufficient and convenient parking areas with minimal conflict with street traffic.

Action C: Allow new development to provide a parking management plan that utilizes shared parking with other businesses or accommodates multiple uses with different peak hour parking usage.

Action D: Encourage shared parking via reciprocal easement(s) in commercial and industrial areas. Encourage the consolidation of on-site parking, where appropriate, to eliminate the number of ingress and egress points onto public roads.

Action E: Maintain standards for off-street parking areas to include landscaping, screening, lighting, maintenance, and shade trees to mitigate adverse visual impacts and provide comfort for users.

Action F: Periodically review City parking requirements to balance on-site parking demand with other community goals for accessibility, density, and housing affordability and to respond to parking trends and land uses.

Action G: Allow parking supply flexibility to account for shared parking, reduce impermeable surface area, and support higher-density development.

Freeway Access and Interchanges

The construction of Highway 101 introduced a major barrier to east-west connectivity in Atascadero. Most of the freeway interchanges were designed in the 1950s and 1960s and remain difficult to cross for cyclists and pedestrians. Also, the bridge widths and underpasses are undersized and cause peak-hour congestion. This is exacerbated by closely spaced intersections between freeway ramps and El Camino Real.

Through Atascadero, Highway 101 has six interchanges with overcrossings and two with underpasses (at SR 41 and Traffic Way). There is also a southbound on-ramp at West Front Road and an additional ramp at San Diego Road with a northbound off-ramp and southbound on-ramp with low traffic volumes and no crossing.

The North County US 101 Multi-Modal Plan jointly prepared by the San Luis Obispo Council of Governments, the County, the cities of Atascadero and Paso Robles, and Caltrans evaluates five operational improvements along Highway 101 in Atascadero. The 2024 study identifies multiple on- and off-highway improvements as priorities to improve congestion, reduce queuing impacts, and increase multi-modal travel opportunities.

The following goal, policies, and actions focus on working with Caltrans to improve Highway 101 interchanges so that they are safer, multi-modal, and function better for all users.

Goal MO-3: Rebuilt and/or upgraded Highway 101 interchanges that enhance safety, improve functionalities for all users, and promote continued economic growth and prosperity in Atascadero

Policy MO-3.1: Caltrans Information Sharing and Coordination. Prepare and disseminate pertinent safety, operational, and community information to Caltrans related to the performance of Highway 101 interchanges to support funding of improvements.

Action A: Provide pedestrian, bicyclist, and vehicle accident information related to outdated Highway 101 interchange designs to Caltrans District 5 staff.

Action B: Understand emergency response issues related to the current design of the Highway 101 interchanges, including a mitigation plan that studies scenarios where one or more interchange(s) are damaged in a catastrophic event.

Action C: Share pertinent community comments, concerns, and ideas related to Highway 101 interchanges gathered during Atascadero community discussions with Caltrans District 5 staff.

Policy MO-3.2: State Funding Advocacy. Proactively lobby for State funding and project prioritization of Highway 101 interchange improvements in Atascadero.

Action A: Identify a range of State and Federal funding sources that can be used, in partnership with SLOCOG, Caltrans, to fund major Highway 101 interchange

improvements.

Action B: Work with Caltrans to prioritize the Del Rio, San Anselmo, Curbaril, and Santa Rosa interchange upgrades to accommodate multi-model access, increased housing density and continued commercial growth in Atascadero.

Pedestrian, Bicycle, and Equestrian Facilities

Atascadero's climate and topography generally support walking and biking, but the circulation network has many gaps in facilities for these modes. Infill development, as described in the Land Use and Community Form Element (see **Chapter 3**), will improve the proximity of destinations for many residents and will help fill in gaps in the network. **Figure 6-2** (Bicycle and Trail Facilities) identifies the existing and planned bicycle and trails network in Atascadero. The following goal, policies, and actions provide specific detail on how the City will continue to expand and improve the pedestrian, bicycle, and equestrian circulation system in Atascadero.

Goal MO-4: Safe, functional, and appealing bicycle, pedestrian, and equestrian (in rural areas) facilities that allow convenient multi-modal mobility

Policy MO-4.1: Coordination and Planning. Provide "backbone" pedestrian, bicycle, and equestrian systems that link residential, commercial, recreational, and regional areas.

Action A: Require developments to provide pedestrian, bicycle, and trail alignments and facilities consistent with adopted City plans and policies.

Action B: Adopt and maintain a Bicycle, Pedestrian, and Equestrian Transportation Plan.

Action C: Identify a multi-modal network that provides connections between major destinations like schools, commercial nodes, community and park facilities, and the Salinas River. Use creek corridors where feasible to make those connections.

Policy MO-4.2: Pedestrian Mobility. Ensure pedestrian safety, enhance pedestrian comfort, and promote walking as an alternative to vehicle travel, with priority in retail districts and multi-family neighborhoods.

Action A: Develop pedestrian-friendly design standards that apply to all higher density residential and commercial projects and require construction of adequate sidewalks and/or multi-use pathways in new development.

Action B: Consider pedestrian usage when rehabilitating existing roads.

Action C: Ensure that drainage control does not preclude multimodal opportunities.

Action D: Where limited right-of-way width exists, allow modified street sections that maintain parking and pedestrian facilities to the greatest extent possible.

Action E: Provide wider sidewalks at commercial nodes and areas of higher pedestrian use.

Action F: Enhance and maintain streetscapes, especially along commercial and higher density residential corridors to create an enjoyable, safe, and comfortable experience for pedestrians.

Action G: Implement walkable shoulders and/or trails, where feasible, in single-family areas with lot sizes of one-half acre and larger. Develop flexible design standards appropriate for the varied topography and prioritize streets identified as part of the key backbone network.

Action H: Provide enhanced pedestrian crossings of El Camino Real, Traffic Way, and other major corridors where appropriate to support pedestrian safety and non-vehicular connections within the City.

Policy MO-4.3: Bicycle Mobility. Promote bicycle mobility and increase bicyclist safety with new/upgraded facilities and amenities.

Action A: Complete Traffic Way bicycle facilities as part of an alternative north-south connection.

Action B: Support a multi-use path as part of the future Templeton to Atascadero connector. Work with the lead agency to secure easements or other mechanisms to create the necessary connections.

Action C: Complete bicycle and pedestrian improvements along El Camino Real and Highway 41.

Action D: Require adequate and safe bicycle parking in conjunction with new development within the Urban Services Line.

Action E: Create opportunities to utilize unbuilt rights-of-way for pedestrian and bike connections.

Policy MO-4.4: Rural Trails. Provide for walkways, bikeways, and horse trails without curbs and sidewalks in rural areas.

Action A: Work with the Nateional Park service and other interested agencies and organizations to complete and formalize the De Anza Trail. Prioritize access to and protection/expansion of the historic trail.

Action B: Review road abandonment requests for their potential as trails.

Action C: Coordinate local bikeway and trail projects with regional projects whenever possible.

Action D: Develop a Trail Master Plan for Atascadero Creek between Three Bridges Oak

Preserve and the Salinas River.

Action E: Provide and enhance a system of pedestrian and equestrian trailhead access points to the Salinas River corridor. Work with the State, SLO County, and Atascadero Mutual Water Company to provide trailhead access.

Action F: Support trail connections to the nearby communities of Templeton, Paso Robles, and Santa Margarita.

Policy MO-4.5: School and Park Connections. Provide a comprehensive system of routes to schools and parks.

Action A: In conjunction with the Safe Routes to School Program, adopt and maintain a pedestrian and bike system map identifying the locations of connections to key facilities. The system may consist of continuous routes that connect higher density neighborhoods, schools, parks, shopping areas, and workplaces and may also include facilities on identified rural collector streets and adjacent to creeks.

Action B: In conjunction with the Safe Routes to School Program, implement street improvements connecting and adjacent to schools.

Action C: Evaluate and update school zones to prioritize enhancements that benefit safe routes to schools.

Transit and Travel Demand Management

Atascadero is served by fixed-route and dial-a-ride transit. Fixed route stops largely are concentrated along the El Camino Real corridor, with infrequent service common to low-density areas. Higher land use densities and enhanced multimodal connectivity will improve the viability of transit, which can lead to improved service. Well-planned transit infrastructure can improve transportation equity and access for all users to jobs, housing, schools, and other major destinations. It can also play a role in reducing regional vehicle miles traveled. **Figure 6-3** (Transit Facilities) identifies the transit network and service areas in Atascadero.

Successful Travel Demand Management (TDM) can reduce or postpone the need for roadway improvements, particularly on commute routes such as Highway 101. TDM measures are designed to reduce peak-period traffic by increasing use of transit, bicycling, and walking (particularly for work and school trips), and by promoting flexible working hours, ridesharing, and land use and circulation management programs.

Goal MO-5: Reliable alternative travel modes that reduce traffic congestion and improve air quality

Policy MO-5.1: Single-Occupancy Vehicle Alternatives. Promote alternatives to single-occupancy vehicle travel, particularly for commute trips.

Action A: Seek funding for programs that promote transit, ridesharing, bicycling and walking.

Action B: Support efforts to provide rideshare service to Downtown and major shopping and employment centers.

Policy MO-5.2: Public Transit. Support the evolution of public transit to meet the changing needs for local and regional access, including fixed route and demand responsive service.

Action A: Work with the San Luis Obispo Regional Transit Authority (SLORTA) to encourage use of local and regional public transit.

Action B: Provide fixed-routed transit with bus shelters along El Camino Real.

Action C: Support and encourage the use and expansion of Park & Ride facilities and other rideshare infrastructure.

Policy MO-5.3: County TDM Requirements. Seek alternatives that bring Atascadero closer to compliance with Transportation Demand Management program requirements of the San Luis Obispo County Clean Air Plan to reduce peak period trip generation.

Action A: Support programs that encourage employers to promote alternatives to driving alone to work, such as carpooling, walking, biking, transit, and considering slight adjustments to work schedules to incentivize alternatives.

Emerging Mobility Technology

As mobile technology and artificial intelligence become increasingly common, they are radically transforming mobility options and transportation systems. As the future of transportation continues to evolve, the City will remain flexible in accommodating better and more efficient ways to address transportation. Self-driving cars and trucks, smart street and parking technologies, adaptive signal controls, parking availability information, and other forms of new technology can improve many aspects of all modal experiences.

Bike or Scooter Sharing Systems

A bike or scooter-sharing system is a service in which these vehicles are made available for short-term rentals, often using a dockless system and activated by mobile devices. Popularly used vehicles include electric-powered devices such as scooters and bicycles. These vehicles can travel on local roadways, particularly within bike lanes, but are not recommended on sidewalks. While Atascadero may not be positioned for such systems immediately, evolving technologies and user interest can shift as the population and housing density increases. The City will stay abreast of

new personal mobility trends and be prepared to respond to what works well for Atascadero.

On-Demand Rideshare

Ride-sharing services are services that use online-enabled platforms to connect passengers with local drivers using their personal vehicles. In most cases, these are a comfortable method for door-to-door transport. As this service continues to expand for rides and delivery services, the City may consider expanding designated curb-side pick-up/drop-off areas within Downtown, commercial centers, schools, and other popular activity areas.

Autonomous Vehicles

Self-driving vehicles are cars or trucks in which human drivers are never required to take control to safely operate the vehicle. Also known as autonomous or "driverless" vehicles, they combine sensors and software to control, navigate, and drive the vehicle. This is technology the City will need to monitor and consider how to properly regulate use before it is established or widely adopted locally. For instance, one approach may be restricting autonomous vehicle use to arterial and collector roads that have clear striping, signage, and other identification systems.

The deployment of advanced technology can help people more easily move around Atascadero. However, given that the local roads range from high-capacity arterials to rural local streets, the City will ensure that deployment of these technologies occurs safely, efficiently, and flexibly. The following goal and policies identify ways the City will support expanding new mobility technology while ensuring safe and efficient operations.

Goal MO-6: Anticipating and addressing emerging mobility technology proactively to allow new systems and industries to operate in Atascadero on the City's terms

Policy MO-6.1: Changing Mobile Technology. Encourage the use of mobile or other electronic devices with similar on-demand hailing functions, particularly for seniors, persons with disabilities, and other mobility challenged people.

> **Action A:** Manage curb space to efficiently balance parking needs, passenger pick-up and drop-off, commercial goods deliveries, and multimodal access.

Policy MO-6.2: Autonomous Vehicles. Update, when warranted, transportation systems and policies as autonomous and automated vehicles and their attendant facilities are developed locally and regionally.

> **Action A:** Develop an Autonomous Vehicles Master Plan that includes operational requirements, pilot programs, and/or incentives that will allow the technology to be incrementally deployed in the City while ensuring proper safety measures are in place to ensure they operate on specific, safe streets.

Policy MO-6.3: Performance Analysis Measures. Utilize technology to create performance measures to interpret data metrics of vehicles, bicycling, walking, and transit usage within streets, sidewalks, and public facilities.

Action A: Work with local universities and transportation agencies to capture mobility user data as part of student research projects.

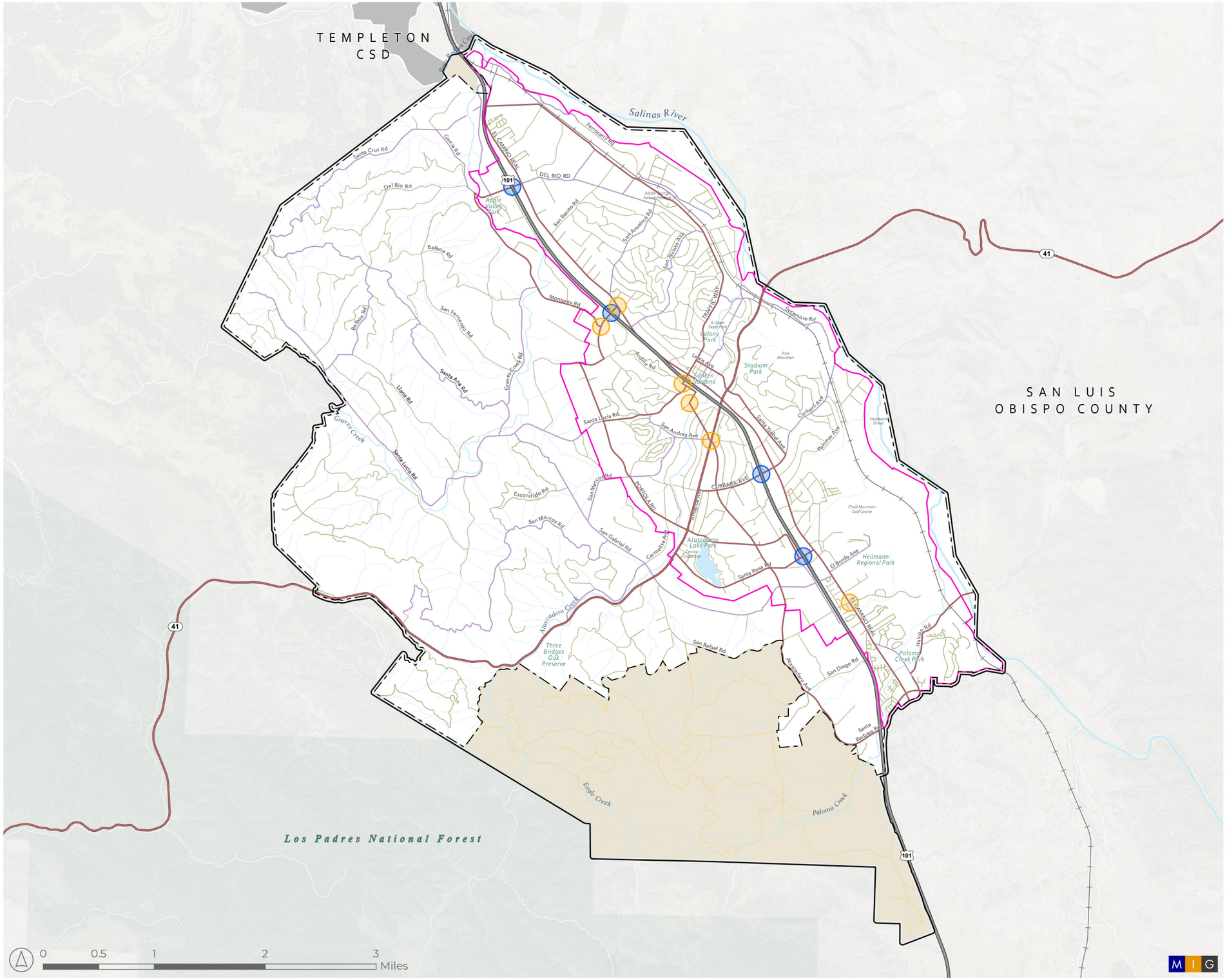


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Figure 6-1
Circulation Diagram

Basemap Features

- Atascadero Planning Area
- Atascadero City Limit
- Urban Services Line
- Sphere of Influence
- Creeks, Drainages, Rivers, and Waterbodies
- Parks + Open Space

Road Classification

- Freeway
- Arterial
- Collector
- Local
- Local | Privately Maintained
- Unincorporated

Mobility Improvements

- Interchange Improvement
- Intersection Improvement

(These improvements are based on EIR Conclusions and not to be considered in the next 20 years)

Source(s): Esri, USDA, CADOT, CNRA, County of San Luis Obispo Open Data, City of Atascadero, 2024.

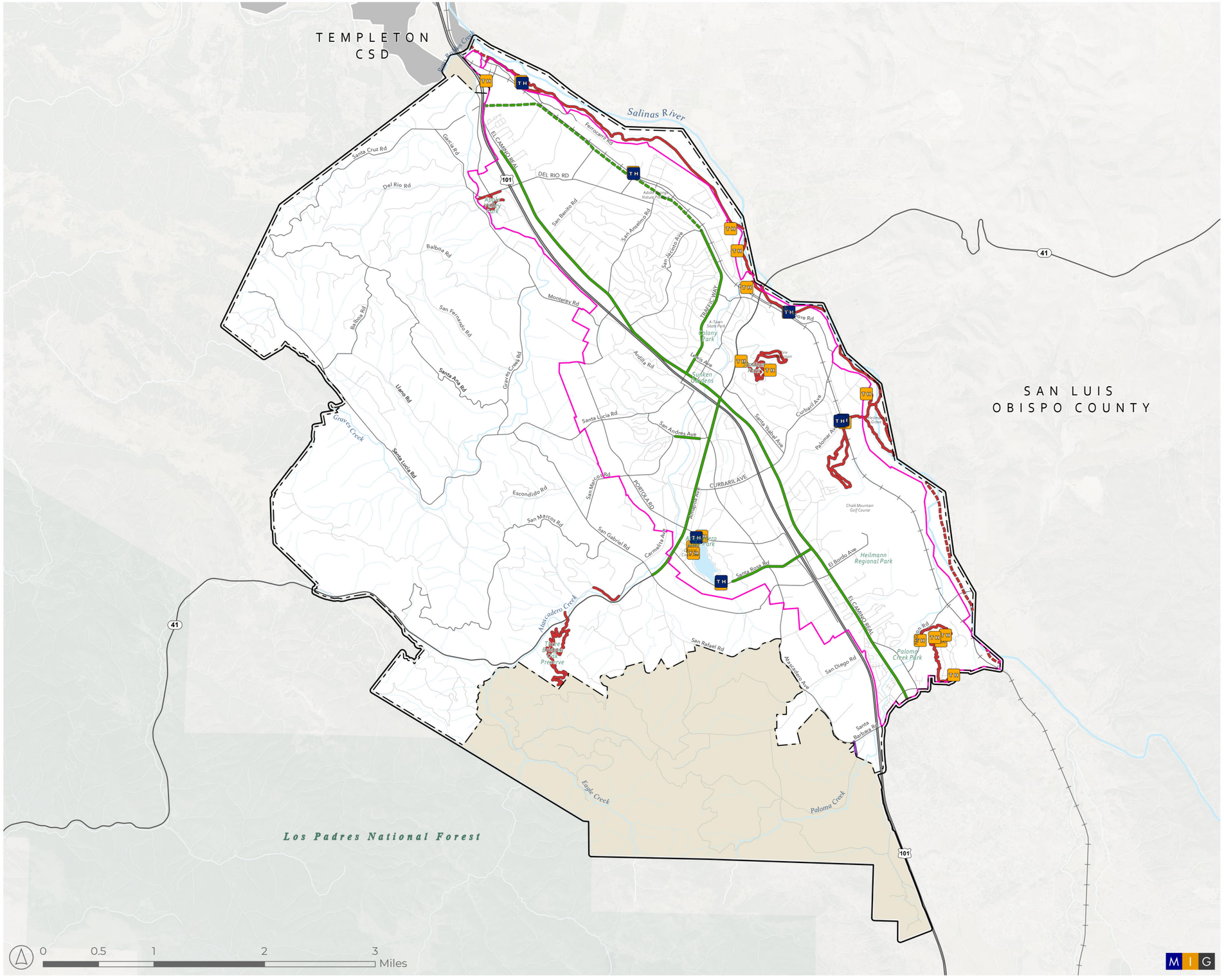

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Figure 6-2

Bicycle and Trail Facilities

Basemap Features

- Atascadero Planning Area
- Atascadero City Limit
- Urban Services Line
- Sphere of influence
- Creeks, Drainages, Rivers, and Waterbodies
- Parks + Open Space

Bicycle and Trail Routes

- Multi-Use (Existing)
- Multi-Use (Planned)
- Class 1 (Existing)
- Class 2 (Existing)
- Class 2 (Planned)

Trailhead Access

- Trailhead
- Trailhead Parking

Source(s): Esri, USDA, CADOT, CNRA, County of San Luis Obispo Open Data, City of Atascadero, 2024.

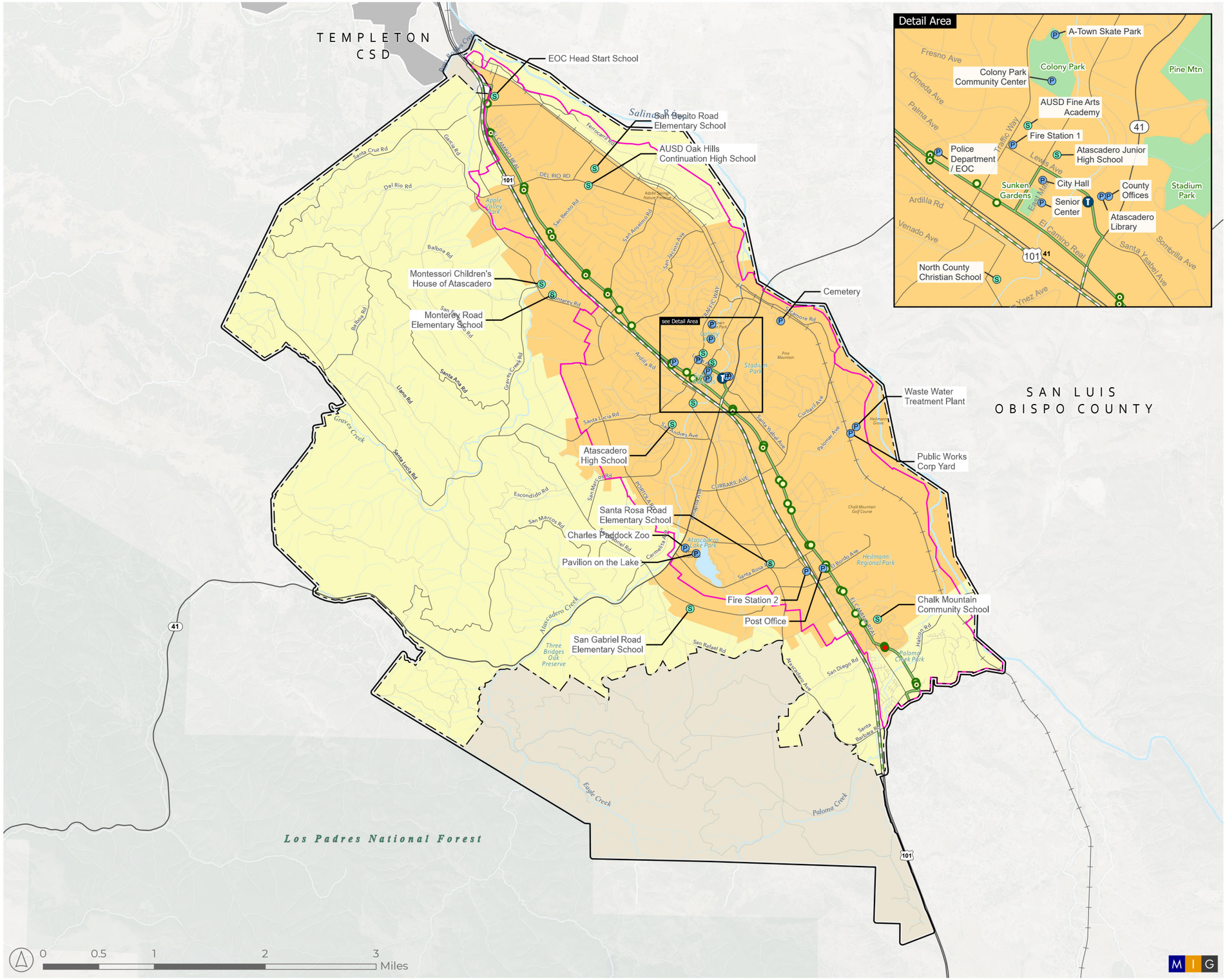

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Figure 6-3

Transit Facilities

Basemap Features

- Atascadero Planning Area
- Atascadero City Limit
- Urban Services Line
- Sphere of Influence
- Creeks, Drainages, Rivers, and Waterbodies
- Parks + Open Space

SLO RTA Bus Stop

- Transfer Hub
- Bus Stop | Single Direction
- Bus Stop | Multi-Direction
- Timed Stop

SLO RTA Route 9

- Daily Route
- Limited Service / Express Trips

Dial-A-Ride Service

- Fare Zone 1
- Fare Zone 2

Public Services

- Public Facility
- School

Source(s): Esri, USDA, CADOT, CNRA, County of San Luis Obispo Open Data, City of Atascadero, 2024.

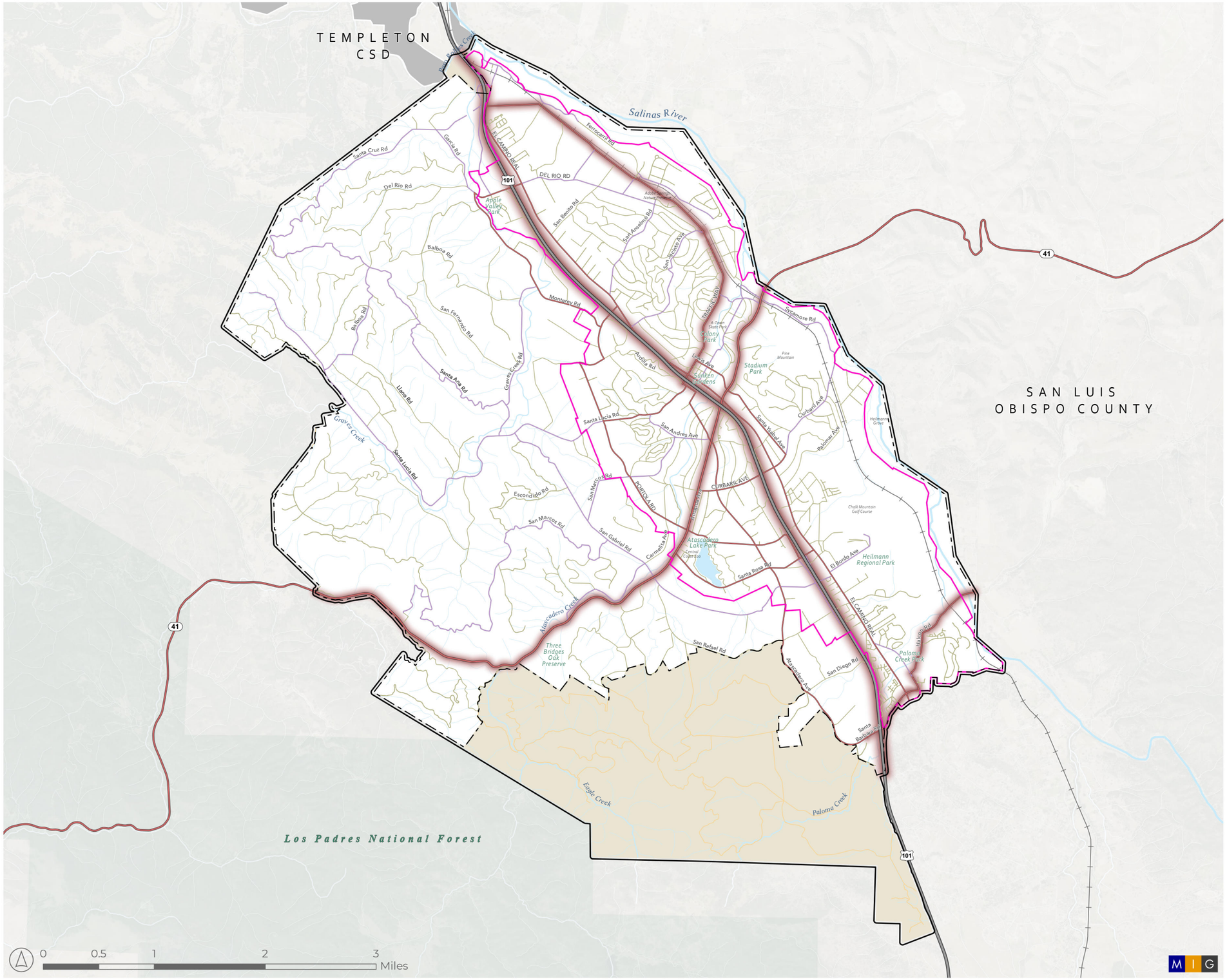

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Figure 6-4

Truck Routes

Basemap Features

- Atascadero Planning Area
- Atascadero City Limit
- Urban Services Line
- Sphere of Influence
- Creeks, Drainages, Rivers, and Waterbodies
- Parks + Open Space

Road Classification

- Freeway
- Arterial
- Collector
- Local
- Local | Privately Maintained
- Unincorporated
- Truck Routes

Source(s): Esri, USDA, CADOT, CNRA, County of San Luis Obispo Open Data, City of Atascadero, 2024.



Chapter 7: Recreation, Open Space, and Natural Resources Element

Introduction

The rural nature of Atascadero—with open spaces and oak studded hillsides—are fundamental components of the City's character and quality of life. Atascadero is surrounded by natural beauty and resources, from the coastal mountains to the west and north, and the Salinas River Valley to the east and south. Varied habitats and environments occur throughout the Planning Area, including oak woodlands, chaparral, riparian creek corridors, and rangeland.

To help connect the community to nature and opportunities for recreation, the City provides an array of public parks and recreational opportunities: miles of trails, equestrian amenities, lakefront picnic areas, and specialized facilities for sports and leisure activities. Atascadero is also home to the Central Coast Zoo, the only zoo in the region accredited by the Association of Zoos and Aquariums. In addition, San Luis Obispo County manages regional parks located in the City, and several private developments include park and recreational amenities for their residents. This element provides an overview of natural resources and recreation and open space amenities,

with specific goals, policies, and actions related to the consideration and management of these resources in response to future community needs.

Recreation, Open Space, and Natural Resources Priorities

To support recreation, open space, and natural resources goals, this General Plan considers these resources as an integral component of the City's quality of life strategy, one that invites placemaking, tourism, and a focus on economic development.

Parks and Open Spaces

As of 2024, the City owns and operates seven public parks (totaling approximately 226 acres) and several recreational facilities (Colony Park Community Center, Pavilion on the Lake) that provide space for residents to enjoy passive and active forms of recreation, including opportunities to hike, bike, and ride horses (see **Figure 7-1**). The City also owns and operates the five-acre Central Coast Zoo, allowing visitors to view hundreds of animal species from around the world. While the overall acreage of parks and open spaces is relatively high, not all Atascadero residents have the same level of access to park and recreational opportunities, as a majority of the City is rural in nature with large distances between larger lots and the urban core.

Opportunities to improve existing and create new linkages to parks and recreational amenities would improve the quality of life for residents and visitors. These may include new or expanded trails via the Jim Green Trail, Pine Mountain Loop, Stadium Park Trail, Three Bridges Oak Preserve Trail, and the Juan Bautista de Anza National Historic Trail. Also, as new residential development occurs near the City's boundaries or along El Camino Real neighborhoods, new small-scale, neighborhood-oriented parks or plaza spaces may be warranted, along with new multi-modal connections that connect the community to regional open space areas.

Trails

Atascadero contains approximately 17 miles of public trails (2024) either owned and managed by the City, San Luis Obispo County, or the Atascadero Land Preservation Society. This trail system is a community amenity and benefit. The opportunities to enhance pedestrian and bike connections to existing and new trails would better link residents and visitors to recreational destinations, including the Salinas River and Atascadero Lake Park. In addition to providing residents with better access, the City envisions these improvements as a draw for visitors looking to experience Atascadero's natural environment.

Oak Woodlands

Atascadero contains a diversity of habitats and ecosystems. At least four types of oak woodlands are represented in the City, including Blue Oak Woodlands, Coastal Oak Woodlands, Valley Oak Woodlands, and Blue Oak-Foothill Pines (see **Figure 7-2**). Oak woodlands provide important

wildlife habitat and are an integral part of the City's aesthetic appeal and historic character. The California Department of Forestry has mapped approximately 10,822 acres of oak woodlands within the Planning Area. Approximately 7,600 acres of oak woodland habitat occur on parcels zoned for residential use, largely within the rural areas beyond the Urban Limit Line.

Slope and Topography

Nearly half of Atascadero consists of hilly or steep mountainous topography. Steep slopes, while providing dramatic views, can also pose development challenges. Typically, hillsides are much harder to serve with infrastructure due to the need to pump water uphill and build roads on challenging slopes. Hillside areas also make emergency service support and evacuations from natural disasters—wildfires, landslides, earthquakes, and floods—more difficult (see **Chapter 9**).

Creeks, Rivers, and Other Habitat

Atascadero contains approximately 27 miles of creeks and rivers, including Atascadero Creek, Boulder Creek, Graves Creek, Paloma Creek, and the Salinas River. In addition, there are over 54 miles of mapped, unidentified "blue-line" drainages that range from simple land depressions to jurisdictional waterways.

The waterways provide important wildlife corridors connecting the Salinas River to the Santa Lucia Mountains and are designated critical habitat areas for South-Central California Coast Steelhead Trout. Additionally, approximately 3,000 acres of critical habitat for California red-legged frogs include the upper watershed areas of Morro and Atascadero Creeks (see **Figure 7-3**). Historically, creeks in Atascadero have sustained degraded habitat quality due to encroachment from development, sedimentation and erosion, off-road vehicle use, and urban pollution. Protecting and enhancing the effected watersheds will support the local ecosystem, help improve water flow to reduce localized flooding risks, and enhance the recreational quality of the City's waterways (see **Figure 7-4**).

The local creeks and rivers also provide recreational opportunities for many residents. The Salinas River has been recognized by residents as an asset to be protected and bolstered as a regional attraction for tourism, recreation, and education. Potential amenities and activities include trails, fishing, interpretative signage, and wildlife observation areas.

Recreation, Open Space, and Natural Resources Goals, Policies, and Actions

The following sections include goals, supporting policies, and implementation actions, related to the following topics:

- Parks and Recreation
- Trails
- Open Space Conservation
- Biological Resources
- Cultural and Historic Resources
- Air Quality and Greenhouse Gas Reduction

Parks and Recreation

Parks and other public spaces that support recreational pursuits enhance community health and quality of life. Not only do these spaces promote physical and mental health, but they also serve as spaces for social, civic, and cultural engagement. With seven parks totaling more than 200 acres and several facilities providing opportunities for a range of activities like hiking, biking, and horse riding, Atascadero offers recreational opportunities for all community members.

In addition, the County of San Luis Obispo owns, maintains, and operates over 200 acres of parks and open space land within the City limits, including Chalk Mountain Golf Course and Heilmann Regional Park.

Goal REC-1: Diverse parks, recreational activities, and leisure experiences for people of all ages

Policy REC-1.1: Park and Recreation Facilities Planning and Operations. Provide adequate park and recreation facilities to accommodate current community needs and planned future growth.

Action A: Update the comprehensive Parks and Recreation Master Plan to provide for long-term needs.

Action B: Prepare and maintain individual master plans for major City park facilities that include a programming component and management requirements.

Action C: Provide diverse recreation opportunities citywide for residents and visitors, including multi-purpose sports complexes, sports courts, play areas for children, equestrian trails, bikeways, jogging paths, hiking trails, and community centers.

Action D: Acquire and improve a neighborhood park site in northern Atascadero.

Action E: If future development is approved for the Eagle Ranch property, require the development of publicly accessible parks, recreational facilities, equestrian facilities, and trails, including a link towards the Los Padres National Forest land to the west.

Action F: Encourage the acquisition of parkland and open space beyond the Quimby Act ratio of five acres per 1,000 residents.

Policy REC-1.2: Interagency Coordination. Work with State, regional, and local agencies to plan for, acquire, and expand park and recreation facilities and amenities in Atascadero.

Action A: Pursue expansion of sports fields in the area to the east of Paloma Park, and/or execute a long-term agreement with the State to acquire or lease the site. Analyze potential expansion into a regional sports facility.

Action B: Work with the Atascadero Unified School District to formulate a program for joint use of facilities to attain a system of school-park complexes, and execute necessary agreements to allocate maintenance and operation costs for joint use.

Action C: Work with the County and other agencies to acquire and develop parks and facilities.

Policy REC-1.3: Park and Recreation Financing. Develop a method of financing park and recreational facilities and services using a variety of revenue sources.

Action A: Acquire parkland through developer dedications, development impact fees, or other financing mechanisms.

Action B: Work with community partners on maintenance of facilities, parklands, and trails.

Action C: Use development impact and/or in-lieu fees to fund park and recreation facilities of all sizes.

Action D: Finance park operations in part through user fees.

Policy REC-1.4: Specialized Recreation. Provide specialized recreation opportunities based on projected needs and standards identified in Park Master Plan(s).

Action A: Plan for funding on-going operations and maintenance to finance development of facilities that support specialized recreation.

Action B: Promote the Zoo, Atascadero Lake Park, and other City parks as unique and valuable attractions.

Action C: Support equestrian staging areas and trail systems, including the De Anza trail along the Salinas River.

Trails

Atascadero has more than 17 miles of public trails owned and managed by the City, San Luis Obispo County, and the Atascadero Land Preservation Society. Some follow natural features, like the Atascadero Lake Park pathway, and some trails have been developed to create new recreational opportunities. A recurring theme of the 2045 General Plan is enhancing existing amenities and developing new amenities where feasible. This strategy can improve connectivity overall to create a system accessible to community members and visitors.

Goal REC-2: A network of public trails that provide opportunities to engage with nature, move through the City, and connect to key destinations

Policy REC-2.1: Trail Connections and Signage. Provide access to a range of City destinations through a well-thought-out, safe, and integrated multi-modal system.

Action A: Integrate multi-modal (pedestrian, bicycle, equestrian) and public transportation facilities with the network of public trails/paths, parks, and recreation facilities, consistent with the Mobility Element (see **Chapter 6**).

Action B: Develop a comprehensive signage program for pedestrian walkways, bikeways, equestrian trails, and recreation trails.

Policy REC-2.2: Public Access to Creeks. Preserve creek reservation parcels for open space and support opportunities for public access where appropriate.

Action A: Develop parks, trails, and recreational amenities where appropriate on or adjacent to public creek reservation parcels.

Action B: Require the dedication of trail easements and access points to and along creeks and the Salinas River as part of subdivision maps or development permits consistent with the Mobility Element (see **Chapter 6**) and Subdivision Map Act, as appropriate to the conditions.

Open Space Conservation

Open space can be defined as any area unencumbered by private development potential. Open space areas can be set aside for preserving habitat, guarding against natural hazards such as flooding or wildfire risk, and providing benefits such as groundwater recharge. Some open space areas can serve multiple benefits. Atascadero's dramatic mountain vistas, expansive undisturbed landscape, and tree-lined streets create a link between the more developed parts of the City and the natural environment, and embody the elements of Atascadero's rural character. Designating and maintaining open spaces achieves several community goals: preserving the character of rural residential neighborhoods, protecting natural resources, creating recreation opportunities, and

facilitating public access to nature. The following goals, policies, and actions work to preserve and enhance Atascadero's natural and scenic resources.

Goal REC-3: Dedicated system of open space that upholds the community's rural character, local biodiversity, natural landscape, and enjoyment of recreation

Policy REC-3.1: Open Space System. Prioritize enhancement and acquisition of parks and open space to meet evolving community needs.

Action A: Seek the acquisition of open space areas that can be managed by community partners.

Action B: Require that hazard lands be managed to minimize risk to life and property, including delineating areas as preserved open space.

Action C: Require that areas with special environmental resources be considered and integrated into development planning.

Policy REC-3.2: New Development. Require that new development and subdivisions blend in with surrounding topography by minimizing disturbance to the existing natural environment.

Action A: Maintain zoning districts to reduce density as natural topography/slope increases.

Action B: Require development built on hillsides to conform with the City's adopted hillside grading ordinance.

Action C: Maintain requirements that prohibit new lots with slope averaging 30 percent or greater except where such lots can contain building envelopes with less than 20 percent average slope.

Action D: Require dedication of open space easements, parklands, and open space as mitigation for subdivisions and development projects that impact significant slopes, floodplains, watercourses and wetlands, wooded areas, sensitive areas, historic sites, cultural sites, and similar areas.

Action E: Require new single-family subdivisions of 20 units or greater to provide on-site shared greenspace/park amenities.

Policy REC-3.3: Grading. Prevent unnecessary intensive grading of development sites.

Action A: Periodically review, and update as necessary, the hillside grading ordinance to minimize hillside grading, cuts, fills, and ridgeline disturbance.

Action B: Require a schematic grading plan in compliance with the Municipal Code prior to any site disturbance, lot line adjustment, parcel map, or tract map proposed on sites

with slopes greater than 15 percent.

Action C: Maintain thresholds that limit and restrict development based on average slopes consistent with the Municipal Code.

Biological Resources

Biological resources provide critical ecosystems that support plant species and provide animal habitat. Natural habitats can provide air and water purification, flood control, pollination for crops, and temperature regulation The following goals, policies, and actions ensure that Atascadero's sensitive biological and watershed resources are considered into the future.

Goal REC-4: Consideration of biological and watershed resources within the urban areas to provide multiple benefits, with resource areas including oak woodlands, riparian corridors, native trees and plants, and creeks and rivers

Policy REC-4.1: Natural Resources Protection. Protect natural and sensitive resource areas to the maximum extent practicable.

Action A: Enforce all provisions of the Atascadero Native Tree Ordinance.

Action B: Maintain a GIS-based inventory of sensitive habitats and resources, including native trees, watercourse- and wetland-adjacent areas, archaeological resources, and historic sites.

Action C: Work with non-profits and community organizations to preserve biologically sensitive areas to increase community resiliency and public access to recreational areas.

Action D: Require identification of scenic and sensitive lands (creeks, riparian corridors, wetlands, critical habitats, etc.) on development applications. Develop and work with applicants to implement avoidance and mitigation measures to minimize impacts.

Action E: Carefully evaluate public and private projects to require the consideration of trees, watersheds, natural slopes, and other natural features.

Policy REC-4.2: Tree Protection and Replenishment. Protect and replenish street and native trees.

Action A: Implement and enforce the Native Tree Ordinance to protect and replenish native tree species.

Action C: Implement a comprehensive street tree planting and maintenance program, specifically within the Downtown core and along major corridors.

Action D: Require planting of shade trees in new projects, in part to provide shade for adjacent buildings to conserve energy use.

Action E: Update the Zoning Ordinance to require native trees and plant species be incorporated into landscaping plans, as appropriate.

Action F: Require lot line adjustments and tentative subdivision maps on sites with 25 percent or greater native tree canopy cover to establish locations of building sites, driveways, and leach fields that will minimize impacts to oak woodlands.

Policy REC-4.3: Watershed Protection. Ensure that development along Atascadero Creek, Graves Creeks, the Salinas River, blue line creeks, and natural springs, lakes, and other riparian areas does not interrupt natural flows or adversely impact riparian ecosystems and water quality.

Action A: Require new development be designed in accordance with all applicable best management practices to prevent obstruction or diversion of flood and drainage flow to minimize adverse impacts to riparian vegetation and habitat along or within a watercourse.

Action B: Maintain waterways in a natural state; prohibit concrete channelization of creeks.

Action C: Limit development and uses that allow animal keeping, storage of vehicles or materials, and active recreation uses that result in disturbance of sensitive resource areas.

Action D: Allow flood protection measures (such as selective brush cleaning), low-impact trail development, streambed maintenance, and bank protection along waterways where appropriate with necessary permits.

Action E: Preserve creek reservations and the Salinas River for open space and recreational use. Minimize the impact of recreational uses on the habitat value and open space qualities of the creeks.

Action F: Protect areas subject to flooding from development, consistent with the City's flood hazard ordinance requirements.

Action G: In conjunction with the Atascadero Mutual Water Company, maintain regulations that identify existing and potential well sites and aquifer recharge areas, including sufficient buffers to protect them from contamination.

Action H: Support the establishment and protection of floodable terraces, wetlands, and revegetation along creeks and streams.

Policy REC-4.4: Stormwater Control Program. Maintain a stormwater control program consistent with the requirements of the National Pollution Discharge Elimination System (NPDES) Permit Program (Phase II).

Action A: Continue to implement the Urban Storm Water Quality Management and Discharge Control ordinance.

Action B: Minimize impervious surfaces and decrease off-site storm flows for new and modified development.

Action C: Consider incorporating regionally focused improvements into the stormwater master plan, including shared detention facilities and natural retention and detention systems.

Action D: Continue to notify project applicants of requirements to inspect sediment and erosion control mitigation measures each year.

Policy REC-4.5: Agricultural Practices. Allow agricultural practices, including keeping livestock and farm animals, on parcels designated as Rural Residential and Agriculture, with consideration for the natural environment and residential character.

Action A: Regulate allowed agricultural practices and the keeping of domestic animals on rural and agricultural lands consistent with the farm animal regulations of the Zoning Ordinance.

Policy REC-4.6: Soil Health. Encourage soil conservation by minimizing grading and preventing erosion.

Action A: Require soil retention and erosion control as conditions of approval for development projects consistent with Regional Water Quality Control Board standards.

Action B: Periodically review the Municipal Code for consistency with National Pollution Discharge Elimination System requirements.

Policy REC-4.7: Water Conservation. Support ongoing water conservation efforts.

Action A: Coordinate water conservation programs with the Atascadero Mutual Water Company.

Action B: Consider implementation of reclaimed water use, as feasible.

Action C: Encourage incorporation of water conservation measures in new development.

Action D: Continue to implement the State of California's Model Water Efficient Landscape Ordinance (MWELO) for new and rehabilitated landscape projects.

Policy REC-4.8: Atascadero Lake Water Quality Improvements. Develop and implement a program to improve water quality in Atascadero Lake.

Action A: Perform periodic water quality assessments of Atascadero Lake.

Action B: Identify potential pollution sources and incorporate feasible mitigation strategies into the Parks and Recreation Master Plan.

Action C: Work with local community groups and organizations to monitor lake water quality and propose strategies for enhancements.

Action D: Seek additional water supply sources, including recycled water sources, to maintain Atascadero Lake water levels and quality.

Cultural and Historic Resources

While Atascadero was created as a fully master-planned community in the early 1900s, human activity in the area dates back millennia. Many Indigenous communities lived and/or traveled through the area, and preserving their history in parallel with Atascadero's developed history is important. In addition, Atascadero has a rich and eclectic mix of historical homes and structures having significance based on their style, unique events or people associated with them, or other qualifying factors.

Goal REC-6: Protection and celebration of Atascadero's rich prehistory and history

Policy REC-6.1: Cultural Resource Protection. Protect prehistoric cultural resources from disturbance associated with development.

Action A: Maintain a current GIS-based map of generalized areas of known archaeological resources.

Action B: Continue to implement the City's archaeologic development standards.

Action C: Require short- and long-term mitigation measures for significant archaeological resource sites, include avoidance of impacts, burial under sterile fill, and/or monitoring of earthmoving activities.

Action D: Involve local Tribal governments with any work located within known archaeological sites where resources are present or likely.

Policy REC-6.2: Historic Structures and Resources. Encourage conservation and preservation of places and buildings of historical and architectural significance.

Action A: Periodically review, and update as necessary, the historic resources standards in the zoning ordinance to maintain historic community assets and provide recognition and consideration of historic resources, districts, and character defining features.

Action B: Create and maintain a list of historic resources in Atascadero, known as the Historic Resources List, to maintain resources significant to Atascadero's heritage, such as Colony homes with character-defining features.

Action C: Utilize the State Historic Building Code to encourage rehabilitation, preservation,

restoration, or relocation of historic buildings.

Action D: Utilize the Secretary of the Interior's Standards and Guidelines for Rehabilitating Historic Properties to assess proposed improvements to historic properties.

Action E: Develop incentives for retaining and rehabilitating Atascadero's historical resources, including exceptions to development regulations, conservation districts, staff technical assistance, programs to facilitate relocation instead of demolition, and Mills' Act contracts.

Air Quality and Greenhouse Gas Reduction

While greenhouse gas reduction remains a regional and global issue, each jurisdiction in California is obligated to define and implement strategies to reduce localized greenhouse gas emissions, with the aim to achieve the statewide reductions established by the Global Warming Solutions Act of 2006 and related legislation. Atascadero first addressed greenhouse gas emission in its 2014 Climate Action Plan (CAP). The CAP set a framework for reducing greenhouse gas emissions, and the City has made considerable progress over the years in climate actions and sustainability. This General Plan has policies and actions that will move Atascadero forward in reducing greenhouse gas emissions and meet updated reduction targets.

Goal REC-7: Improve air quality and reduced health risks

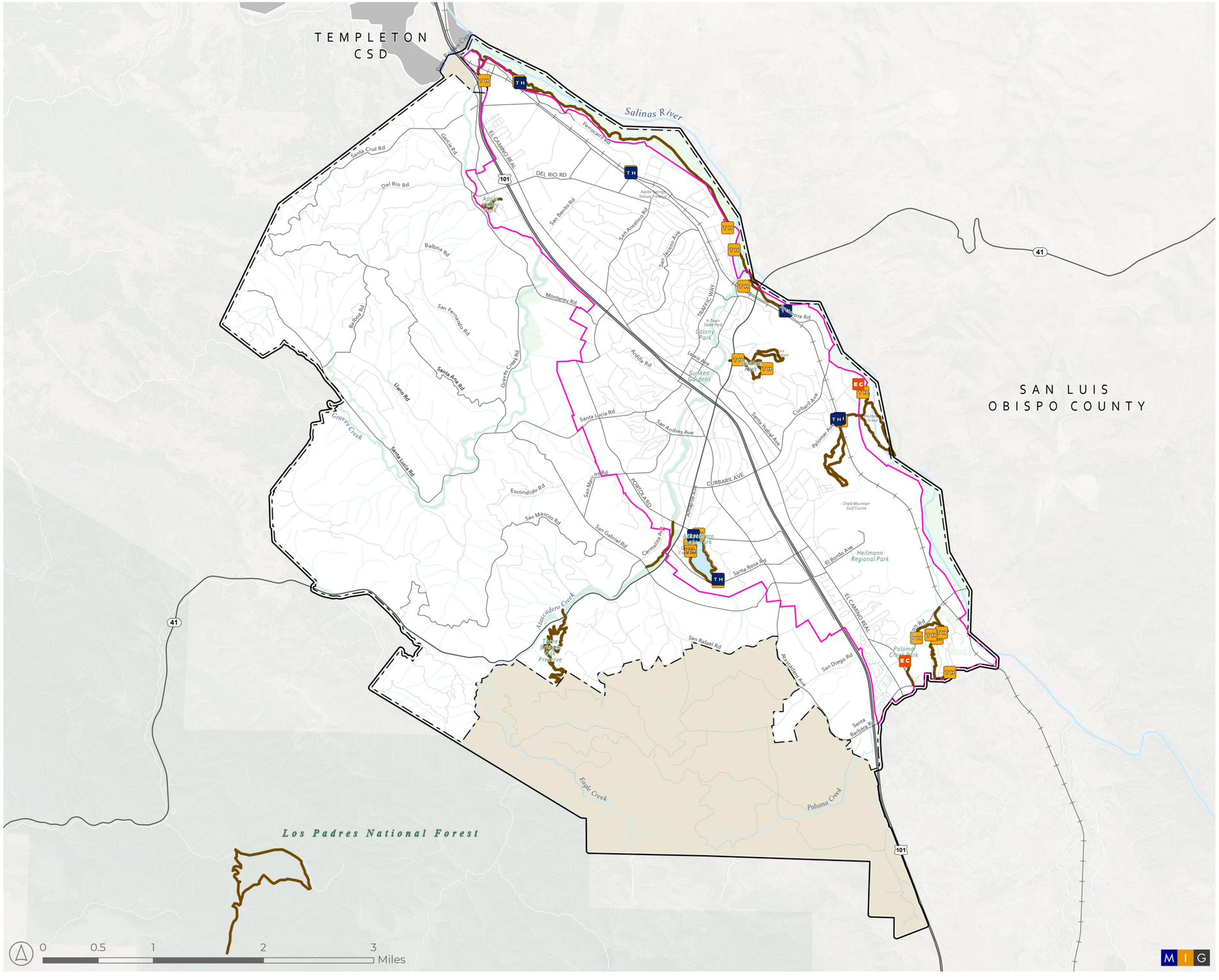
Policy REC-7.1: Clean Air. Support regional efforts to maintain clean air.

Action A: Require dust control and emissions limitations during project construction.

Action B: Adopt circulation policies that encourage vehicle trip reductions consistent with the Mobility Element (see **Chapter 6**), and support regional programs to maintain clean air.

Action C: Concentrate new intensive development at identified nodes and commercial corridors to help reduce vehicle trips.

Action D: Continue to support the development of Park-and-Ride facilities in appropriate locations.



AUTHENTIC Atascadero OUR CITY, OUR PLAN

Figure 7-1
Park and Trails System

Basemap Features

- Atascadero Planning Area
- Atascadero City Limit
- Urban Services Line
- Sphere of influence
- Creeks, Drainages, Rivers, and Waterbodies

Park and Trails System

- Parks
- Open Space
- Trails
- TH Trailhead
- TH Trailhead Parking
- Equestrian Center

Source(s): Esri, USDA, CADOT, CNRA, County of San Luis Obispo Open Data, City of Atascadero, 2024.

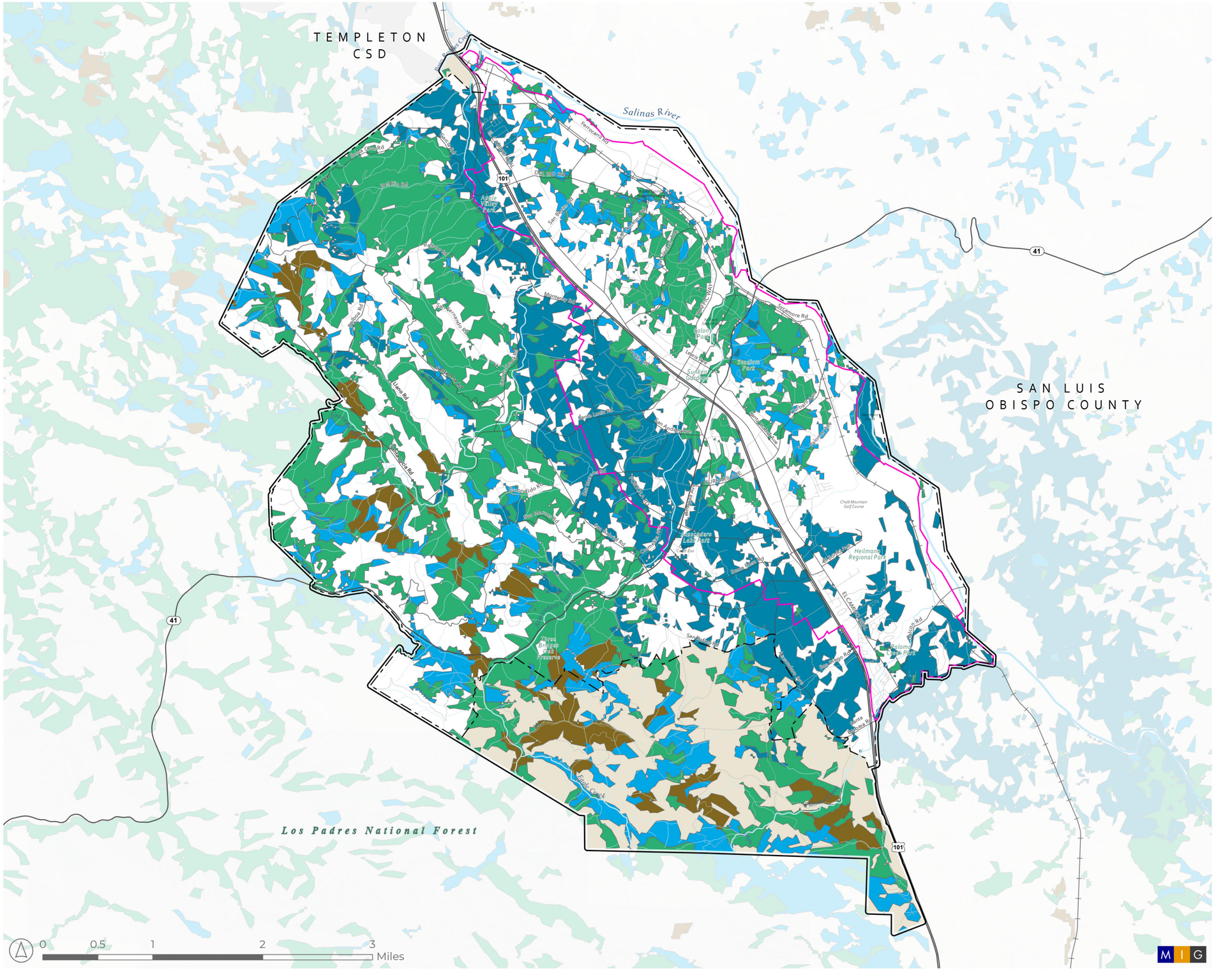


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Figure 7-2

California Vegetation - Oak Woodlands

Basemap Features

- Atascadero Planning Area
- Atascadero City Limit
- Urban Services Line
- Sphere of Influence
- Creeks, Drainages, Rivers, and Waterbodies
- Parks + Open Space

CA Vegetation (CalFire FRAP)

- Blue Oak Woodland
- Blue Oak-Foothill Pine
- Coastal Oak Woodland
- Valley Oak Woodland

Source(s): Esri, USDA, CADOT, CNRA, County of San Luis Obispo Open Data, City of Atascadero, 2024.

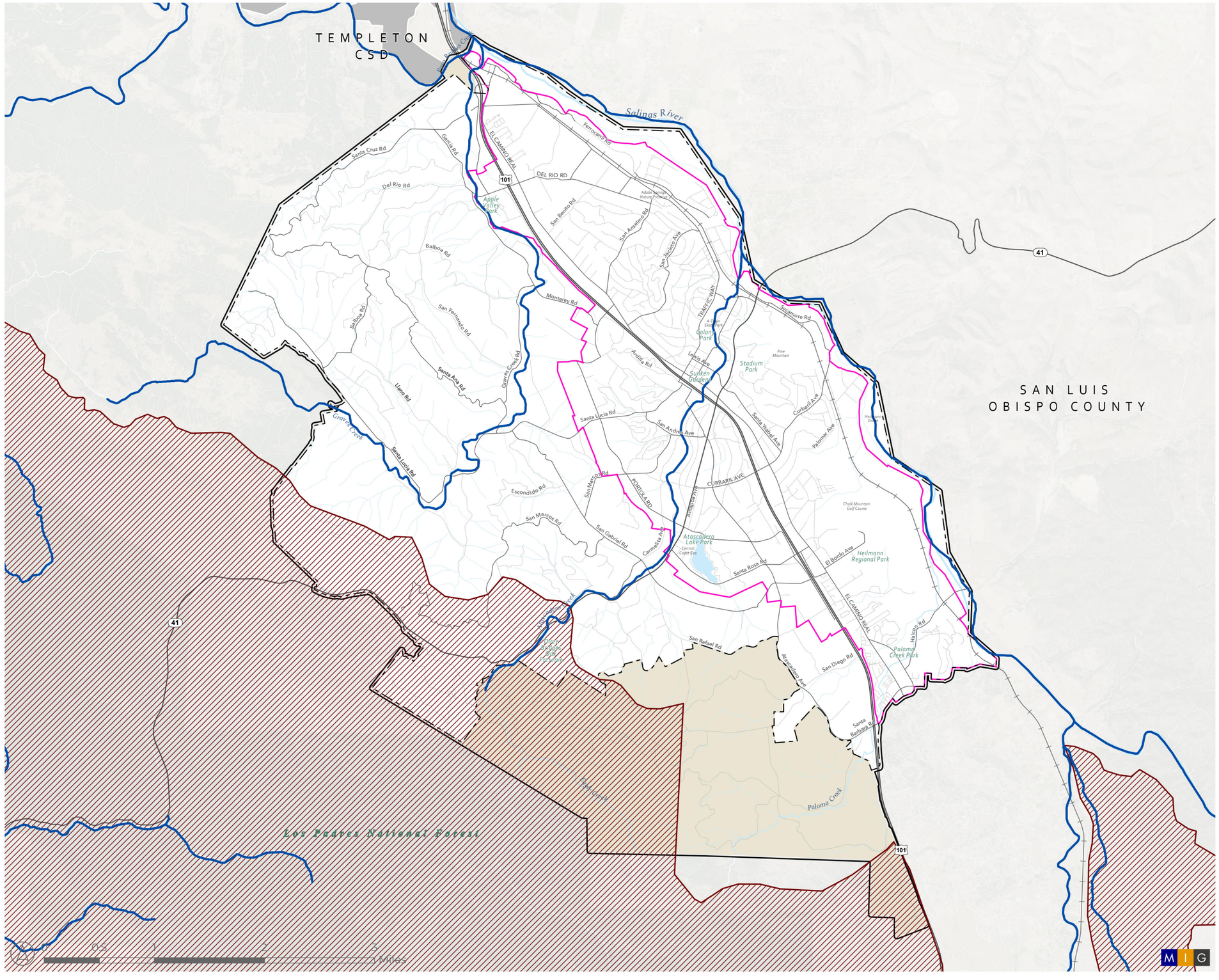

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Figure 7-3

Critical Habitat

Basemap Features

- Atascadero Planning Area
- Atascadero City Limit
- Urban Services Line
- Sphere of Influence
- Creeks, Drainages, Rivers, and Waterbodies
- Parks + Open Space

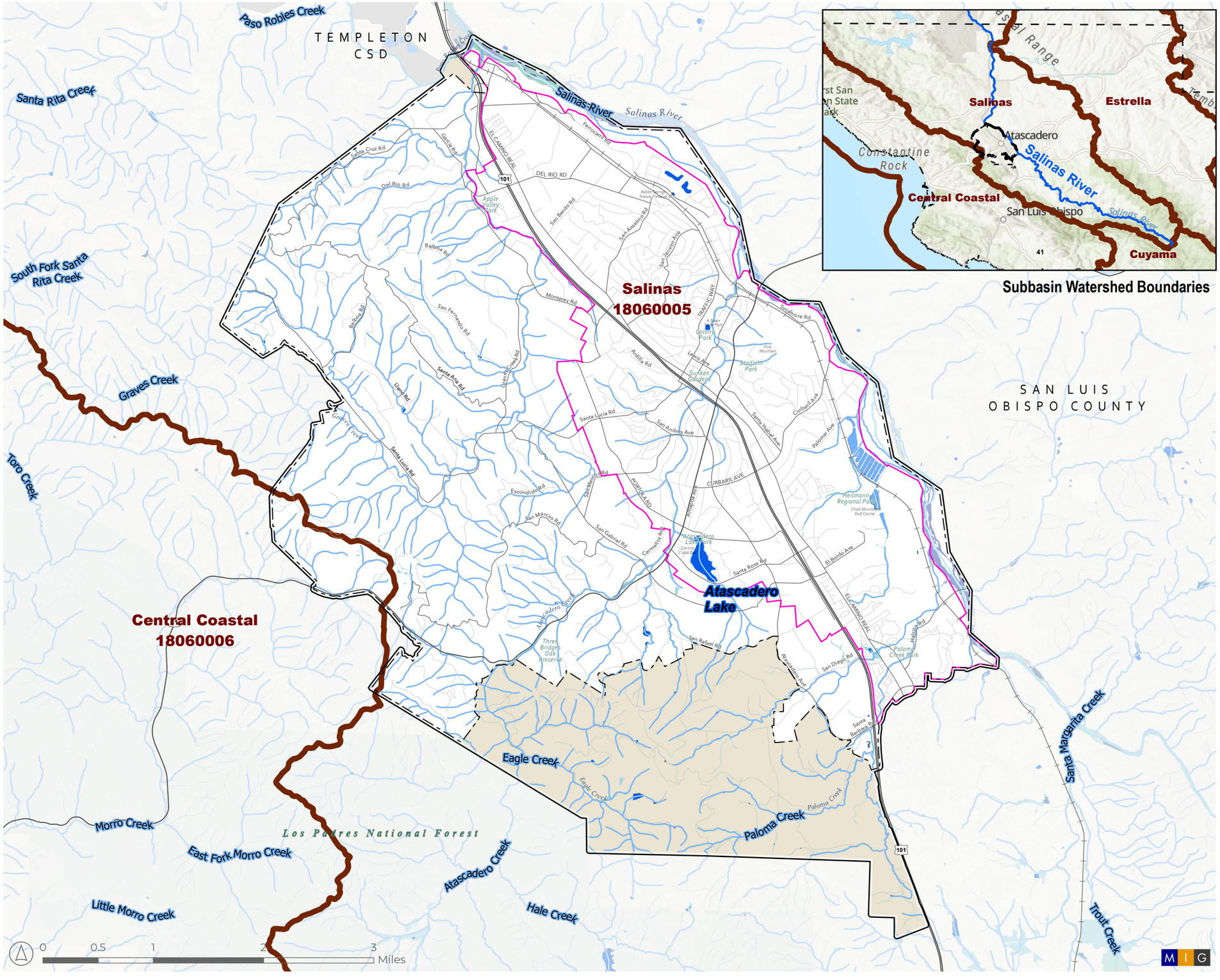
Critical Habitat

- Steelhead
- California Red-Legged Frog

Source(s): Esri, USDA, CADOT, CNRA, County of San Luis Obispo Open Data, City of Atascadero, 2024.

Atascadero
OUR CITY, OUR PLAN

Figure 7-5
Water Resources



Basemap Features

- Atascadero Planning Area
- Atascadero City Limit
- Urban Services Line
- Sphere of Influence
- Creeks, Drainages, Rivers, and Waterbodies
- Parks + Open Space

National Hydrology Dataset (NHD)

- Connector
- Stream/River
- Artificial Path
- Lake/Pond
- Reservoir

National Wetland Inventory (NWI)

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Riverine

Watershed

- Subbasin Boundaries (HUC-8)

Source(s): Esri, USDA, CADOT, CNRA, County of San Luis Obispo Open Data, City of Atascadero, 2024.



Chapter 8: Public Services and Infrastructure Element

Introduction

City residents, institutions, and the business community depend upon reliable, flexible, and cost-effective public services and infrastructure to ensure that homes and businesses have efficient utility services and that desired growth can be accommodated. Citywide, the commitment remains to ensure all residents benefit from high-quality public services and infrastructure suited to community character and growth objectives. The City's Public Works Department oversees many of the local infrastructure and service delivery systems: street maintenance and rehabilitation, stormwater management and flood control, sewage collection and treatment, and maintenance of City-owned parks, trails, and municipal buildings (see **Chapter 7**). The Atascadero Mutual Water Company, a publicly owned enterprise whose founding dates to the original colony in 1913, provides water service, drawing supplies from local groundwater sources and distributing that water to customers through over 250 miles of pipelines.

City-provided public services include law enforcement, fire prevention and protection, development review, building permitting, recreation activities, and community events (see **Chapter 9**). The San Luis Obispo County Public Libraries system operates the Atascadero Library in Downtown. The Atascadero Unified School District, an independent government agency, provides public education services for students in transitional kindergarten through grade 12.

For solid waste collection, disposal, and recycling, the City contracts with a private franchised waste company. Natural gas is supplied by the Southern California Gas Company, and Pacific Gas and Electric Company (PG&E) provides electric power transmission and service. Alternative electric service providers are also expanding into the area. Residents and businesses have access to several telecommunications service providers, with available companies and services continually shifting in response to advances in technology.

Public Services and Infrastructure Priorities

To help accommodate future projected growth, prioritize future investments, and deliver high-quality community amenities, this General Plan addresses the following public services and infrastructure issues.

Water Supply

The Atascadero Mutual Water Company 2020 Urban Water Management Plan (UWMP) projected future groundwater budget period (2020–2042) identifies an average annual increase in groundwater storage of 800-acre feet per year[1]. Looking forward, areas for above-ground or below-ground storage (such as tanks), or groundwater recharge areas, may be identified to expand water storage. This will address concerns related to future multi-year drought events that could potentially impact seasonal groundwater capacity.

Wastewater

The City owns, operates, and maintains local sanitary sewer collection facilities and the local water reclamation facility, which as of 2024, had a treatment capacity of 1.4 million gallons per day. Approximately 50 percent of properties in Atascadero rely on individual onsite septic systems and are not connected to the sanitary sewer system, with most of these located outside of the Urban Services Line (USL). Two factors affect the need for a significant upgrade to the wastewater treatment plant: (1) compliance with new water quality standards for effluent and (2) demands associated with planned growth and sewer service expansion within the USL.

Flood Control Facilities

The Salinas River and several creeks traverse the City, providing some measure of natural flood control. Installed flood control improvements, both private and public, consist of catch basins,

[1] An acre-foot of water is 325,821 gallons, or roughly the amount sufficient to meet the needs of a household of four for one year.

culverts, and pipes designed to manage runoff. In 2023, a major 100-year storm resulted in significant flooding citywide, highlighting the need to evaluate opportunities to incorporate flood control facilities where possible and maintain the capacity of natural creeks and waterways to respond to potentially significant weather patterns and events in addition to the need to respond to aging infrastructure conditions.

Infrastructure Undergrounding

Most electric power utility lines extend across the Atascadero via overhead lines. The threat of extreme wind and heat present wildfire risks associated with sparking from these overhead lines. Undergrounding utilities for new development can reduce fire risk, offer more reliable electrical and communications service during and after storms, and reduced visual clutter.

High-Speed Communications Services

Reliable, convenient, and affordable access to high-speed internet and cell phone coverage throughout the community promotes commerce and connectivity. The eastern side of Atascadero generally has good access to broadband technology, but the steep terrain and low-intensity development on Atascadero's western side pose challenges for providers to offer reliable service. Provision of reliable, high-speed communications services allows residents to stay connected to the world and businesses to operate at their optimum.

Public Services and Infrastructure Goals, Policies, and Actions

The following sections include goal sections, with supporting policies and implementation actions, related to the following topics:

- Efficient and Fiscally Sustainable Operations
- Water Supply and Delivery
- Wastewater Collection and Treatment
- Stormwater Drainage and Flood Protection
- Solid Waste and Recycling
- Energy
- Telecommunications

Efficient and Fiscally Sustainable Operations

The City places a high priority on ensuring quality municipal facilities and services, from fire and police services to street maintenance, flood control, and well-maintained parks and community buildings.

Goal PSI-1: Continued reliable public infrastructure and services that support orderly and desired growth

Policy PSI-1.1: Urban Services Line. Direct growth to areas where services can be provided cost effectively.

Action A: Maintain lower-density residential Placetypes on non-City maintained streets.

Policy PSI-1.2: Capital Improvements Program. Maintain an updated Capital Improvements Program (CIP) that forecasts needs at least five years into the future and implements General Plan policies and programs as feasible.

Action A: Include in the CIP a prioritized list of projects, timing, and cost estimates.

Action B: Apply for grants to assist in the expansion of sewer to priority areas.

Action C: Seek funding to address aging and undersized infrastructure to support existing and future service needs.

Policy PSI-1.3: Private Utility Service. Ensure that adequate private utility service capacity and facilities exist prior to approving new development.

Action A: Coordinate with electric power, natural gas, and telecommunications service providers to identify and ensure adequate service levels for existing and planned development.

Action B: Require that private utilities development projects conform to City site improvement standards and applicable ordinances.

Policy PSI-1.4: Capital Facilities Funding. Ensure that new development pays its fair share of providing and/or installing all capital facilities needed to support it, including the infrastructure necessary to attract high-tech and professional support businesses.

Action A: Continue to require new development to finance construction of facilities.

Policy PSI-1.5: Solid and Hazardous Waste Disposal. Continue to support effective regional planning for solid and hazardous waste disposal.

Action A: Contract with solid waste collection service providers capable of meeting City and State goals regarding waste diversion at reasonable cost to residents and businesses.

Policy PSI-1.6: Public Libraries. Coordinate with the San Luis Obispo Public Libraries to maintain the local library, with continuing access for all residents to modern, high-quality resources and programs.

Policy PSI-1.7: Coordination between Agencies. Encourage independent public agencies to consult and coordinate with the City on their development projects.

Action A: Support expansion of Atascadero State Hospital facilities and functions only when impacts can be adequately mitigated.

Action B: Support the efforts of public and private K-12 schools, post-high school, and trades educational facilities to provide diverse and high-quality learning opportunities, and ensure such facilities integrate well into neighborhoods and districts.

Action C: Work with the school district, Atascadero Mutual Water Company, PG&E, the State Hospital, and the County, in addition to other independent agencies, to ensure that frontage and streetscape improvements adjacent to school sites area consistent with City plans and standards.

Water Supply and Delivery

The Atascadero Mutual Water Company services over 30,000 residents through 10,000 service connections and a system of groundwater wells, booster pumps, storage tanks, water treatment facilities, pressure-reducing stations, and fire hydrants. In contrast to other Central Coast cities, Atascadero (through the water company) enjoys a reliable water source. As required by State law, the Atascadero Mutual Water Company prepares updates to its water system and water supply plans to forecast and plan for future needs. The City works with Water Company staff to ensure the plans reflect General Plan growth capacities.

Given that this General Plan accommodates growth largely within the USL, the Atascadero Mutual Water Company will need to provide assurances that water system facilities will support the type and location of new development. Through its master plan, facilities will continue to be defined to provide needed service levels. Regarding water supply, a continued focus on water conservation will help moderate demand withdrawals from local groundwater basins.

Goal PSI-2: Continued high-quality water services

Policy PSI-2.1: Water Service Capacity. Ensure that adequate water service capacity and facilities exist prior to approving new development.

Action A: Coordinate with the Atascadero Mutual Water Company to ensure provision of facilities and water supplies commensurate with demand and projected need.

Action B: Require all proposed new projects and new development requiring domestic water service to obtain a will serve letter from the Atascadero Mutual Water Company.

Wastewater Collection and Treatment

The Public Works Department Wastewater Division manages all sewage collection, treatment, and disposal services in the City. As of 2024, approximately 5,500 properties are served by City sewer, with a roughly equal number rural properties served by individual private on-site disposal systems. All collected sewage either flows or is pumped to the City's water reclamation facility located east of Chalk Mountain Golf Course, adjacent to the Salinas River. The plant's effluent, after being cleaned to meet State Water Quality Control Board standards, is directed into percolation ponds which recharge groundwater, with a portion of the reclaimed groundwater then used to irrigate the adjacent County-owned golf course.

Since the mid-2010s, the treatment plant has strained to meet increased treatment capacity needs. With initiation of the 2045 General Plan, the City began the process of updating the wastewater treatment and collection master plans to identify upgrades needed to support planned growth levels and achieve high water quality for reclaimed water. The updated Water Reclamation Facility Master Plan addresses long-term development goals. The study also considered expanded treatment capacity to serve properties less suitable for on-site wastewater treatment systems within the USL where not currently connected to the sewer system. Additionally, in 2020, the Central Coast Regional Water Quality Control Board (CCRWQCB) adopted a new Wastewater Discharge Requirements General Permit (General Permit) that significantly tightened requirements for wastewater effluent. The new General Permit will require a new wastewater treatment process to meet these stricter requirements.

Goal PSI-3: A comprehensive wastewater collection system and wastewater treatment plant capacity that support growth and economic development goals

Policy PSI-3.1: Water Reclamation Facility Master Plan. Ensure the Water Reclamation Facility Master Plan responds to long-term growth objectives and local water quality goals.

Policy PSI-3.2: Reclamation Facility. Construct and maintain a water reclamation facility with capacity for forecasted growth that allows for beneficial reuse of treated wastewater.

Policy PSI-3.3: Wastewater Collection System Master Plan. Ensure the municipal sewage collection system serves the needs of all customers efficiently and cost effectively.

Action A: Establish sewer service fees and adjust to levels that can fund planned improvements to the water reclamation facility and sanitary sewer collection system.

Action B: Pursue State and Federal funding opportunities to update the current system and comply with regional regulations.

Action C: Include provisions in the Sewer Collection System Master Plan to address providing sewer service to identified areas in the Local Agency Management Program (LAMP).

Stormwater Drainage and Flood Protection

Four natural watersheds cover Atascadero: Atascadero Creek, Graves Creek, Paloma Creek, and the Salinas River. The Salinas River flows most of the year, whereas the other creeks are more seasonal in nature. The Federal Emergency Management Agency (FEMA) has identified 100-year floodplains along Atascadero Creek, Graves Creek, Paloma Creek, and the Salinas River. While localized flooding can and does occur during heavy rain events, including the major storms in January 2023, the potential for major flooding is most likely to occur along Atascadero Creek and Graves Creek (see additional discussion of flood zones in the Safety and Emergency Preparedness Element).

The City has developed and maintains an extensive stormwater drainage system to protect properties from flooding conditions. The system was designed and constructed before much of the current development and prior to the rise of extreme weather events attributed to climate change. Historical large storm events, including the large rainstorms of January 2023, have identified system vulnerabilities. During the 2023 event, storm drains could not accommodate the rapidly accumulating runoff or became clogged from stream sediment, resulting in flooded roads, homes, and municipal buildings. Significant sources of stormwater inflow and infiltration throughout the sewer collection system challenged the ability of the water reclamation facility to handle loads.

Many of the system's culverts and catch basins are undersized relative to the volumes of anticipated runoff or require upgrades due to age. The Public Works Department maintains maps identifying all stormwater drainage system components and, as part of the Capital Improvement Plan, itemizes planned improvements to reduce flooding potential or otherwise improve the drainage system. While the City historically has not prepared a stormwater management system master plan, having such a plan in place might qualify the City for grants for more comprehensive system enhancements.

Goal PSI-4: Minimized flood risks via a well-functioning stormwater management system

Policy PSI-4.1: Stormwater Drainage Planning. Plan comprehensively for stormwater drainage, considering the age of the City's system and emerging needs based on targeted growth areas and areas of concern.

Action A: Prepare, implement, and keep current a stormwater drainage master plan. Identify infrastructure in need of significant improvements or capacity upgrades.

Action B: Require improvement and ongoing maintenance of private stormwater drainage and retention areas as a condition of development approval.

Action C: Identify and collect development impact fees needed to pay for mitigation of regional stormwater drainage impacts for new development.

Action D: Require implementation of best management practices for new development to reduce discharges of nonpoint-source pollutants to the storm drain system.

Action E: Require implementation of post-construction structural control measures for new development to mitigate and treat additional stormwater runoff created by new impervious surfaces.

Action F: Consider adopting watershed management plan(s) and implementation mechanisms in Downtown to facilitate off-site stormwater management aimed at maximizing development potential.

Policy PSI-4.2: Stormwater Management. Manage stormwater drainage in a manner that protects and enhances natural drainage areas as habitat and outdoor places people enjoy.

Action A: Establish guidelines or standards for drainage improvements in natural areas that respond to applicable Federal and State requirements.

Solid Waste and Recycling

The California legislature has enacted several laws designed to reduce the volumes of solid waste entering landfills with the overarching goals of producing less waste, protecting land and water resources, and making people more conscious about their consumption practices. With consumers increasingly purchasing online and receiving goods at home, the potential exists for waste volumes to level or increase. Coupled with State programs, local efforts can be targeted to increase people's awareness of the negative impacts of diverting waste into landfills and to shift toward less-impactful behaviors.

The City contracts with a franchise waste hauler for trash pick-up services. That company is required to provide services consistent with State law regarding separation of recyclable materials and organic waste (yard clippings, food scraps) from the rest of the trash. In partnership with the County's Integrated Waste Management Agency, the City promotes awareness of requirements.

Goal PSI-5: Reduced waste volumes entering regional landfills and increased consumer commitment to minimizing waste production

Policy PSI-5.1: Waste Hauler Contracts. Contract with franchise waste haulers whose operations make it easy for residents and business owners to divert recyclable materials and organics from the waste stream.

Action A: Continue to encourage the reduction of solid waste through source reduction, curbside recycling, green waste collection, and recovery in cooperation with the Integrated Waste Management Board (SLO IWMA).

Action B: Support outreach and education efforts related to waste reduction, recycling, and organic waste, including statewide programs for the reuse and recycling of boxes and other packaging materials.

Goal PSI-5.2: Efficient, effective, safe, and orderly waste collection services.

Action A: Work with the waste hauler to identify solutions for consolidated waste collection and pick-up service in higher density, commercial, and mixed-use areas.

Action B: Review and update, as needed, the municipal code to ensure that waste collection service does not impede on-street parking, emergency access, or visual character.

Energy

Electricity and natural gas power the systems that allow residents to enjoy comfortable lifestyles and businesses to thrive. When they work well, we do not think about them much. If systems fail or the price we pay for electricity or gas strains our budgets, we think about them a lot. In Atascadero, private companies—Pacific Gas and Electric (PG&E)/Central Coast Community Energy (3CE)—provide electrical services with PG&E owing and maintaining the electrical transmission infrastructure. Southern California Gas Company (SoCal Gas) provides natural gas services, however, many residences on larger westside lots use propane gas. PG&E, 3CE, and SoCal Gas support their customers in efforts to conserve energy and lower their energy bills, including programs providing financial assistance and rebates/incentives, as well as advice on home solar energy system installation.

The City does not have the ability to affect private energy operations but can facilitate residents' and businesses' efforts to go "off grid" and establish their own onsite electric power systems. Such efforts can result in clean energy production—meaning less pollution—and lower energy costs for individuals.

Goal PSI-6: Increased development and use of clean, renewable energy systems

Policy PSI-6.1: Onsite Renewable Energy. Facilitate the installation of onsite renewable energy systems for residences and places of business.

Policy PSI-6.2: Energy Efficient Planning and Building Design. Encourage energy-efficient site planning and building design/construction.

Action A: Implement streamlined building permit review processes for onsite energy systems.

Action B: Continue to implement the California Green Building Standards.

Telecommunications

Access to available, affordable, and modern telecommunications infrastructure—including broadband, fiber optic, wireless (WiFi), and emerging technologies—connects Atascadero residents and businesses to the world and can serve as a major economic development tool, attracting businesses that require high-speed, reliable telecommunications service. Atascadero will work to facilitate and support a wide range of innovative telecommunications systems and services to attract and retain businesses, provide information and communication access for all residents, and facilitate public education.

Goal PSI-7: Increased access to modern and affordable telecommunications infrastructure and service throughout Atascadero

Policy PSI-7.1: Telecommunication System Upgrades. Facilitate the installation of and/or upgrades to private telecommunication systems that better connect Atascadero businesses, residents, and students to the world.

Action A: Encourage private investment in high-speed broadband telecommunications infrastructure that serves major commercial, business, and educational corridors.

Action B: Encourage private investment in wireless telecommunications infrastructure that efficiently and affordably connects rural residential neighborhoods, especially in the western half of Atascadero.

Action C: Facilitate and support the development of infrastructure necessary for all residents to use and benefit from new communication technologies.

Action D: Monitor information technology development to ensure compatibility with City infrastructure.

Action E: Strive to expand opportunities for all citizens to participate in City governance through use of communication technologies.

Action F: Continue to make essential City documents available for immediate retrieval by electronic transfer technologies.



Chapter 9: Safety and Emergency Preparedness Element

Introduction

In Atascadero, residents, business owners, and visitors experience low crime rates and benefit from efficient police, fire, and emergency medical services. City leaders and staff work hard to maintain a safe community. However, the threat of wildfires, flooding, hazardous materials, seismic and geological hazards, and noise require constant attention to guard against risks to life and property. Community safety planning reduces risk and creates resilient neighborhoods. This element establishes goals, policies, and actions that are designed to safeguard the community, provide for sound emergency preparedness planning, and build in resilience.

Safety and Emergency Preparedness Priorities

To help plan for, respond to, and recover from natural and human-caused disasters, this General Plan addresses the following safety and emergency preparedness issues.

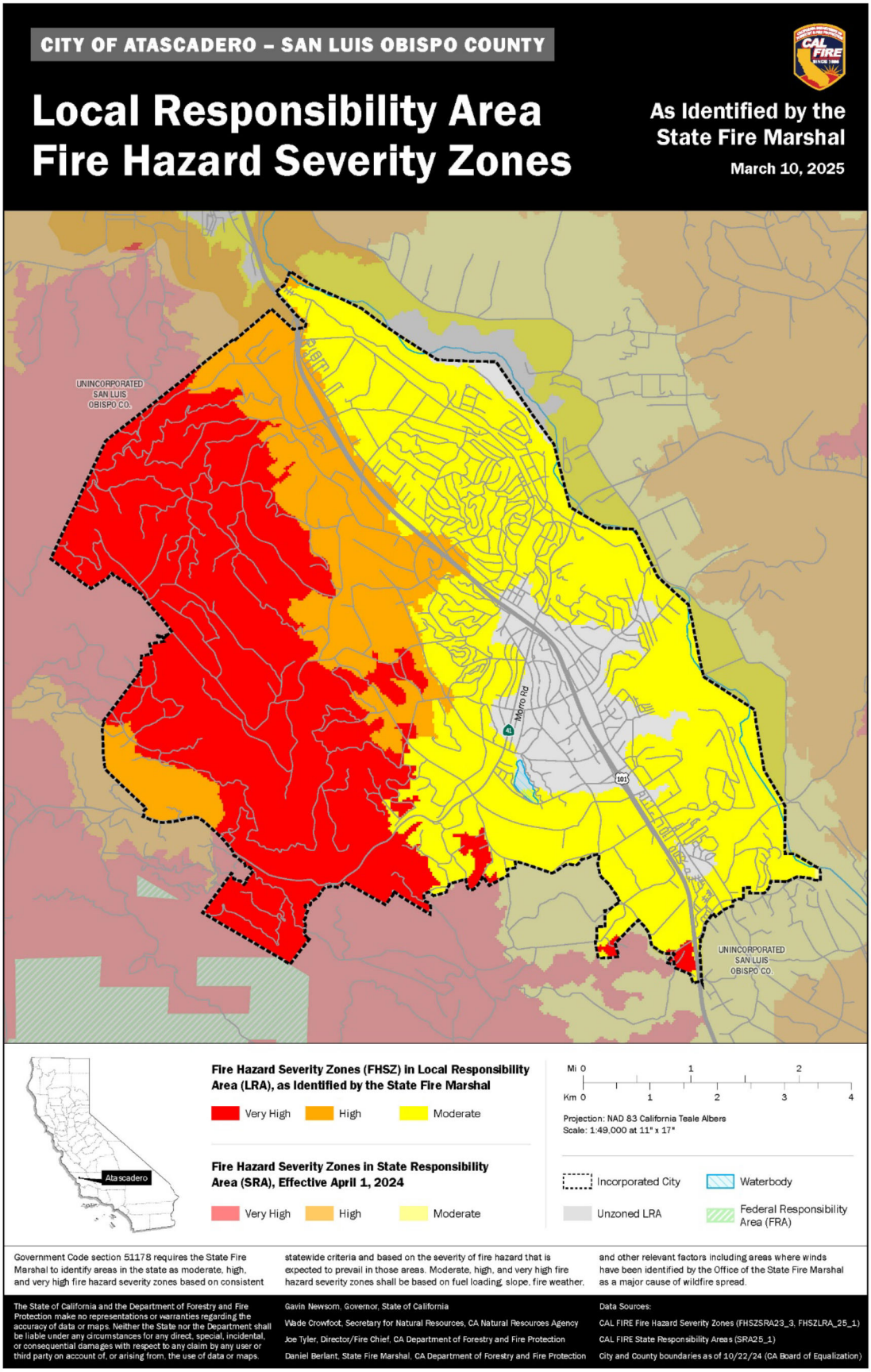
Wildfires

Atascadero has a considerable wildfire risk, with approximately half of the community included within a Very High or High Fire Hazard Severity Zone, as designated by the California Department of Forestry and Fire Protection (Cal Fire). The region has suffered from high-fire risk, experiencing several large-scale wildfires recorded between 1985-2025. Additional information about the history of significant wildfires and the potential for future events can be found in the latest Local Hazards Mitigation Plan and online with the California Department of Forestry.

Responsibility for fire protective services in the region falls under several agencies. On the local level, the Atascadero Fire Department is a City-funded department that oversees emergency fire response within City limits. Cal Fire is responsible for protecting natural resources from fire on land designated by the State Board of Forestry as State Responsibility Area, which includes most land directly outside of Atascadero's boundary. Cal Fire has a Mutual Threat Zone (where wildfires pose a shared threat to multiple jurisdictions) within City boundaries and provides a full wildland response. The United States Department of Forestry is responsible for fire protective services on Federally owned land, such as national forests and parks. Nearby Federal land includes Los Padres National Forest, which abuts Eacle Ranch and is located about 10 miles to the west of the City boundary.

Reducing the potential for loss of life and property in the event of a fire requires providing infrastructure that supports rapid response and reducing flammable materials that fuel wildland fires. Necessary infrastructure includes sufficient evacuation routes, adequate water supply and pressure (managed by the Atascadero Mutual Water Company), and strategic placement of new water tanks/reservoirs. Having more compact development pattern and requiring defensible space in areas at risk for wildfires can also help better protect new residents and businesses.

The City has adopted the 2025 State Fire Hazard Severity Zones Map (shown on the following page). Based on local conditions and known fire risks, the City may elect to adopt a more stringent map to address building and fire code requirements for future developments. The City has established clear building and defensible space standards in these areas to reduce wildfire risk. The City has identified fire prevention, mitigation, response, and recovery programs to help make fire prone areas more resilient to the wildfire threat.


CITY OF ATASCADERO – SAN LUIS OBISPO COUNTY
Local Responsibility Area
Fire Hazard Severity Zones
As Identified by the
State Fire Marshal
March 10, 2025
UNINCORPORATED
SAN LUIS
OBISPO CO.
Morro Rd
41
101
UNINCORPORATED
SAN LUIS
OBISPO CO.
Atascadero
Fire Hazard Severity Zones (FHSZ) in Local Responsibility Area (LRA), as Identified by the State Fire Marshal
Very High
High
Moderate
Fire Hazard Severity Zones in State Responsibility Area (SRA), Effective April 1, 2024
Very High
High
Moderate
Mi 0 1 2
Km 0 1 2 3 4
Projection: NAD 83 California Teale Albers
Scale: 1:49,000 at 11" x 17"
Incorporated City
Waterbody
Unzoned LRA
Federal Responsibility Area (FRA)
Government Code section 51178 requires the State Fire Marshal to identify areas in the state as moderate, high, and very high fire hazard severity zones based on consistent statewide criteria and based on the severity of fire hazard that is expected to prevail in those areas. Moderate, high, and very high fire hazard severity zones shall be based on fuel loading, slope, fire weather, and other relevant factors including areas where winds have been identified by the Office of the State Fire Marshal as a major cause of wildfire spread.
The State of California and the Department of Forestry and Fire Protection make no representations or warranties regarding the accuracy of data or maps. Neither the State nor the Department shall be liable under any circumstances for any direct, special, incidental, or consequential damages with respect to any claim by any user or third party on account of, or arising from, the use of data or maps.
Gavin Newsom, Governor, State of California
Wade Crowfoot, Secretary for Natural Resources, CA Natural Resources Agency
Joe Tyler, Director/Fire Chief, CA Department of Forestry and Fire Protection
Daniel Berlant, State Fire Marshal, CA Department of Forestry and Fire Protection
Data Sources:
CAL FIRE Fire Hazard Severity Zones (FHSZSRA23_3, FHSZLRA_25_1)
CAL FIRE State Responsibility Areas (SRA25_1)
City and County boundaries as of 10/22/24 (CA Board of Equalization)

Flooding

Areas along Atascadero Creek, Graves Creek, Paloma Creek, and the Salinas River have the potential to flood and are identified as 100-year flood zones by the Federal Emergency Management Agency (FEMA). Some properties fall within high-risk areas, known as Special Flood Zone Areas. These areas—largely located adjacent to the creeks and the Salinas river—have at least a one percent annual chance of flooding. If a property owner has a Federally backed loan within these areas, Federal regulations dictate that the owner maintain flood insurance. Even outside of these FEMA-designated zones, smaller drainage channels and culverts can become clogged or fail, creating the threat of localized flooding.

Flood-prone areas along Atascadero Creek could provide multi-benefit functions such as passive park space, places to recharge the groundwater basin, and areas to naturally filter urban run-off pollutants. However, because Atascadero Creek and other creeks transverse private property, creating dual public benefit uses presents challenges.

Hazardous Materials

Simply defined, a hazardous material is any item or agent (biological, chemical, physical) that has the potential to cause harm to humans, animals, or the environment, either by itself or through interaction with other factors. We encounter hazardous materials as part of our everyday lives: batteries, light bulbs, and household chemicals such as pesticides, motor oil, cleaners, and paints. The many electrical devices we use contain materials that become “e-waste” when those devices fail or become obsolete. Almost all commercial and industrial businesses utilize or produce hazardous materials as part of their processes.

The use, storage, and disposal of hazardous materials—including management of contaminated soils and groundwater—are regulated by a myriad of Federal, State, and local laws. In Atascadero, the Fire Department has responsibility to ensure businesses properly store hazardous materials to avoid accidental release and to allow firefighters to respond appropriately if upset occurs. The San Luis Obispo Environmental Health Services Division oversees reporting and inspections.

Seismic and Geologic Hazards

California sits atop the Pacific Plate, a piece of Earth’s crust that extends from Japan and Indonesian to the western U.S., and from Alaska south past Hawaii. The earthquakes we experience locally result from the grinding and shifting of the plate along a myriad of fault lines, some close by and others quite some distance away. For example, during the 1989 Loma Prieta earthquake that significantly shook the Bay Area and downed part of the Bay Bridge, Atascadero residents experienced light shaking.

The fault zones closest to Atascadero are the Rinconada and the Nacimiento faults. According to the U.S. Geological Survey (USGS), the Rinconada fault is considered active, with the potential to generate a maximum 7.5 magnitude earthquake. An earthquake of this scale would produce significant ground shaking and could trigger the seismic-related effects including landslides (see **Figure 9-3**) and liquefaction (see **Figure 9-4**). The degree of hazard depends on the location of the

seismic epicenter, the magnitude and duration of ground shaking, topography, groundwater conditions, and type of building construction. The Nacimiento fault is considered inactive. Of regional significance is the San Andreas fault, which extends from San Francisco Bay through central California to the Gulf of California. A major earthquake along the San Andreas fault would have the potential to result significant ground shaking and, depending upon the location of the earthquake, cause catastrophic damage. **Table 9-1** identifies fault zones in the vicinity of the Planning Area.

Table 9-1: Nearby Fault Zones and Ground Shaking Potential

Fault Zone	**Distance** (from El Camino Real/Traffic Way)	**Maximum Credible Earthquake**	**Maximum Probable Earthquake**	**Anticipated Acceleration Range** (in gravity, or g)
Rinconada and Jolon	2	7.5	7.0	0.40 – 0.6
Black Mountain	3	7.5	5.75	0.1
La Panza	9	7.5	Unknown, but 5 assumed	0.1 – 0.4
Los Osos	14	7	Unknown, but 5 assumed	0.1 – 0.2
Hosgri	22	7.5	6.5 – 7.5	0.1 – 0.2
San Andreas	27	8.25	8	0.1 – 0.2
San Simeon	35	Unknown	6.5	Unknown

Noise

Noise typically is defined as unwanted sound. Exposure to excessive noise can impact the health and quality of life of people who reside in, work in, or visit Atascadero. While people may not agree as to what constitutes particularly irksome noise, science does show that certain defined noise levels can cause ill health effects. Excessive noise can cause hearing loss, stress, hypertension, sleep disturbance, and fatigue. Noise sources within the City include:

- Roadways and freeways are the primary noise sources in the City of Atascadero. Primary transportation noise sources include vehicular traffic along US-101 and SR-41.
- Freight and Amtrak train traffic along the Union Pacific Railroad corridor result in localized and intermittent noise events.
- Non-transportation-related noise sources are predominantly associated with industrial and commercial operations and building mechanical equipment. Other noise sources can result in intermittent increases in ambient noise levels, such as short-term construction activities, as well as school and events.

Police Services

The Atascadero Police Department prides itself in safeguarding the community. Part of its stated mission is "to work toward being the premier law enforcement agency on the central coast." The Federal Department of Justice reports the rate of crime in Atascadero to be 23.73 per 1,000 residents during a standard year. The most frequent crimes are drug crimes (5.6 percent), vandalism (5.4 percent), vehicle theft (3.4 percent), theft (2.8 percent), and assault (1.6 percent). While Atascadero is a relatively safe community, the realities and perceptions around crime affect how current and prospective residents and business owners view the community.

New Public Safety Facilities

The City's Police and Fire Departments have identified needs for critical upgrades to existing facilities. Fire Station #1 will be rebuilt at its existing site and will include an Emergency Operations Center. Fire Station #2 will have a complete renovation of the living quarters. The Police Department will include major renovations and a new dispatch building. All three projects are expected to be completed in 2027. The Fire Department also envisions a third fire station in the 101/Del Rio region to ensure appropriate response times throughout the City. While capital projects are expensive and require consideration to the cost of additional staff, the one-time expense often helps improve efficiencies and reduce other operations and maintenance expenses.

Relationship to the Local Hazard Mitigation Plan

Under the provisions of the Federal Disaster Mitigation Act of 2000 and California Government Code Sections 8685.9 and 65302.6, local governments can adopt a local hazard mitigation plan into their safety element. If a community has not done so, the State will only reimburse the community up to 75 percent of eligible costs associated with emergency response and recovery from a specific situation. Communities with a hazard mitigation plan incorporated into their safety element may receive more than 75 percent of eligible costs from the State.

The City of Atascadero coordinates with San Luis Obispo County on preparation of a Multi-Jurisdictional Hazard Mitigation Plan, which comprehensively addresses mitigation planning for all seven cities plus unincorporated County areas. Originally adopted in 2020, the County updates the regional plan every five years to respond to emerging issues. The Multi-Jurisdictional Hazard Mitigation Plan is incorporated by reference into this Safety and Emergency Preparedness Element.

Safety and Emergency Preparedness Goals, Policies, and Actions

The following sections include goal sections, with supporting policies and implementation actions, related to the following topics:

- Wildfire Risks
- Flooding
- Hazardous Materials
- Seismic and Geological Hazards
- Noise
- Emergency Preparedness and Response
- Police Protection
- Fire Protection Services and Emergency Medical Response

Wildfire Risks

Wildfires are major concerns of many municipalities. Like most communities in San Luis Obispo County, Atascadero faces the potential of catastrophic fires even with well-planned risk reduction (see **Figure 9-1**). These goals, policies, and actions focus on strategies the City, property owners, and partner agencies will undertake to reduce the threat of all types of wildfires.

Goal SEP-1: A high level of protection from and minimized risk to life in the event of a fire

Policy SEP-1.1: New Development Risk Reduction. Promote new development in areas of the community that have lower risk of wildfire hazards and ensure new development in higher risk areas are consistent with Wildland Urban Interface (WUI) standards.

Action A: Encourage the clustering of lots in higher fire hazard areas surrounded by defensible open space to minimize fire risk to new rural development.

Action B: Coordinate Fire Department and Atascadero Mutual Water Company review of subdivision design to ensure adequate fire flows.

Action C: Review new development to ensure adequate access for emergency vehicles and compliance with Fire and Building Codes.

Action D: Monitor and update the Municipal Code so that requirements for new development within the WUI to meet or exceed the requirements of the California Code of Regulations, including the California Building Code, the California Fire Code, California Wildland Urban Interface Code, and sections on SRA Fire Safe Regulations and Fire Hazard Reduction Around Buildings and Structures Regulations.

Action E: Work with land use applicants to locate development relative to landscape features that can act as buffers from oncoming wildfires (like agricultural lands and

maintained parks and greenbelts).

Action F: Ensure at least two evacuation routes for all new residential developments, with roads wide enough for emergency vehicles.

Action G: Require the installation of all new utilities underground to prevent ignitions from powerlines.

Action H: Implement development standards to assure adequacy of access for equipment, water supplies, construction standards, and vegetation clearance.

Action I: Prohibit increased land use densities in WUI areas, such as those allowed by State laws and density bonus laws, to minimize risk of exposure to persons in the event of wildfires.

Action J: Require that new essential public facilities be located outside of VHFHSZ to the maximum extent practicable.

Policy SEP-1.2: Fire Impact Reduction. Implement programs and policies that minimize risks to life and property posed by fires.

Action A: Coordinate with the Atascadero Municipal Water Company to ensure that fire flows and anticipated water supply storage capacity is adequate for both short- and long-term fire prevention and protection.

Action B: Continue to enforce the Building Code for the installation of residential fire sprinklers on new construction citywide.

Action C: Consider updating the Zoning Code to require conditions on land uses that serve mobility-limited persons, such as assisted care facilities or small group homes, to prepare and maintain detailed evacuation plans in the event of wildfires and other catastrophic events.

Policy SEP-1.3: Wildfire Risk Reduction. Increase wildfire resiliency using required and voluntary risk reduction regulations and strategies.

Action A: Adhere to State and local regulations and recommendations, including fire-safe design, of the Community Wildfire Protection Plan that address wildfire risk and vulnerabilities.

Action B: Pursue becoming a Fire Risk Reduction Community.

Action C: Encourage neighborhoods in becoming a NFPA recognized Firewise USA Community.

Action D: Identify and implement evacuation procedures in coordination with the City's Emergency Plan.

Action E: Support and coordinate with the Air Pollution Control District to allow burning within the City of Atascadero as a strategy for vegetation reduction.

Action F: Update and maintain regulations that balance the need for defensible areas around homes with the preservation of native trees, riparian corridors, and sensitive

habitats.

Action G: Identify residential developments in hazard areas that do not have at least two emergency evacuation routes identified and pursue grant funding opportunities to construct emergency access roads.

Action H: Update the Community Wildfire Protection Plan every five years to reflect the needs of the community and the changing risks in WUI areas. Ensure each update to the Community Wildfire Protection Plan identifies slope stability and wildfire hazard areas and mitigation strategies to reduce post-wildfire erosion.

Policy SEP-1.5: Vegetation Management Strategies. Implement vegetation management strategies and enhanced roadway standards in fire-prone areas through the City's Community Wildfire Protection Plan.

Action A: Implement the fuels mitigation projects in the Community Wildfire Protection Plan and establish a monitoring program to track the effectiveness of Community Wildfire Protection Plan fuel-treatment activities.

Action B: Identify and encourage mitigation of existing non-compliant properties to current defensible space standards.

Action C: Enhance roadside safety and access for emergency services by implementing rigorous vegetation clearance.

Action D: Continue to promote the efforts of the Fire Safe Council and continue to identify locations within the City where fuel mitigation treatments can be implemented to help slow wildfire spread.

Policy SEP-1.6: Community Outreach and Education. Ensure all community members and businesses are informed and empowered to address fire hazard vulnerabilities.

Action A: Conduct education and outreach campaigns that assist property owners with defensible space, fire-safe landscaping, home hardening, and wildfire preparedness.

Action B: Ensure wildfire mitigation, education, and outreach efforts are made to vulnerable populations.

Action C: Work with local and regional partners that can provide assistance to low-income households to maintain defensible space around their homes and properties.

Action D: Continue to educate the public about County-wide emergency preparedness resources.

Action E: Inform homeowners and residents of fire dangers, appropriate responses to fire, and ways to prevent loss.

Policy SEP-1.7: Redevelopment after Fire. Use lessons learned from major fire events to minimize future loss of life and property damage within high fire zones.

Action A: Develop a process to evaluate redevelopment after a large fire to meet current codes.

Action B: Require that any redevelopment in a VHFHSZ after a fire complies with all

current zoning, building, and fire codes.

Action C: Require that any redevelopment in a VHFHSZ include a fire protection plan.

Flooding

According to the San Luis Obispo County Multi-Jurisdictional Hazard Mitigation Plan, the most common type of flooding event in Atascadero is riverine flooding, also known as overbank flooding. In addition to riverine flooding, Atascadero is susceptible to flash flooding in smaller watersheds. The highest risk areas of flooding include properties along the Salinas River, Atascadero Creek, Graves Creek, Boulder Creek, and Paloma Creek corridors. See **Figure 9-2** for the 100- and 500-year flood zone and dam inundation areas in Atascadero.

Goal SEP-2: Flood prevention and reduction strategies that limit damage to natural areas while safeguarding property and lives

Policy SEP-2.1: Reduce Flooding Risk. Ensure land use strategies consider flood control and stormwater management tactics to reduce the adverse impact of potential minor and major flooding.

Action A: Incorporate flood management strategies into land use analysis and development review.

Action B: Maintain and update a storm drainage infrastructure inventory.

Action C: Employ flood mitigation strategies in the development of plans and projects along creeks and waterways.

Action D: Seek funding to replace and/or improve existing aging infrastructure.

Policy SEP-2.2: Open Space for Flood Protection. Promote the enhancement and expansion of open space areas for flood management and passive recreation where appropriate and safe.

Action A: Protect floodplains by retaining and expanding, as feasible, open space areas that can retain stormwater, recharge groundwater aquifers, and prevent or reduce flooding.

Action B: Integrate stormwater features, as appropriate, into pocket parks in new development where such can provide co-benefits of flood control and passive or active open space.

Policy SEP-2.3: FEMA Requirements. Comply with all applicable Federal Emergency Management Agency (FEMA) flood-management regulations and requirements.

Action A: Continue to maintain and periodically update flood hazard data, and coordinate with Federal, State, and local agencies responsible for flood hazard analysis and management activities.

Action B: Continue to incorporate features into capital projects and appropriate standards

that reduce flooding hazards.

Action C: Consider impacts to biological resources when performing flood-related preventive maintenance and repair.

Policy SEP-2.4: Structures in Floodplains. Enforce Federal regulations regarding placement of structures in floodplains, and maintain appropriate standards for development in flood-prone and poorly drained areas.

Action A: Require an evaluation of flood hazards and appropriate on-site mitigation options by a qualified professional for any project in a FEMA designated floodway during the development review process.

Action B: Discourage modifications to natural floodways, and enforce FEMA's Conditional Letter of Map Revision (CLOMR) and Letter of Map Revision (LOMR) processes if development occurs within an existing floodway.

Action C: Require the lowest finished floor of new construction in low-lying or other areas with serious drainage or flooding potential to be a minimum of one foot above the 100-year water surface elevation.

Action D: Prohibit development that will create new upstream or downstream flooding or drainage problems.

Policy SEP-2.5: Damage Reduction. Reduce flood damage in areas known to be prone to flooding.

Action A: Augment existing GIS and other data regarding low-lying areas with information obtained during storms.

Action B: Identify flood mitigation improvements for low-lying, flood-prone areas, and seek funding for those projects.

Action C: Catalog aging, undersized, or damaged drainage infrastructure and seek funding for replacement and repair.

Policy SEP-2.6: Flood Response. Prepare the City to respond to flood emergencies.

Action A: Train and adequately equip City personnel to a level appropriate to their positions and responsibilities to respond to flood emergencies.

Policy SEP-2.7: Dam Failure. Minimize the risk of dam failure.

Action A: Work with State agencies to assist with inspection and maintenance of the Atascadero Lake dam.

Action B: Coordinate with applicable agencies to ensure Atascadero has the latest information about impacts and emergency response coordination should failure occur to Salinas Dam on the Santa Margarita Lake reservoir.

Action C: Maintain a dam failure evacuation plan to guide public officials that includes use of the emergency alert system to notify the public.

Action D: Maintain, and update as needed, dam failure inundation mapping and emergency action plan for Atascadero Lake dam.

Hazardous Materials

The City's interest in maintaining a healthy environment drives policies to keep hazardous materials out of the air, water, and ground. A parallel interest is minimizing exposure of people to materials that could adversely affect their health. With land use policies allowing flex commercial and limited light industrial uses near residential neighborhoods, care will be taken to minimize risk to nearby residents and to people who work in the businesses.

Goal SEP-3: Reduced potential for harm to individuals and the environment due to the presence of hazardous materials

Policy SEP-3.1: Hazardous Substance Exposure. Reduce the potential for exposure to humans and the environment from hazardous substances.

Action A: Coordinate with the County to ensure that hazardous materials used in business and industry be used, handled, transported, and stored in accordance with Federal, State, County, and local regulations.

Action B: Work with Caltrans to require all transport of hazardous materials to follow approved routes.

Action C: Require businesses to maintain access needed for emergency response to spill incidents.

Action D: Ensure that regional routes for transportation of hazardous materials are identified and unsafe conditions comprehensively addressed with partner agencies.

Action E: Ensure State regulations and proper City protocols are followed to guard against failure of the City's wastewater treatment facility.

Action F: Coordinate with the State Regional Water Quality Control Board to implement standards that regulate discharge of pollutants into surface waters and groundwater.

Policy SEP-3.2: Pesticide Exposure. Reduce the potential of pesticide exposure to humans and the environment.

Action A: Ensure that emergency first responders and dispatch operators know to contact the County Agricultural Commissioner's Office or State Poison Control for technical assistance in the event of a pesticide-related emergency.

Action B: Minimize use and continue to train City staff on the safe application and handling of chemical-based pesticides at City parks and other City facilities.

Policy SEP-3.3: Oil and Gas Spills. Minimize potential hazards and spills from oil and gas pipelines and underground storage tanks.

Action A: Work with pipeline owners and operators and appropriate County and State agencies to develop adequate prevention and cleanup strategies.

Action B: Coordinate with property owners and the San Luis Obispo County Environmental Health Department to abate leaking underground storage tanks and monitor existing tanks for leakage.

Policy SEP-3.4: Radiation Exposure Reduction. Support San Luis Obispo County efforts to maintain a high level of radiation emergency preparedness.

Action A: Coordinate with the County and PG&E to review and update information about emergency preparedness and evacuations.

Action B: Coordinate with the County and PG&E to provide information about the Diablo Canyon Power Plant.

Seismic and Geologic Hazards

State building codes and careful site planning provide guards against catastrophic loss of life and damage to property in the event of an earthquake or events such as landslides. Land use policies address avoiding density in the hillside environments most susceptible to slope failure. The following goal and policies point to the importance of proactive measures in minimizing risk.

Goal SEP-4: Minimized exposure geologic and seismic hazards and the associated risks to life and property

Policy SEP-4.1: Risk Reduction. Ensure that the public is informed about the risks of geologic and seismic hazards and potential mitigation options.

Action A: Provide information to the public to improve awareness of geologic hazards and seismic safety.

Action B: Continually update information about faults and geologic hazards (including GIS data and geologic and fault mapping) as new information becomes available.

Action C: Work with property owners of unreinforced masonry buildings to retrofit or demolish structures consistent with the California Building Code.

Policy SEP-4.2: Structure Design. Ensure that structures are designed and located to withstand strong ground shaking, liquefaction, and seismic settlement.

Action A: Enforce building code requirements for new development, including addressing liquefaction potential and preparing geotechnical reports.

Action B: Enforce Building Code provisions pertaining to grading and construction relative to seismic hazards.

Action C: Update Title 8 of the Municipal Code as necessary to promote seismic safety in structural designs.

Action D: Require retrofitting and abatement of structural hazards to levels of risk acceptable to the Building Official.

Action E: Prioritize retrofitting and abatement of City-owned structures, including buildings, bridges, and other infrastructure, in areas determined to experience strong ground shaking during an earthquake.

Action F: Work with and support state and local agencies, including public utilities, to retrofit and harden water storage facilities, wastewater conveyance, electricity transmission lines, roadways, regional stormwater facilities, levees, and other utilities that could be negatively affected by earthquakes.

Policy SEP-4.3: Reduced Risk. Minimize development in areas at high risk for geologic hazards.

Action A: Avoid or adequately mitigate any development of critical facilities—hospitals, fire stations, emergency management headquarters, broadcast services, sewage treatment plants, and places of large congregations of people—in high-risk geologic hazard zones (e.g., fault zones, liquefiable soils, areas of slope instability).

Policy SEP-4.4: Erosion Control. Promote erosion control strategies that reduce hazards to structures, properties, and drainages.

Action A: Identify and require enhanced erosion control measures for properties that exhibit high erosion potential, are in areas of steep slopes, or have experienced past erosion problems.

Action B: Require development proposals to mitigate landslide and slope stability conditions that have the potential to impact adjacent properties, structures, and infrastructure.

Action C: Enforce Building Code provisions and other applicable ordinances regulating development on sloping ground.

Action D: Continue to require slope stability assessments by appropriate registered professionals for developments in areas of known slope instability, landslides, or slopes steeper than 10 percent.

Action E: Maintain mapping of high landslide risk areas and ensure that structures are engineered to account for any associated risk.

Noise

Part of Atascadero's attraction is its quiet neighborhoods, where the topography largely buffers homes from Highway 101 noise. Residents appreciate being able to hear sounds of nature in the evening and enjoy the outdoors. Downtown and larger parks are places where a noisier environment is acceptable, as people gather at these locations for community events and entertainment. This goal and associated policies and actions respond to varied community noise environments.

Goal SEP-5: Neighborhoods that maintain a strong quality of life while supporting a vibrant and thriving economy.

Policy SEP-5.1: Noise Ordinance. Maintain and update the City's Noise Ordinance to balance the economic, social, and rural vision of Atascadero.

Action A: Update the Noise Ordinance to incorporate construction best management practices to minimize construction noise when construction activities would be located within 1,000 feet of noise-sensitive land uses.

Action B: Update the Noise Ordinance to add conditions that would allow for temporary increases in noise in certain locations, such as Downtown, mixed-use areas, key commercail nodes, and parks, to accommodate special events. Encourage and allow these uses with appropriate noise thresholds.

Action C: Require projects to reduce noise exceeding the City's maximum allowable exterior and interior noise standards, unless exceptions are granted.

Policy SEP- 5.2: Land Use Compatibility. Prevent noise-sensitive land uses from encroaching upon existing or planned noise-producing uses, such as permitted industrial businesses and commercial activities, to allow businesses enterprises to thrive.

Policy SEP-5.3: Residential Noise Reduction. Preserve the tranquility of rural single-family residential areas by preventing the encroachment of noise-producing uses.

Policy SEP-5.4: Site Planning. Avoid or reduce noise impacts through site planning, project design, and implementation of the California Building Code and Health and Safety Code.

Action A: Consider updating the Municipal Code to provide options for new development to provide buffers other than sound walls when required.

Policy SEP-5.6: Transportation Noise. Reduce the impacts of transportation-related noise.

Action A: Avoid new development of noise-sensitive land uses in areas exposed to existing or projected future levels of noise from transportation noise sources which exceed the City's "normally acceptable" noise standards for land use compatibility unless the project design includes effective measures to reduce noise in outdoor activity areas and interior spaces to or below the "conditionally-acceptable levels," as specified for the given land use in **Table 9-2**.

Action B: Work with Caltrans to evaluate and develop traffic noise mitigation programs along Highway 101 and State Route 41.

Policy SEP-5.7: Stationary Noise. Reduce the impacts of stationary noise sources.

Action A: Avoid new development of noise-sensitive land uses where the noise level due to existing stationary noise sources will exceed the noise level standards of **Table 9-3** unless effective noise mitigation measures have been incorporated into the design of the

development to reduce noise exposure to or below the levels specified in **Table 9-3**.

Action B: Require mitigation of noise created by new proposed stationary noise sources or existing stationary noise sources which undergo modifications so such uses do not to exceed the noise level standards of **Table 9-3** on properties designated for noise-sensitive uses.

Action C: Maintain exceptions for Agricultural activities within the Agricultural land use designations during reasonable hours.

Action D: Work with private parties to reduce or mitigate noise exceeding allowed levels from existing industrial and commercial stationary-noise sources that impact nearby noise-sensitive land uses.

Table 9-2: Maximum Allowable Noise Standards for Transportation Noise Sources

Noise Sensitive Land Use	Interior Occupied Spaces (dBA)		Outdoor Activity Areas (dBA)1
	CNEL	Leq6	
Residential	45[4]		65[2,3]
Mixed-Use Residential	45[4]	--	--
Convalescent Care Facilities, Hospitals	45[4]		70[2,3]
Transient Lodging	45		65[2,3]
Schools, Libraries, Museums and Places of Worship	--	45	--
Playgrounds, Neighborhood Parks	--		705
Office Buildings	--	45	703

1. To be applied at outdoor activity areas. Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied at the property line of the receiving land use.
2. Where it is not possible to reduce exterior noise levels to 65 dBA CNEL, or less, an exterior noise level of 70 dBA CNEL may be allowed provided that an acoustical analysis has been prepared for the project to identify available exterior noise-reduction measures to be incorporated and interior noise levels are in compliance with this table. For multi-family development, the exterior noise standard may be applied at a designated on-site outdoor common-use area in lieu of individual unit patios or balconies.
3. Where outdoor activity areas are not included in the project design, only the interior noise level standard shall apply.
4. In locations where railroad noise is the predominant noise source, the interior noise standard for residential land uses shall be reduced by 5 dB to account for the increased potential for sleep disruption to building occupants.
5. Where quiet is a basis for use.
6. 6. This standard is intended to apply to land uses with operational hours predominantly during the daytime hours. The interior noise standard applies to a typical worst-case hour during the period of use.

Table 9-3: Maximum Allowable Noise Standards for Non-Transportation Noise Sources

	Daytime 7:00 AM to 7:00 PM	Evening 7:00 PM to 10:00 PM	Nighttime 10:00 PM to 7:00 AM
Exterior Noise Standards[1,2]			
Hourly Equivalent (L_{eq} dBA)[3,5]	55	50	45
Maximum Level (L_{max} dBA)[4,5]	75	70	65
Interior Noise Standards[6]			
Hourly Equivalent (L_{eq} dBA)[3,5]	45	40	35
Maximum Level (L_{max} dBA)[4,5]	60	55	45

1. As determined at the outdoor activity area of the receiving noise-sensitive land use. Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied at the property line of the receiving land use. In the event the measured ambient noise level exceeds the applicable noise level standard the applicable standard shall be adjusted so as to equal the ambient noise level.
2. Exterior noise standards are to be applied in noise-sensitive outdoor activity areas. Excludes mixed-use residential and school playgrounds.
3. Leq = Average or "Equivalent" noise level during the worst-case operational hour of use. Sound level measurements shall be made with slow meter response.
4. Lmax = Highest measured sound level occurring during a given interval of time (e.g., 1 hour). Sound level measurements shall be made with fast meter response.
5. Where the noise source in question consists of speech or music, or is impulsive in nature, or contains a pure tone, the noise standards are reduced by 5 dB.
6. As determined within occupied areas of the receiving noise-sensitive structure. In the event the measured ambient noise level exceeds the applicable noise level standard the applicable standard shall be adjusted so as to equal the ambient noise level.

Emergency Preparedness and Disaster Response

Community resilience refers to a community's ability to prepare for, adapt to, and recover from challenges. Resilient communities are those with public services, health systems, and infrastructure that will be put into effective action in the event of a hazard or emergency. Resiliency enables a community to recover more quickly from a disaster. Private businesses, individual residents, and volunteer organizations play a critical role. Key components of resilience are effective pre-planning for potential future catastrophic events and efficient response to disasters once they have occurred.

Goal SEP-6: A community well prepared to respond to and recover from natural and human-caused disasters

Policy SEP-6.1: Emergency Preparedness and City Response: Train City staff, coordinate with regional agencies, and implement programs to be prepared for and capable of responding to all emergency events.

Action A: Maintain and periodically update the City's Emergency Operations Plan.

Action B: Coordinate with San Luis Obispo County, adjacent cities, special districts, and unincorporated communities to prepare and regularly update joint emergency response and disaster response plans.

Action C: Consider hazard mitigation and climate resilience actions and strategies with the City's Capital Improvement Program and annual budgeting process.

Action D: Provide required training to ensure the readiness of response teams and Emergency Operations Center staff.

Action E: Follow statewide Standardized Emergency Management System procedures.

Action F: Consider planned evacuation routes with roadway improvement projects and incorporate identified elements as feasible.

Action G: Provide ongoing emergency preparedness training for all City staff.

Policy SEP-6.3: Resident Response Programs and Support. Help prepare and organize residents to respond effectively to disasters.

Action A: Provide educational materials to increase community awareness of hazard risks/vulnerabilities and strategies that community members and businesses can employ to mitigate risks/vulnerabilities.

Action B: Support education in the schools that teaches children how to avoid dangers and behave during an emergency.

Action C: Maintain and update, as needed, the emergency evacuation program for Atascadero neighborhoods.

Action D: Support disaster education and preparedness education geared towards residents through programs such as Community Emergency Response Team (CERT) or other community-based efforts.

Action E: Promote public awareness of the natural hazards and potential effects of disasters through community and volunteer organizations.

Action F: Incorporate strategies from the Community Wildfire Protection Plan, Local Hazard Mitigation Plan, and other resilience-building plans into outreach and educational information.

Policy SEP-6.4: Inter-Agency and Media Coordination. Coordinate with San Luis Obispo County and State agencies, news media, and others working to reduce the risks of disasters through effective preparedness, response, and recovery.

Action A: Continue to implement mutual aid, automatic aid, and California's Mutual Master Aid System to provide effective emergency response and to support emergency management.

Action B: Continue to execute agreements with public and private entities to support community emergency response and management.

Action C: Maintain a Public Information Officer (PIO) to meet with agency and media

representatives to coordinate communications, activities, and materials.

Action D: Support the efforts of many organizations – government, radio, newspapers and TV stations, utilities, emergency response providers, the Office of Emergency Services – that provide outreach and education to the community.

Policy SEP-6.5: Database Maintenance. Expand and update the database of safety-related information and convey that information to the public and decision makers.

Action A: Maintain an updated City GIS hazard map with information on fire hazard areas, native plant fuel loads, flood zones, un-reinforced masonry buildings, underground storage tanks, landslide areas, earthquake faults, pipelines, high voltage electrical transmission lines, railroads, state highways, and evacuation routes.

Action B: Seek from other government, academic, and private organizations new data that can be used for emergency preparedness and response.

Action C: Share hazard information with nearby jurisdictions, private and public organizations, and the public.

Policy SEP-6.6: Evacuation Coordination and Investments. Prioritize investments that expand and enhance evacuation capacity and capabilities.

Action A: Seek funding to improve existing single-access residential neighborhoods so they include additional access routes or other provisions to increase evacuation safety.

Action B: Analyze the capacity, viability, and safety of evacuation routes for hazard areas in Atascadero, and incorporate the results into City emergency operations and disaster recovery plans.

Policy SEP-6.7: Reduce or Eliminate Long-Term Risk. Perform assessments aimed at reducing or eliminating long-term risks to improve efficiency and decrease the cost of disaster response and recovery.

Policy SEP-6.8. Long-Term Recovery. Facilitate long-term recovery following a disaster.

Action A: Assist with public and private rebuilding efforts, provision of housing for displaced residents, and resumption of service, business and government functions.

Action B: Provide mutual aid and coordination assistance to agencies and organizations involved in disaster recovery.

Action C: Identify and coordinate with agencies needed to participate in assessing damage, providing citizens with care and shelter, and repairing critical infrastructure.

Action D: Ensure duplicate storage of essential City records.

Police Services

The quality of Atascadero's Police Department and its relationship with the community have a direct impact on the community's overall safety and security and contribute to the quality-of-life residents enjoy. The following goal, policies, and actions aim to enhance the services and operations of the Atascadero Police Department while strengthening community partnerships.

Goal SEP-7: Responsive police services that deter and respond to crime and support a safe and secure community

Policy SEP-7.1: Equipment and Training. Develop, maintain, and implement a Police Department Master Plan that guides the provision of equipment, facilities, training, and operations centers.

Action A: Establish internal and operational goals for the Department based on assessment of needs, as directed by the City Council.

Action B: Produce a Master Plan which includes guiding sections on equipment, facilities, training, and operations.

Policy SEP-7.2: Staffing Levels. Work to maintain optimal police staffing levels, including sworn officers and civilian support, necessary to meet projected community needs.

Action A: In conjunction with the Police Department Master Plan, determine an efficient allocation level to meet projected goals and needs.

Action B: Formulate and enact a staffing strategy to hire additional staff or consolidate the Department as needed.

Action C: Monitor and assess the allocation of staff to needs on a regular basis.

Policy SEP-7.3: Response Times. Identify, monitor, and achieve appropriate minimum police response times for all call priority levels.

Action A: Establish goals for police response times based on priority levels.

Action B: Identify and implement strategies and tools needed to monitor police response times.

Action C: Implement a strategy to improve police response times, if needed, and maintain an ongoing assessment of response times.

Policy SEP-7.4: Inter-Agency Coordination. Coordinate with local, regional, State, and Federal criminal justice agencies to promote regional cooperation in the delivery of police services.

Action A: Identify and coordinate with relevant agencies, including both current and potential future partners.

Action B: Establish and maintain a system for ongoing and case-specific communications.

Fire Protection Services and Emergency Medical Response

Fire prevention and protection services and emergency medical response benefit the community in many ways. Most critically, loss of life and property can be minimized with quality services and response to emergency incidents. The City's Fire Department provides fire and emergency medical response services to the community. Fire prevention and emergency response planning are priorities. Minimizing fire risks occurs through education, routine inspections, and requiring building renovations and new construction to comply with current fire access and building codes. The following goal, policies, and actions address fire department staffing levels, emergency response times, training, facilities and equipment, and coordination with ambulance service providers and local hospitals.

Goal SEP-8: A robust, well-trained, and highly capable fire protection and emergency response system

Policy SEP-8.1: Facilities and Equipment. Plan for adequate facilities, equipment, and personnel to meet firefighting demands.

Action A: Develop and maintain a Fire Department strategic plan.

Action B: Continue to plan for future facility, equipment, communication system, and personnel requirements.

Policy SEP-8.2: Fire Response. Sustain the ability of the Fire Department to respond to emergencies.

Action A: Prepare, adopt, and maintain standards of coverage for the Fire Department.

Action B: Maintain a fire-related GIS database to assist decision-makers with analyzing development proposals and to assist with fire response and planning. Update the database as new fire hazard severity maps become available.

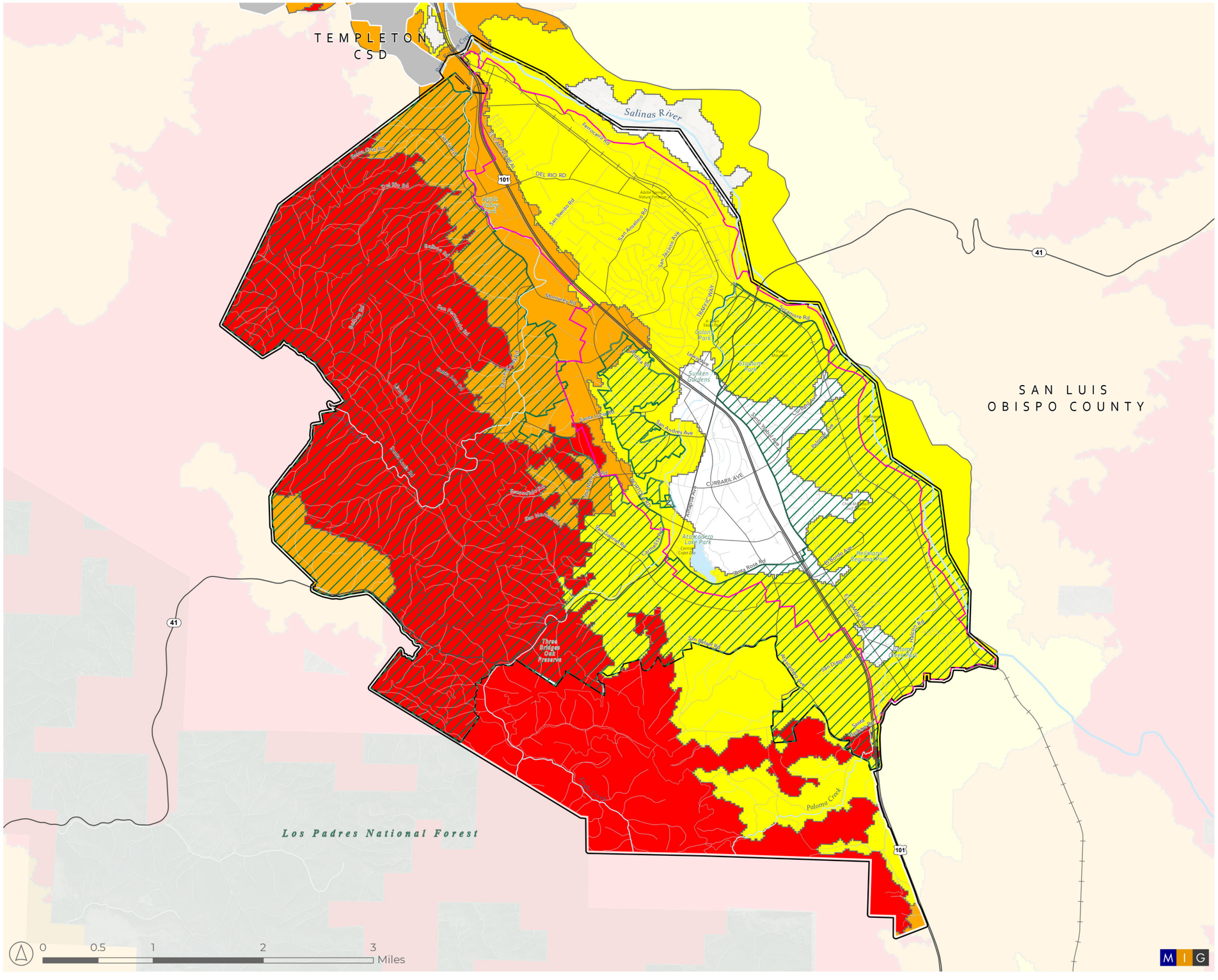


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Figure 9-1
Wildfire Risk

Basemap Features
- Atascadero Planning Area
- Atascadero City Limit
- Urban Services Line
- Creeks, Drainages, Rivers, and Waterbodies

Wildland Urban Interface (WUI)
- WUI

Local Responsibility Area FHSZ - Updated March 9, 2025

Fire Hazard Severity Zone
- Very High
- High
- Moderate
- NonWildland

State Responsibility Area FHSZ - Data Effective April 1, 2024

Fire Hazard Severity Zone
- Very High
- High
- Moderate

Source(s): Esri, USDA, CADOT, CNRA, County of San Luis Obispo Open Data, City of Atascadero, 2024.

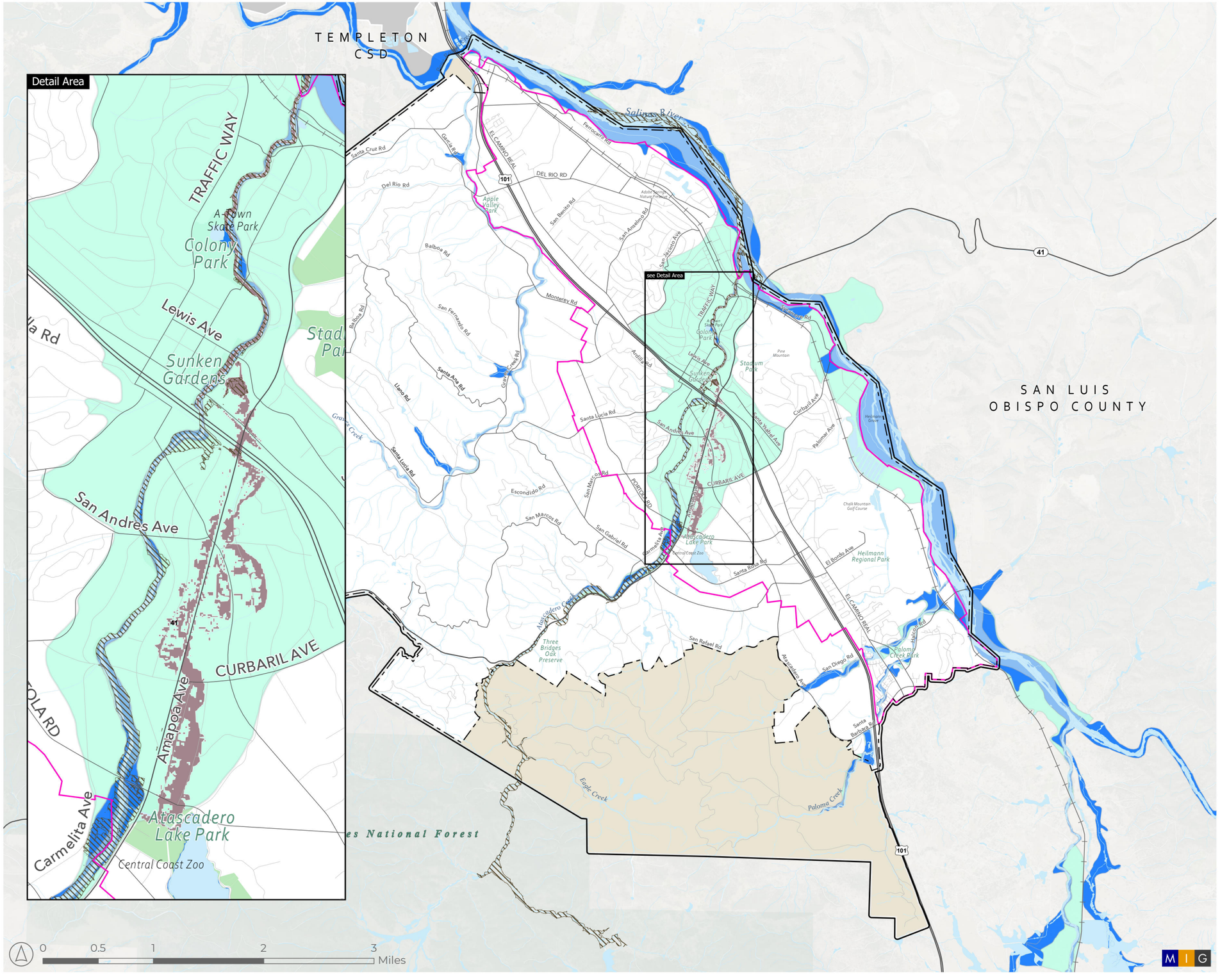

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Figure 9-2

Flood Zones

Basemap Features

- Atascadero Planning Area
- Atascadero City Limit
- Urban Services Line
- Sphere of Influence
- Creeks, Drainages, Rivers, and Waterbodies
- Parks + Open Space

FEMA Flood Zones

- 100-Year Floodplain (1% Annual Chance Flood Hazard)
- 500-Year Floodplain (0.2% Annual Chance Flood Hazard)
- Regulatory Floodway

Dam Inundation Areas

- Atascadero Lake (>1 foot)
- Eagle Creek

Source(s): Esri, USDA, CADOT, CNRA, County of San Luis Obispo Open Data, City of Atascadero, 2024.

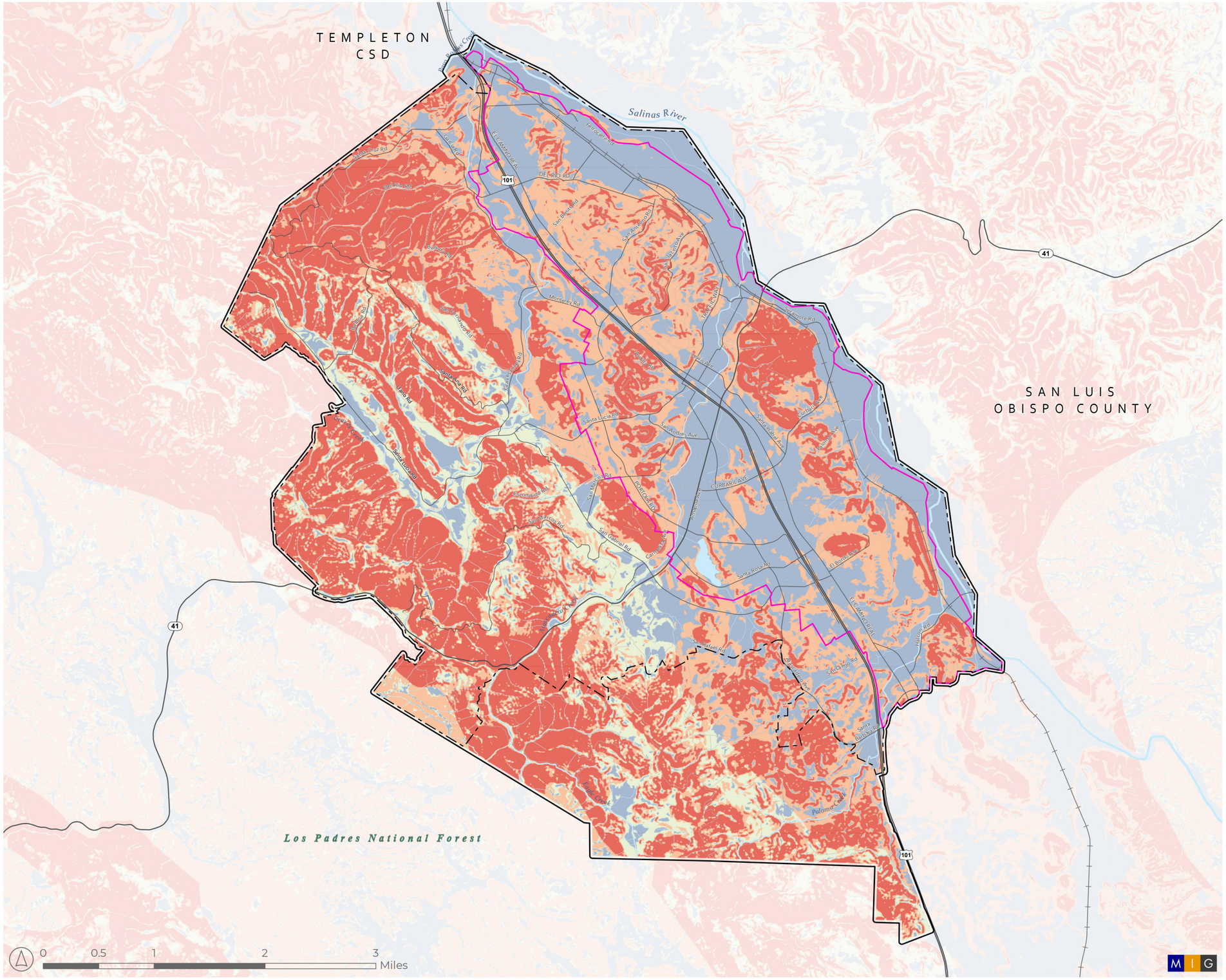

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Figure 9-3

Landslide Susceptibility

Basemap Features

- Atascadero Planning Area
- Atascadero City Limit
- Urban Services Line
- Creeks, Drainages, Rivers, and Waterbodies

Landslide Susceptibility

- Low (0-3)
- Moderate (4-6)
- High (7-8)
- Very High (9-10)

Source(s): Esri, USDA, CADOT, CNRA, County of San Luis Obispo Open Data, City of Atascadero, 2024.

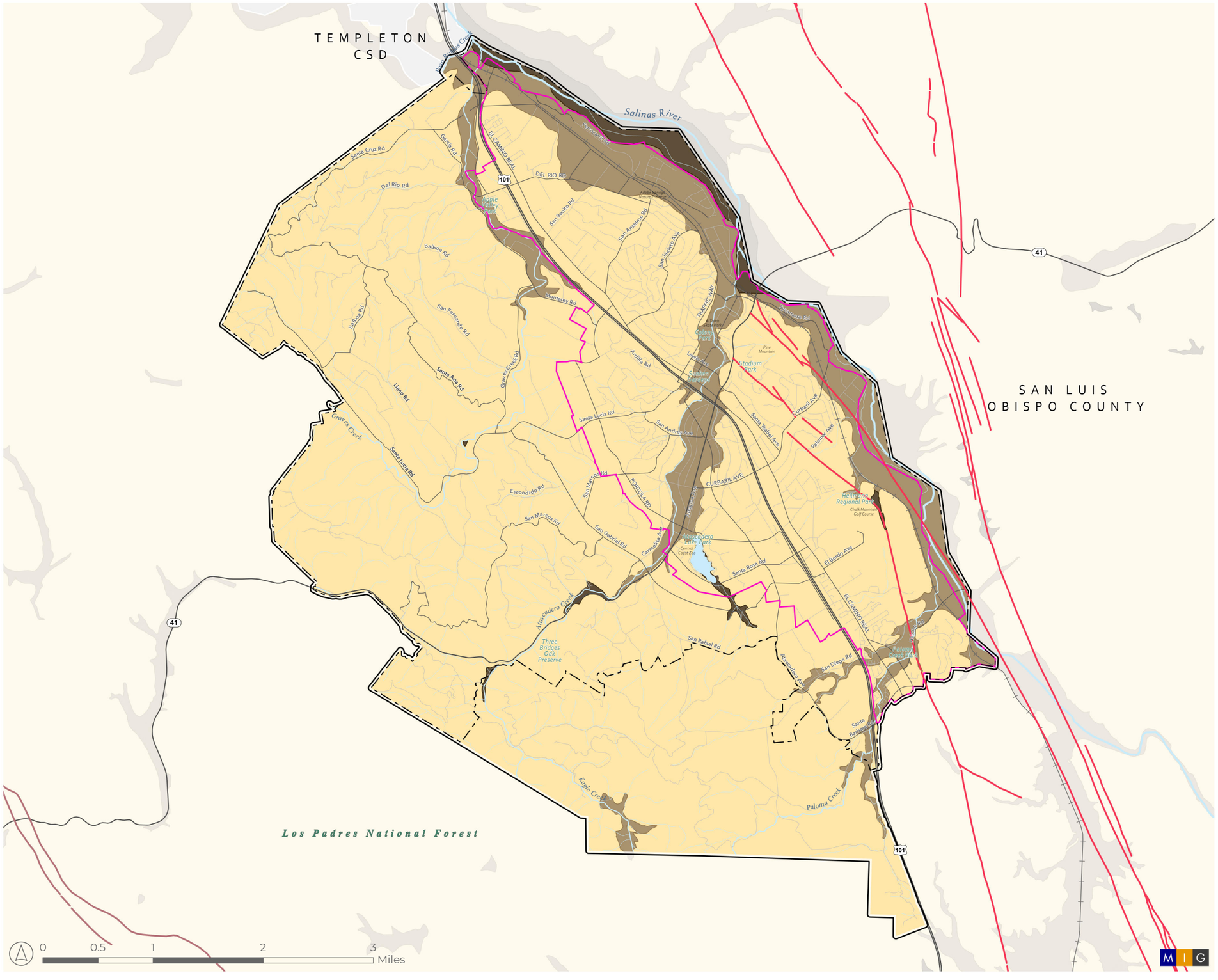

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Figure 9-4

Fault Lines and Liquefaction Risk

Basemap Features

- Atascadero Planning Area
- Atascadero City Limit
- Urban Services Line
- Sphere of Influence
- Creeks, Drainages, Rivers, and Waterbodies
- Parks + Open Space

US Quaternary Faults

- Oceanic fault zone
- Rinconada fault zone

Liquefaction Risk

- Low Potential
- Moderate Potential
- High Potential

Source(s): Esri, USDA, CADOT, CNRA, County of San Luis Obispo Open Data, City of Atascadero, 2024.



Glossary

A

Access: A way of approaching or entering a property, including ingress (the right to enter) and egress (the right to leave).

Accessory Dwelling Unit: A dwelling unit that is subordinate to and on the same lot or parcel of property as another single dwelling unit, and as governed by State Law.

Acreage, Gross: The total land area in acres within a defined boundary, including any area for rights-of-way, public streets, and dedications of land for public easements.

Acreage, Net: That portion of gross acreage exclusive of public streets and rights-of-way and dedications of land for public uses.

Active Transportation: Forms of transportation involving physical activity, such as walking and cycling.

Adaptive Use/Reuse: The process of converting a building to a use other than that for which it was originally designed and/or built.

Affordable Housing: Under State and Federal statutes, generally housing that costs no more than 30 percent of gross household income. Housing costs include rent or mortgage payments, utilities, taxes, insurance, homeowner association fees, and other related costs.

Air Pollutants: Amounts of foreign and/or natural substances occurring in the atmosphere that may result in adverse effects on humans, animals, vegetation, and/or materials.

Air Quality Standards: The prescribed (by the Environmental Protection Agency and the California Air Resources Board) level of pollutants in the outside air that cannot be exceeded legally during a specified time in a specified geographical area.

Alternate Fuel: Fuels such as methanol, ethanol, natural gas, and liquid gases that are cleaner burning and help to meet the Air Resources Board's mobile and stationary emission standards.

Ambient Noise Level: The level of noise that is all-encompassing within a given environment for which a single source cannot be determined. It is usually a composite of sounds from many and varied sources near to and far from the receiver.

Annexation: The incorporation of a land area into an existing city with a resulting change in the boundaries of that city.

Average Daily Trips (ADT): Average daily trips made by vehicles in a 24-hour period.

A-Weighted Decibel (dBA): A numerical method of rating human judgment of loudness. The A-weighted scale reduces the effects of low and high frequencies to simulate human hearing.

B

Bike Lane: A corridor expressly reserved by markings for bicycles existing on a street or roadway in addition to any lanes for use by motorized vehicles (Class II Bikeway).

Bike Path: A paved route distinct from a street or roadway and expressly reserved for bicycles. Bike paths may parallel roads but typically are separated from them (Class I Bikeway).

Bike Route: A bicycle facility shared with motorists and identified by signs or pavement marking symbols. A bike route does not have lane stripes (Class III Bikeway).

Bikeways: A term that encompasses bicycle lanes, bicycle paths, and bicycle routes.

Buffer: Land and/or improvement designated to protect one type of land use from another where there could be compatibility issues. Where a commercial district or agricultural use abuts a residential district, for example, additional use, yard, or height restrictions may be imposed to protect residential properties. The term may also be used to describe any zone that separates two unlike zones such as a multiunit housing zone between single-unit housing and commercial uses.

Bulbout: A curb extension intended to slow the speed of traffic and increase driver awareness, particularly in residential neighborhoods. They also allow pedestrians and vehicle drivers to see each other when vehicles parked in a parking lane would otherwise block visibility.

C

California Building Code: A standard building code that sets minimum standards for construction. The California Building Code is outlined in Title 24 of the California Code of Regulations and includes the Uniform Plumbing Code, Uniform Mechanical Code, National Electric Code, California Fire Code, and the California Energy Code.

California Department of Housing and Community Development (HCD): The State department responsible for administering State-sponsored housing programs and for reviewing housing elements to determine compliance with State housing law.

California Environmental Quality Act (CEQA): A State law enacted in 1971 that requires governmental agencies at all levels to consider and publicly disclose the impact proposed projects have on the environment, including cultural resource impacts.

California Register of Historical Resources: A listing of archaeological and historic resources that meet the criteria for designation on the State register.

California Department of Transportation (Caltrans): California agency whose mission is to improve mobility across the State. It manages the State highway system and is actively involved with public transportation systems within the State.

Capital Improvement Program (CIP): A proposed timetable or schedule of future capital improvements (i.e., government acquisition of real property, major construction project, or acquisition of long lasting, expensive equipment) to be carried out during a specific period, together with cost estimates and the anticipated means of financing each project.

Census: An official enumeration of the population, with details as to age, sex, occupation, etc. conducted by the federal government.

Child Care: Care, control, supervision, or maintenance of a child provided for compensation by an individual, other than a parent, for fewer than 24 hours in a day.

City: City, with a capital "C," generally refers to the government or administration of the City of Atascadero. City, with a lower case "c," may mean any city or the general boundaries of Atascadero.

Climate Change: Climate change refers to any significant change in measures of climate (such as temperature, precipitation or wind) lasting for an extended period (decades or longer). Climate change may result from: 1) natural factors, such as changes in the sun's intensity or slow changes in the Earth's orbit around the sun, 2) natural processes within the climate system (e.g., changes in ocean circulation), or 3) human activities that change the atmosphere's composition

(e.g., through burning fossil fuels) and the land surface (e.g., deforestation, reforestation, urbanization and desertification)

Commercial Recreation Use: A privately owned or operated use providing facilities, typically for indoor recreation activities.

Community Noise Equivalent Level (CNEL): The noise metric adopted by the State of California for evaluating airport noise. It represents the average daytime noise level during a 24-hour day, adjusted to an equivalent level to account for the lower tolerance of people to noise during evening and nighttime periods relative to the daytime period.

Compatibility: The characteristics of different uses or activities that permit them to be located near each other in harmony and without conflict. The designation of permitted and conditionally permitted uses in zoning districts is intended to achieve compatibility within the district. Some elements affecting compatibility include: intensity of occupancy as measured by dwelling units per acre; pedestrian or vehicular traffic generated; volume of goods handled; and such environmental effects as noise, vibration, glare, air pollution, or the presence of hazardous materials. On the other hand, many aspects of compatibility are based on personal preference and are much harder to measure quantitatively, at least for regulatory purposes.

Complete Streets: A comprehensive approach to the practice and related policies of mobility planning. The complete street concept recognizes that transportation corridors have multiple users with different abilities and mode preferences (e.g., pedestrians, bicyclists, transit riders, and drivers) that need to be accounted for.

Composting: The controlled microbial decomposition of organic matter (such as food scraps and yard trimmings) in the presence of oxygen into a humus- or soil-like material.

Condominium: An estate in real property consisting of an undivided interest in common in a portion of a parcel in real property, together with a separate interest in airspace in a residential, industrial, or commercial building on such real property such as an apartment, office, or store.

Conservation: The management of natural resources to prevent waste, destruction, or neglect.

Corridor: Major commercial or mix-use streets that connect centers and neighborhoods and have their own identity.

Coverage: The proportion of the area of the footprint of a building in relation to the area of the lot on which it stands.

D

Day-Night Average Sound Level (Ldn): The A-weighted average sound level for a given area (measured in decibels) during a 24-hour period with a 10-dB weighting applied to night-time sound levels. The Ldn is approximately numerically equal to the CNEL for most environmental settings.

dBA: The "A-weighted" scale for measuring sound in decibels; weighs or reduces the effects of low and high frequencies to simulate human hearing. Every increase of 10 dBA doubles the perceived loudness though the noise is actually 10 times more intense.

Decibel (dB): A unit measuring the magnitude of a sound, equal to the logarithm of the ratio of the intensity of the sound to the intensity of an arbitrarily chosen standard sound, specifically a sound just barely audible to an unimpaired human ear. For environmental noise from aircraft and other transportation sources, an A-weighted sound level (abbreviated dBA) is normally used. The A-weighting scale adjusts the values of different sound frequencies to approximate the auditory sensitivity of the human ear.

Density: The number of dwelling units per unit of land. The City of Atascadero 2045 General Plan refers to density in terms of dwelling units per acre (du/ac).

Density Bonus: The allocation of development rights as required by State law that allows a parcel to be developed at a higher residential density than the maximum for which the parcel is designated in exchange for the provision of a certain percentage of those units as affordable.

Developer: An individual or business that prepares raw land for the construction of buildings or causes to be built physical building space for use primarily by others, and in which the preparation of the land or the creation of the building space is in itself a business and is not incidental to another business or activity.

Development: Development is generally defined as any human-caused change to improved or unimproved real estate that requires a permit or approval from the City.

Development Agreement: A contractual agreement between a developer and the City that clearly establishes the developer's responsibility to provide a certain type of development, streets, and sewer improvements, and any other mutually agreed to terms and responsibilities as a precondition for securing the right to develop.

Development Impact Fee: A fee or charge imposed on developers to pay for a jurisdiction's costs of providing infrastructure for new development.

Director: Otherwise known as Community Development Director. This staff position oversees the operations and staffing of the Community Development Department and assigned authority over certain determinations, decisions, and approvals as specified in the Municipal Code, General Plan, and other state and municipal policies.

Diversity: The variation among a particular group of things or people; for example, various social and cultural identities among people existing together.

Drought: An extended period of months or years when a region notes a deficiency in its water supply. Generally, this occurs when a region receives consistently below average precipitation.

Dwelling Unit: A structure or portion of a structure used exclusively for human habitation.

Dwelling Unit per Acre (du/ac): Number of dwelling units per one acre of land; denotes residential density.

E

Easement: A recorded right or interest in the land that belongs to someone else, and which entitles the holder to some use, privilege, or benefit out of or over said land.

Ecosystem: A naturally occurring assemblage of organisms (plant, animal, and other living organisms) living together with their environment, functioning as a loose unit; also referred to as a biotic community.

Emergency Shelter: A facility that provides temporary overnight shelter for persons with no permanent housing. Such facilities may offer services to meet basic needs such as food, clothing, and limited medical care.

Encourage: A less rigid directive to be honored in the absence of compelling or contravening considerations. Encourage communicates a clear commitment that permits flexibility if circumstances so dictate.

Endangered Species: A species of animal or plant is considered to be endangered when its prospects for survival and reproduction are in immediate jeopardy from one or more causes.

Energy Conservation: Reduction or elimination of unnecessary energy use and waste.

Entitlement: A permit granted to a landowner or other authorized party giving it the right to establish a land use or improve a property. Such right is usually expressed in terms of a use and intensity allowed under a development agreement, subdivision or tract map, use permit, variance, building permit, or other similar permit. For example, an entitlement may specify the maximum number of residential dwelling units permitted on a site or the maximum square footage of non-residential development permitted on a site.

Environmental Impact Report (EIR): A report required pursuant to the California Environmental Quality Act when environmental impacts are determined to be potentially significant. The report assesses all the environmental characteristics of an area, determines what effects or impacts will result if the area is altered or disturbed by a proposed action, and identifies alternatives or other measures to avoid or reduce those impacts.

Environmental Protection Agency (EPA): The United States agency charged with setting policy and guidelines and carrying out legal mandates for the protection of national interests in environmental resources.

Erosion: The loosening and transportation of rock and soil debris by wind, rain, or running water; or the gradual wearing away of the upper layers of the Earth.

F

Fair Market Rent (FMR): Freely set rental rates defined by HUD as the median gross rents charged for available standard units in a county or Standard Metropolitan Statistical Area (SMSA). Fair Market Rents are used for the Section 8 Rental Program and many other HUD programs and are published annually by HUD.

Fault: A fracture in the Earth's crust forming a boundary between rock masses that have shifted.

Fiber Optic Cable: High-speed data transmission medium that uses cables to transmit digital data.

Floodplain: A lowland or relatively flat area adjoining the banks of a river or stream which is subject to a one percent or greater chance or flooding in any given year (i.e., 100-year flood).

G

Gateway: A point along a roadway entering a city or county at which a visitor, resident, or local worker gains a sense of having left the previous environs and of having entered a new place.

Goal: The ultimate purpose of an effort stated in a way that is general in nature and immeasurable; a broad statement of intended direction and purpose.

Governance: The persons, boards, commissions, committees, councils, and/or departments who make up a body for the purpose of administering city government.

Grade: The vertical location of the ground surface.

Grading: Any excavating, filling of land, or combination thereof.

Greenhouse Gases: Gases in the Earth's atmosphere that produce the greenhouse effect. Changes in the concentration of certain greenhouse gases, due to human activity such as fossil fuel burning, increase the risk of global climate change. Greenhouse gases include carbon dioxide, methane, nitrous oxide, halogenated fluorocarbons, ozone, perfluorinated carbons, and hydro fluorocarbons.

Ground Failure: Mudslide, landslide, liquefaction, or the compaction of soils due to ground shaking from an earthquake.

Ground Shaking: Ground movement resulting from the transmission of seismic waves during an earthquake.

Groundwater: The supply of fresh water under the ground surface in an aquifer or soil that forms a natural reservoir.

Groundwater Recharge: The natural process of infiltration and percolation of rainwater from land areas or streams through permeable soils into water-holding rocks that provide underground storage (aquifers).

H

Habitat: The physical location or type of environment in which an organism or biological population lives or occurs.

Hazardous Materials: An injurious substance, including pesticides, herbicides, toxic metals and chemicals, liquefied gases.

Historic: A historic building or site is one that is noteworthy for its significance in local, State, or national history or culture, its architecture or design, or its works of art, memorabilia, or artifacts.

Historic Context: A narrative description of the broad patterns of historical development in a community or its region that is represented by cultural resources. A historic context statement is organized by themes such as economic, residential, and commercial development.

Historic District: A district, geographical area, or neighborhood containing a collection of residential and/or commercial historical buildings which generally represents a significant aspect of the community's architectural and/or development history, and has been designated by the City Council.

Historic Resource: A general term that refers to buildings, areas, districts, streets, sites, places, structures, outdoor works of art, natural or agricultural features, and other objects having a special historical, cultural, archaeological, architectural, community, or aesthetic value, and are usually 50 years of age or older.

Household: According to the U.S. Census, a household is all persons living in a dwelling unit, whether or not they are related. Both a single person living in an apartment and a family living in a house are considered households.

Household Income: The total income of all the people living in a household. Households are usually described as very low income, low income, moderate income, and above moderate income for that household size, based on their position relative to the county median income.

Housing Unit: A room or group of rooms used by one or more individuals living separately from others in the structure, with direct access to the outside or to a public hall and containing separate toilet and kitchen facilities.

Department of Housing and Urban Development (HUD): The United States federal department that administers federal programs dealing with better housing and urban renewal.

I

Impervious surfaces: Structures or installed surface materials—such as pavements (roads, sidewalks, driveways and parking lots) that are covered by impenetrable materials.

Implementation: An action, procedure, program, or technique that carries out General Plan policy.

Improvement: As defined the Atascadero Municipal Code, is any building, structure, place, parking facility, fence, gate, wall, work of art, or other object constituting a physical betterment of real property, or any part of such betterment.

Income Category: Four categories are used to classify a household according to income based on the median income for the county. Under State housing statutes, these categories are defined as follows: Very Low (0-50% of county median); Low (51-80% of county median); Moderate (81-120% of county median); and Above Moderate (over 120% of county median).

Industrial: The manufacture, production, and processing of consumer goods. Industrial is often divided into "heavy industrial" uses, such as construction yards, quarrying, and factories; and "light industrial" uses, which are generally indoor uses such as research and development and less intensive warehousing and manufacturing.

Infill Development: Development that occurs on or within an existing urban framework on: 1) vacant land (usually individual lots or previously passed-over properties) or 2) land that has been previously developed within areas that are already largely developed.

Infrastructure: The physical systems and services which support development and population, such as roadways, railroads, water, sewer, natural gas, electrical generation and transmission, telephone, cable television, storm drainage, and others.

Institutional Uses: Publicly or privately owned and operated activities such as hospitals, convalescent hospitals, intermediate care facilities, nursing homes, museums, and schools and colleges; churches and other religious organizations; and other nonprofit activities of a welfare, educational, or philanthropic nature that cannot be considered residential, commercial, or industrial

Intensity: A measure of the amount or level of development often expressed as the ratio of building floor area to lot area (floor area ratio) for commercial, business, and industrial development, or dwelling units per acre of land for residential development (also called "density"). For the purposes of this General Plan, the intensity of nonresidential development is described in terms of floor-area ratio (FAR).

Interagency: Indicates consultation between or among two or more discrete agencies in regard to a specific program.

Intersection: Where two or more roads cross at grade.

J

Jurisdiction: The territory over which authority to govern is exercised

K

Reserved

L

Landmark: A site (including significant trees or other significant permanent landscaping located on a site), place, building, structure, street, improvement, street furniture, sign, work of art, natural feature, or other object representative of the historical, archaeological, cultural, architectural, community, aesthetic, or artistic heritage of the city.

Landscaping: Planting, including but not limited to, trees, shrubs, and ground covers which are suitably designed, selected, installed, and maintained to enhance a site or right-of-way.

Land Use: A description of how land is occupied or used.

Land Use Plan: A plan showing the allowed location, extent, and intensity of development of land to be used in the future for varying types of residential, commercial, industrial, agricultural, recreational, and other public and private purposes or combination of purposes.

Landslide: A general term for a falling or sliding mass of soil or rocks.

Lateral Spread: Refers to landslides that commonly form on gentle slopes and that have rapid fluid-like flow movement, like water.

Level of Service (LOS) Standard: One standard used by government agencies to measure the quality or effectiveness of a municipal service such as police, fire, or library, or the performance of a facility, such as a street or highway.

Light Pollution: Excessive or obtrusive artificial light.

Liquefaction: A process by which water saturated granular soils transform from a solid to a liquid state due to groundshaking. This phenomenon usually results from shaking from energy waves released in an earthquake.

Live/Work Unit: A land use that combines residential units with commercial spaces, typically in which the resident uses the workspace for his or her own business.

Local Agency Formation Commission (LAFCO): A five- or seven- member commission within each county that reviews and evaluates all proposals for formation of special districts, incorporation of cities, annexation to special districts or cities, consolidation of districts, and merger of districts with cities. Each county's LAFCO is empowered to approve, disapprove, or conditionally approve such proposals.

Local Street: A street providing direct access to properties and not designed for through traffic.

Lot: A legally recognized parcel of land

Low Impact Development: Development that uses or mimic natural processes that result in the infiltration, evapotranspiration or use of stormwater to protect water quality and associated aquatic habitat.

M

Market-Rate Housing: Housing available on the open market without any subsidy. The price for housing is determined by the market forces of supply and demand and varies by location.

Mass Communication System: A system to impart or exchange information on a large scale to a wide range of people.

Median Income: The annual income for each household size within a region is defined annually by HUD. Half of the households in the region have incomes above the median and half have incomes below the median.

Mitigate: To ameliorate, alleviate, or avoid to the extent reasonably feasible.

Mixed Use: A combination of residential and compatible commercial uses on a site that can be integrated horizontally or vertically as defined by their specific Placetype and zoning standards.

Mobile Sources: Sources of air pollution such as automobiles, motorcycles, trucks, off-road vehicles, boats, and airplanes.

Monitor: A commitment to keep track of.

Multi-Generational: Of or relating to several generations.

Multimodal: The utilization of a variety of available modes of travel that enhance the movement of people and goods, including, but not limited to, highway, transit, nonmotorized, and demand management strategies including, but not limited to, telecommuting. The availability and practicality of specific multimodal systems, projects, and strategies may vary by county and region in accordance with the size and complexity of different urbanized areas. (Government Code §65088)

Municipal Services: Services traditionally provided by local government, including water and sewer, roads, parks, schools, and police and fire protection.

Mutual Aid Agreement: An agreement among emergency responders to lend assistance across jurisdictional boundaries.

N

National Flood Insurance Program: A federal program which authorizes the sale of federally subsidized flood insurance in communities where such flood insurance is not available privately.

National Pollutant Discharge Elimination System (NPDES): As authorized by the Clean Water Act, the National Pollutant Discharge Elimination System (NPDES) permit program controls

water pollution by regulating point sources that discharge pollutants into waters of the United States. The State Water Resources Control Board issues permits to jurisdictions with the objectives to attain and protect the beneficial uses of water bodies in the State; reduce pollutants in stormwater to the maximum extent practicable; and to evaluate compliance with the objectives and requirements contained in the permit.

National Register of Historic Places: The nation's official list of districts, sites, buildings, structures, and objects significant in national, regional or local American history, architecture, archaeology, and culture, maintained by the U.S. Secretary of the Interior.

Neighborhood: A geographically localized community within Atascadero.

Neighborhood Context: The background and surrounding information that enhances understanding of a particular neighborhood.

Neighborhood Park: City- or county-owned land intended to serve the recreation needs of people living or working in proximity to the park.

Noise: Sound that is discernible to the human ear. Excessive noise is any sound which exceeds the appropriate actual or presumed ambient noise level which annoys or tends to disturb humans, or which causes or tends to cause an adverse psychological or physiological effect on humans.

Noise Contours: Continuous lines of equal noise level usually drawn around a noise source, such as an airport or highway. The lines are generally drawn in five-decibel increments so that they resemble elevation contours in topographic maps.

Nonconforming Use: An established use of a building or land which may have been legally initiated but which does not conform to the present code because of subsequent changes in land use regulations.

O

Open Space: Any parcel or area of land or water that is essentially unimproved and devoted to an open-space use as defined in this section, and that is designated on a local, regional or state open-space plan as any of the following:

- Open space for the preservation of natural resources including, but not limited to, areas identified for the preservation of plant and animal life, including habitat for fish and wildlife species.
- Open space used for the managed production of resources, including but not limited to, forest lands, rangeland, agricultural lands and areas of economic importance for the production of food or fiber; and areas required for recharge of groundwater basins.

- Open space for outdoor recreation purposes, and areas which serve as links between major recreation and open-space reservations.
- Open space for public health and safety, including, but not limited to, areas which require special management or regulation because of hazardous or special conditions such as earthquake fault zones, unstable soil areas, floodplains, watersheds, areas presenting high fire risks, areas required for the protection of water quality and water reservoirs and areas required for the protection and enhancement of air quality.

Optimize: A commitment to make as effective and useful as possible or to plan or carryout with maximum efficiency.

Ordinance: A law or regulation set forth and adopted by a governmental authority, usually a city or county.

Outdoor Recreation Use: A privately or publicly owned or operated use providing facilities for outdoor recreation activities.

Overlay: A land use designation or a zoning designation that modifies the basic underlying designation in some specific manner.

P

Parcel: The basic unit of land entitlement. A designated area of land established by plat, subdivision, or otherwise legally defined and permitted to be used or built upon.

Park: Land that is publicly owned or controlled for providing parks, recreation, or open space for public use.

Parking (public): An open area, excluding a street or other public way, used for the parking of automobiles and available to the public, whether for free or for compensation.

Parking Management: A system designed and carried out to obtain maximum utilization from a limited number of parking spaces.

Participate: A directive to take or have a part or share with others in a program or group effort.

Particulate Matter (PM_{10}): Particulate matter less than 10 microns in size. A major air pollutant consisting of tiny solid or liquid particles of soot, dust, smoke, fumes and aerosols.

Placetype: A system for classifying and designating the appropriate use of properties.

Planning Area: The Planning Area is the land areas addressed by the General Plan. For a city, the Planning Area boundary typically coincides with the sphere of influence and encompasses land both within the City limits and potentially annexable land.

Planning Commission: A decision making body, created by the City in compliance with California law (Government Code Section 65100 et seq.).

Policy, General Plan: Statement guiding action and implying clear commitment found within each element of the General Plan.

Pollution: The presence of matter or energy whose nature, location, or quantity produces undesired environmental effects.

Pollution, Non-Point: Sources for pollution that are less definable and usually cover broad areas of land, such as agricultural land with fertilizers that are carried from the land by runoff, or automobiles.

Pollution, Point: In reference to water quality, a discrete source from which pollution is generated before it enters receiving waters, such as a sewer outfall, a smokestack, or an industrial waste pipe.

Potable Water: Water that is of sufficiently high quality so that it can be consumed or used without risk of immediate or long-term harm.

Private: Of or concerning a particular person or group; not owned by a government body.

Program: A coordinated set of specific measures and actions (e.g., zoning, subdivision procedures, and capital expenditures) the local government intends to use in carrying out the policies of the General Plan.

Public: Of the people as a whole, or for the use and benefit of all.

Public and Quasi-Public Facilities: Institutional, academic, governmental and community service uses, either owned publicly or operated by non-profit organizations, including private hospitals and cemeteries.

Public Services: See "Municipal Services."

Public Space: Land or structures that are open to anyone; may include public or private property; also referred to as "public realm."

Q

Reserved

R

Recycling: The act of processing used or abandoned materials for use in creating new product.

Recycled Water: Former wastewater (sewage) that has been treated to remove solids and certain impurities, and then allowed to recharge the aquifer rather than being discharged to surface water. This recharging is often done by using the treated wastewater for irrigation.

Redevelop: To demolish existing buildings, increase the overall floor area existing on a property, or both, irrespective of whether a change occurs in land use.

Regional: Pertaining to activities or economies at a scale greater than that of a single jurisdiction and affecting a broader area.

Regional Housing Needs Allocation (RHNA): The Regional Housing Needs Allocation is based on State of California projections of population growth and housing unit demand and assigns a share of the region's future housing need to each jurisdiction in the State. These housing need numbers serve as the basis for the update of the housing element in each California city and county.

Rehabilitation: The upgrading of a building in previously dilapidated or substandard condition for human habitation or use.

Renewable Energy: The term renewable energy generally refers to electricity supplied from renewable energy sources, such as wind and solar power, geothermal, hydropower and various forms of biomass. These energy sources are considered renewable sources because their fuel sources are continuously replenished.

Retrofit: To add materials and/or devices to an existing building or system to improve its operation or efficiency.

Rezoning: An amendment to the map and/or text of a zoning code to effect a change in the nature, density, or intensity of uses allowed in a zoning district and/or on a designated parcel or land area.

Right-of-Way: Any place which is dedicated to use by the public for pedestrian and vehicular travel. A right-of-way may include, but is not limited to, a street, sidewalk, curb, and gutter. A right-of-way may be a crossing, intersection, parkway, median, highway, alley, lane, mall, court, way, avenue, boulevard, road, roadway, railway, viaduct, subway, tunnel, bridge, thoroughfare, park square, or other similar public way.

Riparian: Relating to or living on or located on the bank of bodies or courses of water.

S

San Luis Obispo Council of Governments (SLOCOG): A regional planning agency, or any successor agency, incorporating various local governments in San Luis Obispo County in California. It deals with regional land use, housing, environmental quality, and economic development.

Sanitary Sewer: A system of subterranean conduits that carries refuse liquids or waste matter to a plant where the sewage is treated, as contrasted with storm drainage systems (that carry surface water) and septic tanks or leach fields (that hold refuse liquids and waste matter on site).

Scenic Highway/Scenic Route: A highway, road, drive, or street that, in addition to its transportation function, provides opportunities for the enjoyment of natural and human-made

scenic resources and access or direct views to areas or scenes of exceptional beauty or historic or cultural interest.

Seismic: Caused by or subject to earthquakes or Earth vibrations.

Sensitive Species: Includes those plant and animal species considered threatened or endangered by the U.S. Fish and Wildlife Service and/or the California Department of Fish and Game, according to Section 3 of the Federal Endangered Species Act.

Setback: The distance from a defined point of line governing the placement of buildings, structures, parking, or uses on a lot.

Sewer: Any pipe or conduit used to collect and carry away wastewater from the generating source to a treatment plant or discharge outfall.

Specific Plan: A tool authorized by Government Code Section 65450 et seq. for the systematic implementation of the General Plan for a defined portion of a community's planning area. A specific plan must specify in detail the land uses, public and private facilities needed to support the land uses, phasing of development and use of natural resources, and a program of implementation measures, including financing measures.

Soil: Naturally occurring superficial deposits overlying bedrock.

Solar Energy: Energy from the sun that is converted into thermal or electrical energy.

Solid Waste: All solid, semi-solid, and liquid wastes, including garbage, trash, refuse, paper, rubbish, ashes, industrial wastes, demolition and construction wastes, abandoned vehicles and parts thereof, discarded home and industrial appliances, dewatered, treated, or chemically fixed sewage sludge which is not hazardous waste, manure, vegetable of animal solid and semi-solid wastes, and other discarded solid and semisolid waste.

Sphere of Influence: The probable physical boundaries and service area of a local government agency as determined by the San Luis Obispo Local Agency Formation Commission (LAFCo).

Standards: (1) A rule or measure establishing a level of quality or quantity that must be complied with or satisfied. The California Government Code (Section 65302) requires that General Plans describe "standards." (2) Requirements in a Zoning Code that govern building and development as distinguished from use restrictions; for example, site design regulations such as lot area, height limit, frontage, landscaping, and floor area ratio.

State Historical Building Code (SHBC): State of California, Title 24, Building Standards, Part 8, which regulates control and allows alternatives to any and all prevailing codes when dealing with qualified historic buildings and structures.

Stationary Sources: Nonmobile sources such as power plants, refineries, and manufacturing facilities which emit air pollutants.

Stormwater Runoff: Stormwater from city streets and adjacent domestic or commercial properties that carries pollutants of various kinds into the sewer systems and receiving waters.

Streetscape: The visual elements of a street, including the road, adjoining buildings, sidewalks, street furniture, trees and open spaces, etc. that combine to form the street's character.

Structure: Anything constructed or erected that requires location on the ground or attachment to something having location on the ground, including swimming pools, but excluding driveways, sidewalks, patios, or parking spaces.

Subdivision: The division of any improved or unimproved legal lot of record

Subsidence: The sinking or downward settling and compaction of soil and other surface material with little or no horizontal motion. Subsidence may be caused by a variety of human and natural activity, including earthquakes.

Subsidize: To assist by payment of a sum of money or by the granting of terms or fee reductions that reduce the need for monetary expenditures.

Substandard Housing: Residential dwellings that, because of their physical condition, do not provide safe and sanitary housing (i.e., does not provide shelter, endangers the health, safety or well-being of occupants). Jurisdictions may adopt more stringent local definitions of substandard housing.

Sustainability: The ability for the city and citizens of Atascadero to meet the needs of the present economy, society, and environment while preserving the ability of future generations to meet their needs.

T

Tenure: Refers to the distinction between owner-occupied and renter-occupied housing units.

Topography: Configuration of a surface, including its relief and the position of natural and human-made features.

Townhouse: A dwelling unit occupying its own lot but which is physically attached to at least one other dwelling unit.

Traffic Calming: The combination of policies and measures that reduce the negative effects of motorized vehicle use by improving livability in the surrounding neighborhood. With traffic calming, accessibility and mobility are not reduced; they are modified to fit needs of neighborhood. Traffic calming achieves this by modifying the design of streets to serve a broad range of transportation, social, and environmental purposes.

Transit: A system of regularly scheduled buses and/or trains available to the public on a fee-per-ride basis. Also called mass transit.

Transmission Line: An interconnected group of electric lines located on poles or underground which transfer energy, in bulk, between points of supply and points of delivery.

Transportation Demand Management (TDM): A strategy for reducing demand on the road system by reducing the number of vehicles using the roadways and/or increasing the number of persons per vehicle. TDM attempts to reduce the number of persons who drive alone on the roadway during the commute period and to increase the number in carpools, vanpools, buses and trains, walking, and biking.

Trees, Street: Trees strategically planted—usually in parkway strips, medians, or along streets-to enhance the visual quality of a street.

Trip: A one-way journey that proceeds from an origin to a destination via a single mode of transportation; the smallest unit of movement considered in transportation studies. Each trip has one "production end" (or origin) and one "attraction end" (destination).

U

Undergrounding Utilities: The process of transferring overhead utilities into underground facilities

Unincorporated Area: A region of land that is not governed by a local municipality such as a city, but are under the jurisdiction of the county.

Urban Forest: The community forest includes street trees, open green spaces, undeveloped land, and parks, along with other public and private spaces within urban areas.

Urban Form: Urban form addresses the relationship between building facades and the public realm, the form and mass of buildings in relation to one another, and the scale and types of streets and blocks.

V

Vacant: Lands or buildings that are not actively used for any purpose.

Vehicle Miles Traveled (VMT): The total distance traveled in miles by all motor vehicles of a specific group within a given area at a given time.

Viewshed: The area within view from a defined observation point.

W

Walkable: A measure of how friendly an area is for pedestrians. Factors affecting walkability include, but are not limited to, land use mix; street connectivity; residential density (residential units per area of residential use); "transparency" which includes amount of glass in windows and doors, as well as orientation and proximity of homes and buildings to watch over the street; plenty of places to go to near the majority of homes; placemaking, street designs that work for

people, not just cars; and nonresidential floor area ratio. Major infrastructural factors include access to mass transit, presence and quality walkways, buffers to moving traffic (planter strips, on-street parking, or bike lanes) and pedestrian crossings, aesthetics, nearby local destinations, shade or sun in appropriate seasons, street furniture, and traffic volume and speed.

Water Conservation: Using water wisely and efficiently so that it is not wasted.

Water-Efficient Landscaping: Landscaping designed to minimize water use and maximize energy efficiency.

Water Quality: The physical, chemical, and biological characteristics of water. It is most frequently used by reference to a set of standards against which compliance can be assessed. The most common standards used to assess water quality relate to drinking water, safety of human contact, and for health of ecosystems.

Watershed: The total area above a given point on a watercourse that contributes water to its flow; the entire region drained by a waterway or watercourse that drains into a lake or reservoir.

Wayfinding: All of the ways in which people orient themselves in physical space and navigate from place to place, including signage and other graphic communication.

Wetlands: Areas that are saturated by surface or groundwater at a frequency and duration to support wetland hydrology.

X

Reserved

Y

Reserved

Z

Zoning: A police power measure, enacted primarily by units of local government, in which the community is divided into districts or zones within which permitted and special uses are established as are regulations governing lot size, building bulk, placement and other development standards. Requirements vary from district to district, but they must be uniform within the same district. The Zoning Code consists of a map and text.

Zoning Map: The officially adopted zoning map of the City specifying the location of zoning districts within all geographic areas of the city.

APPENDIX C

Air Quality & Greenhouse Gas Impact Analysis

AIR QUALITY & GREENHOUSE GAS IMPACT ANALYSIS

FOR

CITY OF ATASCADERO 2045 GENERAL PLAN UPDATE

MARCH 2026

PREPARED BY:

AMBIENT
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Appendices

Appendix A Emissions Modeling & Supportive Documentation

LIST OF COMMON TERMS & ACRONYMS

AB	Assembly Bill
AHERA	Asbestos Hazard Emergency Response Act
ARB	California Air Resources Board
ATCM	Airborne Toxic Control Measure
BACT	Best Available Control Technology
CAAQS	California Ambient Air Quality Standards
CAP	Clean Air Plan (Air Quality) also Climate Action Plan (GHG)
CAFE	Corporate Average Fuel Economy
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CAMP	Construction Activity Management Plan
CBC	California Building Code
CCAA	California Clean Air Act
CCAR	California Climate Action Registry
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulation
CH_4	Methane
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
DPM	Diesel-Exhaust Particulate Matter or Diesel-Exhaust PM
DRRP	Diesel Risk Reduction Plan
EMFAC	Emission Factor
EO	Executive Order
FCAA	Federal Clean Air Act
FIP	Federal Implementation Plan
GHG	Greenhouse Gases
GPU	General Plan Update
GWP	Global Warming Potential
HAP	Hazardous Air Pollutant
HFC	Hydrofluorocarbons
IPCC	Intergovernmental Panel on Climate Change
LOS	Level of Service
$MMTCO_2e$	Million Metric Tons of Carbon Dioxide Equivalents
NF_2	Nitrogen trifluoride
N_2O	Nitrous Oxide
NAAQS	National Ambient Air Quality Standards
NESHAPs	National Emission Standards for HAPs
NO_x	Oxides of Nitrogen
O_3	Ozone
Pb	Lead
PFC	Perfluorocarbons
PM	Particulate Matter
PM_{10}	Particulate Matter (less than 10 µm)
$PM_{2.5}$	Particulate Matter (less than 2.5 µm)

ppb	Parts per Billion
ppm	Parts per Million
ROG	Reactive Organic Gases
RTP	Regional Transportation Plan
SB	Senate Bill
SCCAB	South Central Coast Air Basin
SCS	Sustainable Communities Strategy
SF_6	Sulfur hexafluoride
SLCP	Short-Lived Climate Pollutants
SLOAPCD	San Luis Obispo County Air Pollution Control District
SLOCOG	San Luis Obispo Council of Governments
SP	Service Population
SO_2	Sulfur Dioxide
TAC	Toxic Air Contaminant
TSCA	Toxic Substances Control Act
U.S. EPA	United State Environmental Protection Agency
VMT	Vehicle Miles Traveled

INTRODUCTION

This report provides a discussion of existing conditions, applicable regulatory framework, and an analysis of air quality and greenhouse gas impacts associated with the proposed City of Atascadero 2045 General Plan Update (2045 GPU/ZCU) and corresponding Zoning Code Update (ZCU).

PROPOSED CITY OF ATASCADERO GENERAL PLAN UPDATE

The 2045 GPU/ZCU is a long-range policy document that provides context and establishes guidance for decision-making, design and development of new projects, conservation of natural resources, promotion of economic development, improvements to mobility and infrastructure systems, expansion of public services, and enhancement of community amenities. The 2045 GPU/ZCU identifies year 2045 as a horizon year; however, the City recognizes that not all initiatives and goals in the 2045 GPU/ZCU may be achieved by 2045. The Zoning Code implements the General Plan and provides an administrative and development framework for parcels throughout the City. The Zoning Code will be revised to accommodate new General Plan Placetypes and will incorporate administrative and process updates aligned with General Plan policies, existing city processes, and permit streamlining directives.

AIR QUALITY

Existing Setting

The project is located within the South Central Coast Air Basin (SCCAB), and within the jurisdiction of the San Luis Obispo County Air Pollution Control District (SLOAPCD). Air quality in the SCCAB is influenced by a variety of factors, including topography, and local and regional meteorology.

Topography

The City sits on the rolling hills of the eastern side of the Santa Lucia Mountain Range. It is bounded from the northwest by the Santa Lucia Mountain Range, which extends almost the entire length of the county. Rising sharply to about 3,000 feet at its northern boundary, the Santa Lucia Range gradually winds southward away from the coast, finally merging into a mass of rugged features on the north side of Cuyama Canyon. Point Buchon juts into the Pacific just south of Morro Bay to form the protective harbor of San Luis Obispo Bay. The Irish Hills are the dominant feature on this knob of land, rising abruptly from the shore to form steep cliffs and generally complex terrain from the Los Osos/Montana de Oro State Park area to Pismo Beach. These headlands have a pronounced influence on local wind flow patterns.

Local and Regional Meteorology

The climate of the county can be generally characterized as Mediterranean, with warm, dry summers and cooler, relatively damp winters. Along the coast, mild temperatures are the rule throughout the year due to the moderating influence of the Pacific Ocean. This effect is diminished inland in proportion to the distance from the ocean or by major intervening terrain features, such as the coastal mountain ranges. As a result, inland areas are characterized by a considerably wider range of temperature conditions. Maximum summer temperatures average about 70 degrees Fahrenheit near the coast, while inland valleys are often in the high 90s. Minimum winter temperatures average from the low 30s along the coast to the low 20s inland (SLOAPCD 2001).

Regional meteorology is largely dominated by a persistent high-pressure area that commonly resides over the eastern Pacific Ocean. Seasonal variations in the strength and position of this pressure cell cause

seasonal changes in the weather patterns of the area. The Pacific High remains generally fixed several hundred miles offshore from May through September, enhancing onshore winds and opposing offshore winds.

During spring and early summer, as the onshore breezes pass over the cool water of the ocean, fog, and low clouds often form in the marine air layer along the coast. Surface heating in the interior valleys dissipates the marine layer as it moves inland (SLOAPCD 2001).

From November through April the Pacific High tends to migrate southward, allowing northern storms to move across the county. About 90 percent of the total annual rainfall is received during this period. Winter conditions are usually mild, with intermittent periods of precipitation followed by mostly clear days. Rainfall amounts can vary considerably among different regions in the county. In the Coastal Plain, annual rainfall averages 16 to 28 inches, while the Upper Salinas River Valley generally receives about 12 to 20 inches of rain. The Carrizo Plain is the driest area of the county with less than 12 inches of rain in a typical year (SLOAPCD 2001).

Airflow around the county plays an important role in the movement and dispersion of pollutants. The speed and direction of local winds are controlled by the location and strength of the Pacific High-pressure system and other global patterns, by topographical factors, and by circulation patterns resulting from temperature differences between the land and sea. In spring and summer months, when the Pacific High attains its greatest strength, onshore winds from the northwest generally prevail during the day. At night, as the sea breeze dies, weak drainage winds flow down the coastal mountains and valleys to form a light, easterly land breeze (SLOAPCD 2001).

In the Fall, onshore surface winds decline, and the marine layer grows shallow, allowing an occasional reversal to a weak offshore flow. This, along with the diurnal alternation of land-sea breeze circulation, can sometimes produce a "sloshing" effect. Under these conditions, pollutants may accumulate over the ocean for a period of one or more days and are subsequently carried back onshore with the return of the sea breeze. Strong inversions can form at this time, "trapping" pollutants near the surface (SLOAPCD 2001).

This effect is intensified when the Pacific High weakens or moves inland to the east. This may produce a "Santa Ana" condition in which air, often pollutant-laden, is transported into the county from the east and southeast. This can occur over a period of several days until the high-pressure system returns to its normal location, breaking the pattern. The breakup of Santa Ana conditions may result in relatively stagnant conditions and a buildup of pollutants offshore. The onset of the typical daytime sea breeze can bring these pollutants back onshore, where they combine with local emissions to cause high pollutant concentrations. Not all occurrences of the "post-Santa Ana" conditions lead to high ambient pollutant levels, but it does play an important role in the air pollution meteorology of the county (SLOAPCD 2001).

Atmospheric Stability and Dispersion

Air pollutant concentrations are primarily determined by the amount of pollutant emissions in an area and the degree to which these pollutants are dispersed into the atmosphere. The stability of the atmosphere is one of the key factors affecting pollutant dispersion. Atmospheric stability regulates the amount of vertical and horizontal air exchange or mixing that can occur within a given air basin. Restricted mixing and low wind speeds are generally associated with a high degree of stability in the atmosphere. These conditions are characteristic of temperature inversions (SLOAPCD 2001).

In the atmosphere, air temperatures normally decrease as altitude increases. At varying distances above the earth's surface, however, a reversal of this gradient can occur. This condition termed an inversion, is simply a warm layer of air above a layer of cooler air, and it has the effect of limiting the vertical dispersion of pollutants. The height of the inversion determines the size of the mixing volume trapped below. Inversion strength or intensity is measured by the thickness of the layer and the difference in temperature between the base and the top of the inversion. The strength of the inversion determines how easily it can be broken by wind or solar heating (SLOAPCD 2001).

Several types of inversions are common to this area. Weak, surface inversions are caused by radiational cooling of air in contact with the cold surface of the earth at night. In valleys and low-lying areas, this condition is intensified by the addition of cold air flowing downslope from the hills and pooling on the valley floor. Surface inversions are a common occurrence throughout the county during the winter, particularly on cold mornings when the inversion is strongest. As the morning sun warms the earth and the air near the ground, the inversion lifts, gradually dissipating as the day progresses. During the late spring and early summer months, cool air over the ocean can intrude under the relatively warmer air over land, causing a marine inversion. These inversions can restrict dispersion along the coast, but they are typically shallow and will dissipate with surface heating (SLOAPCD 2001).

In contrast, in the summertime, the presence of the Pacific high-pressure cell can cause the air mass aloft to sink. As the air descends, compressional heating warms it to a temperature higher than the air below. This highly stable atmospheric condition, termed a subsidence inversion, is common to all of coastal California and can act as a nearly impenetrable lid to the vertical mixing of pollutants. The base of the inversion typically ranges from 1,000 to 2,500 feet above sea level; however, levels as low as 250 feet, among the lowest anywhere in the state, have been recorded on the coastal plateau in San Luis Obispo County. The strength of these inversions makes them difficult to disrupt. Consequently, they can persist for one or more days, causing air stagnation and the buildup of pollutants. Highest or worst-case ozone levels are often associated with the presence of this type of inversion (SLOAPCD 2001).

Criteria Air Pollutants

For the protection of public health and welfare, the Clean Air Act (CAA) required that the United States Environmental Protection Agency (U.S. EPA) establish National Ambient Air Quality Standards (NAAQS) for various pollutants. These pollutants are referred to as "criteria" pollutants because the U.S. EPA publishes criteria documents to justify the choice of standards. These standards define the maximum amount of an air pollutant that can be present in ambient air without harm to the public’s health. An ambient air quality standard is generally specified as a concentration averaged over a specific time period, such as one hour, eight hours, 24 hours, or one year. The different averaging times and concentrations are meant to protect against different exposure effects. The CAA allows states to adopt additional or more health-protective standards. The air quality regulatory framework and ambient air quality standards are discussed in greater detail later in this report.

Human Health & Welfare Effects

Common air pollutants and associated adverse health and welfare effects are summarized in Table 1. Within the SCCAB, the air pollutants of primary concern, with regard to human health, include ozone, particulate matter (PM). Health effects commonly associated with criteria air pollutants are summarized in Table 1. As depicted in Table 1, exposure to increased pollutant concentrations of ozone and PM can

result in various heart and lung ailments, cardiovascular and nervous system impairment, and premature death.

Table 1. Common Pollutants & Adverse Effects

Pollutant	Human Health & Welfare Effects
Particulate Matter (PM_{10} & $PM_{2.5}$)	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility (haze).
Ozone (O_3)	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing, and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield. Damages rubber, some textiles, and dyes.
Sulfur Dioxide (SO_2)	Respiratory irritant. Aggravates lung and heart problems. In the presence of moisture and oxygen, sulfur dioxide converts to sulfuric acid which can damage marble, iron, and steel; damage crops and natural vegetation. Impairs visibility. A precursor to acid rain.
Carbon Monoxide (CO)	Reduces the ability of blood to deliver oxygen to vital tissues, effecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.
Nitrogen Dioxide (NO_2)	Respiratory irritant; aggravates lung and heart problems. A precursor to ozone and acid rain. Contributes to global warming, and nutrient overloading which deteriorates water quality. Causes brown discoloration of the atmosphere.
Lead (Pb)	Anemia, high blood pressure, brain and kidney damage, neurological disorders, cancer, lowered IQ. Affects animals, plants, and aquatic ecosystems.

Source: ARB 2018

Ozone is a secondary pollutant, which is formed by the combination of oxides of nitrogen (NO_X) and reactive organic gases (ROG), also commonly referred to as volatile organic compounds (VOCs). Ozone is not a directly emitted pollutant. NO_X and ROG are not criteria air pollutants but, when in the presence of sunlight, they can form ozone and also contribute to the formation of secondary $PM_{2.5}$. Because ozone is not a directly emitted pollutant and is created under specific meteorological conditions over a wide transport area, ozone concentrations are typically evaluated at a regional level using complex photochemical models. These models are capable of predicting concentrations that take into account variations in amounts of precursor emissions (e.g., ROG, NO_X), temperature, inversions, sunlight, hourly variations, ambient conditions, and wind flow over long distances (e.g., miles). At the project level of analysis, evaluation of ozone concentrations is "not practicable and not likely [to] yield valid information" (SJVAPCD 2015).

It is important to note that the health effects of criteria air pollutants are taken into consideration when the U.S. EPA establishes the NAAQS for individual pollutants. The health effects of a particular pollutant are analyzed on a regional basis based on the area's attainment of the NAAQS. As discussed later in this report, the Air Quality Index (AQI) is one common method of evaluating public health impacts for criteria air pollutants of primary concern. In addition, local air districts establish significance thresholds that are based on the evaluation of an individual project's contribution to regional air quality conditions and associated health effects.

Odors

Typically, odors are generally regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (i.e. irritation, anger, or anxiety) to physiological, including circulatory and respiratory effects, nausea, vomiting, and headache.

Neither the state nor the federal governments have adopted rules or regulations for the control of odor sources. The SLOAPCD does not have an individual rule or regulation that specifically addresses odors; however, odors would be applicable to SLOAPCD's Rule 402, Nuisance. Any actions related to odors would be based on citizen complaints to local governments and the SLOAPCD. The SLOAPCD recommends that odor impacts be addressed in a qualitative manner. Such analysis shall determine if the project results in excessive nuisance odors, as defined under the California Code of Regulations, Health & Safety Code Section 41700, air quality public nuisance.

Existing Sources of Odors

Land uses that typically produce objectionable odors with the potential of affecting a substantial number of people include landfills, rendering plants, chemical plants, agricultural uses, wastewater treatment plants, refineries, fast food restaurants, bakeries, and coffee roasting facilities. Within the City of Atascadero, major sources of potential odors include the Atascadero Water Reclamation Facility, located east of the Chalk Mountain Golf Course; as well as, fast food restaurants, bakeries, and coffee roasting facilities.

Toxic Air Contaminants

Toxic air contaminants (TACs) are air pollutants that may cause or contribute to an increase in mortality or serious illness, or which may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air, but due to their high toxicity, they may pose a threat to public health even at very low concentrations. Because there is no threshold level below which adverse health impacts are not expected to occur, TACs differ from criteria pollutants for which acceptable levels of exposure can be determined and for which state and federal governments have set ambient air quality standards. TACs, therefore, are not considered "criteria pollutants" under either the Federal Clean Air Act (FCAA) or the California Clean Air Act (CCAA) and are thus not subject to National or State ambient air quality standards (AAQS). TACs are not considered criteria pollutants in that the FCAA and CCAA do not address them specifically through the setting of National or State AAQS. Instead, the U.S. EPA and California Air Resources Board (ARB) regulate Hazardous Air Pollutants (HAPs) and TACs, respectively, through statutes and regulations that generally require the use of the maximum or best available control technology to limit emissions. In conjunction with District rules, these federal and state statutes and regulations establish the regulatory framework for TACs. At the national level, the U.S. EPA has established National Emission Standards for HAPs (NESHAPs), in accordance with the requirements of the FCAA and subsequent amendments. These are technology-based source-specific regulations that limit allowable emissions of HAPs.

Within California, TACs are regulated primarily through the Tanner Air Toxics Act [Assembly Bill (AB) 1807] and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588). The Tanner Act sets forth a formal procedure for ARB to designate substances as TACs. This includes research, public participation, and scientific peer review before ARB designates a substance as a TAC. Existing sources of TACs that are subject to the Air Toxics Hot Spots Information and Assessment Act are required to: (1) prepare a toxic emissions inventory; (2) prepare a risk assessment if emissions are significant; (3) notify the public of significant risk levels; and (4) prepare and implement risk reduction measures.

At the state level, the ARB has authority for the regulation of emissions from motor vehicles, fuels, and consumer products. Most recently, diesel-exhaust particulate matter (DPM) was added to the ARB list of TACs. DPM is the primary TACs of concern for mobile sources. Of all controlled TACs, emissions of DPM

are estimated to be responsible for about 70 percent of the total ambient TAC risk. The ARB has made the reduction of the public's exposure to DPM one of its highest priorities, with an aggressive plan to require cleaner diesel fuel and cleaner diesel engines and vehicles (ARB 2005).

At the local level, air districts have authority over stationary or industrial sources. All projects that require air quality permits from the SLOAPCD are evaluated for TAC emissions. The SLOAPCD limits emissions and public exposure to TACs through a number of programs. The SLOAPCD prioritizes TAC-emitting stationary sources, based on the quantity and toxicity of the TAC emissions and the proximity of the facilities to sensitive receptors. The SLOAPCD requires a comprehensive health risk assessment for facilities that are classified in the significant-risk category, pursuant to AB 2588.

Sources of TACs generally include, major freeways and high-traffic roadways, large distribution centers involving the use of diesel-fueled heavy-duty trucks, railroad yards, ports, refineries, chrome platers, dry cleaners using perchloroethylene, and gasoline dispensing facilities (ARB 2005). In the State of California, the use of Perchloroethylne in dry cleaning operations was phased out in 2023.

Existing Sources of TACs

Within the City of Atascadero and surrounding areas, major sources of TACs are largely associated with on-road motor vehicles traveling along State Route 101 (SR-101) and SR-41. No major TAC-emitting facilities were identified in the City of Atascadero or surrounding areas (ARB 2026). To a lesser extent, stationary sources permitted by SLOAPCD, such as emergency-use generators and gasoline dispensing facilities, may also result in emissions of TACs. However, these stationary sources would be subject to SLOAPCD emissions limitations and permitting requirements.

Land Use Compatibility with TAC Emission Sources

The ARB published an informational guide entitled: Air Quality and Land Use Handbook: A Community Health Perspective (Handbook) in 2005. The purpose of this guide is to provide information to aid local jurisdictions in addressing issues and concerns related to the placement of sensitive land uses near major sources of air pollution. The ARB's Handbook includes recommended separation distances for various land uses that are based on relatively conservative estimations of emissions based on source-specific information. However, these recommendations are not site specific and should not be interpreted as defined "buffer zones". It is also important to note that the recommendations of the Handbook are advisory and need to be balanced with other State and local policies (ARB 2005). Depending on site and project-specific conditions, an assessment of potential increases in exposure to TACs may be warranted for proposed development projects located within the distances identified. ARB-recommended separation distances for various sources of emissions are summarized in Table 2.

Naturally-Occurring Asbestos

Asbestos is the common name for a group of naturally-occurring fibrous silicate minerals that can separate into thin but strong and durable fibers. Naturally-occurring asbestos (NOA), which was identified as a TAC in 1986 by ARB, is located in many parts of California and is commonly associated with ultramafic rock.

The western and southern areas of the City of Atascadero have been identified as having a potential for naturally-occurring ultramafic rock and serpentine soils (SLOAPCD 2018). Refer to Appendix A for a map depicting areas having a potential for naturally-occurring asbestos.

Table 2. Recommendations on Siting New Sensitive Land Uses Near TAC Emission Sources

Source Category	Advisory Recommendations
Freeways and High-Traffic Roads	• Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day.
Distribution Centers	• Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units (TRUs) per day, or where TRU unit operations exceed 300 hours per week). • Take into account the configuration of existing distribution centers and avoid locating residences and other new sensitive land uses near entry and exit points.
Rail Yards	• Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard. • Within one mile of a rail yard, consider possible siting limitations and mitigation approaches.
Ports	• Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily impacted zones. Consult local air districts or the ARB on the status of pending analyses of health risks.
Refineries	• Avoid siting new sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate separation.
Chrome Platers	• Avoid siting new sensitive land uses within 1,000 feet of a chrome plater.
Dry Cleaners Using Perchloroethylene[1]	• Avoid siting new sensitive land uses within 300 feet of any dry cleaning operation. For operations with two or more machines, provide 500 feet. For operations with 3 or more machines, consult with the local air district. • Do not site new sensitive land uses in the same building with perchloroethylene dry cleaning operations.
Gasoline Dispensing Facilities	• Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50 foot separation is recommended for typical gas dispensing facilities.

Recommendations are advisory, are not site specific, and may not fully account for future (post year 2005) reductions in emissions, including those resulting from compliance with existing/future regulatory requirements.

1. *Withing the State of California, the use of perchloroethylene was phased out in 2023.*

Source: ARB 2005

Asbestos-Containing Materials

Asbestos-Containing Materials (ACMs) are regulated under the federal National Emission Standards for Hazardous Air Pollutants (NESHAP) regulation. The NESHAP regulation requires a thorough inspection of regulated structures for the identification of NOAs prior to demolition or renovation. Notification requirements may also apply. Regulated structures include institutional, commercial, and industrial buildings; as well as, residential buildings that are demolished or renovated as part of a commercial or public project (SLOAPCD 2026).

Within San Luis Obispo County, the SLOAPCD implements the asbestos NESHAP regulation. ACMs are typically more prevalent in older structures, generally considered to be 1970's era and earlier. However, it is important to note that the use of asbestos in building materials has not been banned and may also be present, to some extent, in newer construction. As a result, for structures subject to NESHAP requirements, a thorough inspection is required prior to demolition or renovation (SLOAPCD 2026).

Sensitive Receptors

One of the most important reasons for air quality standards is the protection of those members of the population who are most sensitive to the adverse health effects of air pollution, termed "sensitive

receptors." The term “sensitive receptors” refers to specific population groups, as well as the land uses where individuals would reside for long periods. Commonly identified sensitive population groups are children, the elderly, the acutely ill, and the chronically ill. Commonly identified sensitive land uses would include facilities that house or attract children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants. Residential dwellings, schools, parks, playgrounds, childcare centers, assisted living facilities, and hospitals are examples of sensitive land uses.

Existing Sensitive Land Uses

Sensitive land uses within the City of Atascadero and surrounding areas consist predominantly of residential land uses; as well as, schools, daycare facilities, assisted living facilities, and the Atascadero State Hospital.

Ambient Air Quality

Air pollutant concentrations are measured at several monitoring stations in the SCCAB. The Atascadero-Lift Station #5 monitoring station is the closest representative monitoring station with sufficient data to meet U.S. EPA and/or ARB criteria for quality assurance. Ambient monitoring data was obtained for the last three years of available measurement data (i.e., 2022 through 2024) and is summarized in Table 3. As depicted, the national and state $PM_{2.5}$ standards were exceeded on multiple days over the last three years of available data. Measured 24-hour PM_{10}, 8-hour ozone, 1-hour ozone, and NO_2 concentrations did not exceed the state and federal ambient air quality standards during the last three years of available data (ARB 2026b).

Air Quality Index

The health effects of ambient air pollutant concentrations can be evaluated and presented in various ways. The most common method is the use of the Air Quality Index (AQI). The U.S. EPA developed the AQI as an easy-to-understand measure of health impacts based on measured ambient air quality in comparison to established ambient air quality standards. Tables 4 and 5 present a summary of the health impacts for ozone and fine particulate matter ($PM_{2.5}$), respectively, based on the U.S. EPA’s AQI.

A summary of the annual air quality index for San Luis Obispo County for the last three years of available data is provided in Table 6. As depicted in Table 6, the County typically experiences "good” air quality with the total number of days ranging from 117 to 207 days per year. Days classified as “moderate” AQI ranged from 152 to 245 days per year. Over the last three years of available data, the County has experienced a total of 19 days classified as “Unhealthy for Sensitive Groups”. Over the past three years, the County has not experienced air quality conditions within the “Unhealthy”, “Very Unhealthy” or “Hazardous” range (U.S. EPA 2026).

Table 3. Summary of Ambient Air Quality Monitoring Data

Pollutant	Monitoring Year		
	2022	2023	2024
Ozone (O_3)			
Maximum concentration (1-hour/8-hour average; ppm)	0.069/0.060	0.073/0.059	0.071/0.062
Number of days state/national 1-hour standard exceeded	0/0	0/0	0/0
Number of days state/national 8-hour standard exceeded	0/0	0/0	0/0
Nitrogen Dioxide (NO_2)			
Maximum 1-hour concentration (state/national; ppb)	26/26.0	50/50.7	32/32.4
Number of days state/national standard exceeded	0/0	0/0	0/0
Suspended Particulate Matter ($PM_{2.5}$)			
Maximum 24-hour concentration (national/state; µg/m3)	19.1/19.1	24.3/24.3	28.7/28.7
Number of days national standard exceeded (measured/calculated)(3)	0/0	0/0	0/0
Suspended Particulate Matter (PM_{10})			
Maximum 24-hour concentration (national/state; µg/m3)	39.7/38.8	49.5/48.7	39.3/39.3
Number of days state standard exceeded (measured/calculated)(3)	0/NA	0/NA	0/NA
Number of days national standard exceeded (measured/calculated)(3)	0/0	0/0	0/0

ppm = parts per million by volume, µg/m^3 = micrograms per cubic meter, NA=Not Available
Based on ambient concentrations obtained from the Atascadero-Lift Station #5 Monitoring Station.
Measured days are those days that an actual measurement was greater than the standard. Calculated days are estimated days that measurement would have exceeded the standard had measurements been collected every day.
Source: ARB 2026b

Table 4. Air Quality Index Summary for Ozone & Related Health Effects

Air Quality Index / 8-hour Ozone Concentration	Health Effects Description
AQI 51-100: Moderate Ambient Ozone Concentrations: 55-70 ppb	*Sensitive Groups*: Children and people with asthma are the groups at most risk. *Health Effects Statements*: Unusually sensitive individuals may experience respiratory symptoms. *Cautionary Statements*: Unusually sensitive people should consider limiting prolonged outdoor exertion.
AQI 101-150: Unhealthy for Sensitive Groups Ambient Ozone Concentrations: 71-85 ppb	*Sensitive Groups*: Children and people with asthma are the groups at most risk. *Health Effects Statements*: Increasing likelihood of respiratory symptoms and breathing discomfort in active children and adults and people with respiratory disease, such as asthma. *Cautionary Statements*: Active children and adults, and people with respiratory disease, such as asthma, should limit prolonged outdoor exertion.
AQI 151–200: Unhealthy Ambient Ozone Concentrations: 86-105 ppb	*Sensitive Groups*: Children and people with asthma are the groups at most risk. *Health Effects Statements*: Greater likelihood of respiratory symptoms and breathing difficulty in active children and adults and people with respiratory disease, such as asthma; possible respiratory effects in general population. *Cautionary Statements*: Active children and adults, and people with respiratory disease, such as asthma, should limit prolonged outdoor exertion; everyone else, especially children, should limit prolonged outdoor exertion.
AQI 201-300: Very Unhealthy Ambient Ozone Concentrations: 106-200 ppb	*Sensitive Groups*: Children and people with asthma are the groups at most risk. *Health Effects Statements*: Increasingly severe symptoms and impaired breathing likely in active children and adults and people with respiratory disease, such as asthma; increasing likelihood of respiratory effects in general population. *Cautionary Statements*: Active children and adults, and people with respiratory disease, such as asthma, should avoid outdoor exertion; everyone else, especially children, should limit outdoor exertion.
An AQI of 50 and below is categorized as "Good" and air quality is satisfactory, and poses little or no risk. An AQI of 301 or higher is categorized as "Hazardous" having a health warning of emergency conditions: everyone is more likely to be affected. Outdoor activities should be avoided for all individuals. *AQI = Air quality index, ppb = parts per billion* *Source: ARB 2018*	

Table 5. Air Quality Index Summary for Fine Particulate Matter & Related Health Effects

Air Quality Index / 8-hour Ozone Concentration	Health Effects Description
AQI 51-100: Moderate Ambient Concentrations: 12.1-35.4 µg/m^3	*Sensitive Groups:* Some people who may be unusually sensitive to particulate. *Health Effects Statements*: Unusually sensitive people should consider reducing prolonged or heavy exertion. *Cautionary Statements*: Unusually sensitive people: Consider reducing prolonged or heavy exertion. Watch for symptoms such as coughing or shortness of breath. These are signs to take it easier.
AQI 101-150: Unhealthy for Sensitive Groups Ambient Concentrations: 35.5-55.4 µg/m^3	*Sensitive Groups:* People with heart or lung disease, older adults, children, and teenagers. *Health Effects Statements*: Increasing likelihood of respiratory symptoms for sensitive individuals, aggravation of heart or lung disease, and premature mortality in persons with cardiopulmonary disease, and the elderly. *Cautionary Statements:* If you have heart disease: Symptoms such as palpations, shortness of breath, or unusual fatigue may indicate a serious problem. If you have any of these, contact a health care provider.
AQI 151–200: Unhealthy Ambient Concentrations: 55.5-150.4 µg/m^3	*Sensitive Groups:* Everyone. *Health Effects Statements*: Increased aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease, and the elderly; increased respiratory effects in general population. *Cautionary Statements: Sensitive groups:* Avoid prolonged or heavy exertion. Consider moving activities indoors or rescheduling. Everyone else: Reduce prolonged or heavy exertion. Take more breaks during outdoor activities.
AQI 201-300: Very Unhealthy Ambient Concentrations: 150.5-250.4 µg/m^3	*Sensitive Groups:* Everyone. *Health Effects Statements*: Significant aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease, and the elderly; significant increase in respiratory effects in general population. *Cautionary Statements: Sensitive groups:* Avoid all physical activity outdoors. Move activities indoors or reschedule to a time when air quality is better. Everyone else: Avoid prolonged or heavy exertion. Consider moving activities indoors or reschedule to a time when air quality is better.
An AQI of 50 and below is categorized as "Good" and air quality is satisfactory and poses little or no risk. An AQI of 301 or higher is categorized as "Hazardous" having a health warning of emergency conditions: everyone is more likely to be affected. Outdoor activities should be avoided for all individuals. *AQI = Air quality index, µg/m3 = micrograms per cubic meter* *Source: ARB 2018*	

Table 6. Air Quality Index Annual Historical Summary

Year	Air Quality Index (AQI) - Number of Days					
	Good	Moderate	Unhealthy for Sensitive Groups	Unhealthy	Very Unhealthy	Hazardous
2024	193	163	10	0	0	0
2023	207	152	6	0	0	0
2022	117	245	3	0	0	0
Represents overall air quality taking into account all criteria pollutants measured. *Source: U.S, EPA 2026*						

Regulatory Framework

Air quality within the SCCAB is regulated by several jurisdictions including the U.S. EPA, ARB, and the SLOAPCD. Each of these jurisdictions develops rules, regulations, and policies to attain the goals or directives imposed upon them through legislation.

Federal

U.S. Environmental Protection Agency

At the federal level, the U.S. EPA has been charged with implementing national air quality programs. The U.S. EPA's air quality mandates are drawn primarily from the FCAA, which was signed into law in 1970. Congress substantially amended the FCAA in 1977 and again in 1990.

Federal Clean Air Act

The FCAA required the U.S. EPA to establish NAAQS or National AAQS, and set deadlines for their attainment. Two types of NAAQS have been established: primary standards, which protect public health, and secondary standards, which protect public welfare from non-health-related adverse effects, such as visibility restrictions. NAAQS are summarized in Table 7.

State

California Air Resources Board

The ARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the CCAA of 1988. Other ARB duties include monitoring air quality (in conjunction with air monitoring networks maintained by air pollution control districts and air quality management districts, establishing California Ambient Air Quality Standards (CAAQS), which in many cases are more stringent than the NAAQS, and setting emissions standards for new motor vehicles. The CAAQS are summarized in Table 7. The emission standards established for motor vehicles differ depending on various factors including the model year, and the type of vehicle, fuel, and engine used.

California Clean Air Act

The CCAA requires that all air districts in the state endeavor to achieve and maintain CAAQS for ozone, CO, sulfur dioxide (SO_2), and nitrogen dioxide (NO_2) by the earliest practicable date. The CCAA specifies that districts focus particular attention on reducing the emissions from transportation and area-wide emission sources, and the act provides districts with authority to regulate indirect sources. Each district plan is required to either (1) achieve a five percent annual reduction, averaged over consecutive 3-year periods, in district-wide emissions of each non-attainment pollutant or its precursors, or (2) to provide for the implementation of all feasible measures to reduce emissions. Any planning effort for air quality attainment would thus need to consider both state and federal planning requirements.

Assembly Bills 1807 & 2588 - Toxic Air Contaminants

Within California, TACs are regulated primarily through AB 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics Hot Spots Information and Assessment Act of 1987). The Tanner Air Toxics Act sets forth a formal procedure for ARB to designate substances as TACs. This includes research, public participation, and scientific peer review before ARB designates a substance as a TAC. Existing sources of TACs that are subject to the Air Toxics Hot Spots Information and Assessment Act are required to: (1) prepare a toxic emissions

inventory; (2) prepare a risk assessment if emissions are significant; (3) notify the public of significant risk levels; and (4) prepare and implement risk reduction measures.

Table 7. Summary of Ambient Air Quality Standards & Attainment Designations

San Luis Obispo County Attainment Status						
Pollutant	**Averaging Time**	**California Standards***		**Federal Standards†**		
		Concentration	**Attainment Status**	**Primary**	**Secondary**	**Attainment Status**
Ozone (O_3)	1 Hour	0.09 ppm	Non-Attainment	–	Same as Primary Standard	Non-Attainment Eastern SLO County - Attainment Western SLO County‡
	8 Hour	0.070 ppm		0.070 ppm		
Respirable Particulate Matter (PM10)	24 Hour	50 µg/m³	Non-Attainment	150 µg/m³	Same as Primary Standard	Unclassified
	Annual Arithmetic Mean	20 µg/m³		–		
Fine Particulate Matter (PM2.5)	24 Hour	No State Standard	Attainment	35 µg/m³	Same as Primary Standard	Unclassified/ Attainment
	Annual Arithmetic Mean	12 µg/m³		9.0 µg/m³	15.0 µg/m³	No Attainment Information§
Carbon Monoxide (CO)	8 Hour	9.0 ppm	Attainment	9 ppm	–	Unclassified/ Attainment
	1 Hour	20 ppm		35 ppm	–	
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm	Attainment	0.053 ppm	–	Unclassified/ Attainment
	1 Hour	0.18 ppm		100 ppb	Same as Primary Standard	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	–	Attainment	0.030 ppm	–	Unclassified/ Attainment
	24 Hour	0.04 ppm		0.14 ppm	–	
	3 Hour	–		–	0.5 ppm	
	1 Hour	0.25 ppm		75 ppb	–	
Lead	30 Day Average	1.5 µg/m³	Attainment	–	-	Unclassified/ Attainment
	Calendar Quarter	–		1.5 µg/m³	Same as Primary Standard	
	Rolling 3-Month Average*	–		0.15 µg/m³		
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per kilometer – visibility of ten miles or more (0.07-30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent.	Unclassified	**No Federal Standards**		
Sulfates	24 Hour	25 µg/m³	Attainment			
Hydrogen Sulfide	1 Hour	0.03 ppm	Attainment			
Vinyl Chloride*	24 Hour	0.01 ppm	No Attainment Information			

* For more information on California standards visit: https://ww2.arb.ca.gov/resources/california-ambient-air-quality-standards

† For more information on Federal standards visit: https://www.epa.gov/criteria-air-pollutants

‡ San Luis Obispo County has been designated non-attainment east of the -120.4 deg Longitude line in areas of SLO County that are south of latitude 35.45 degrees, and east of the -120.3 degrees longitude line in areas of SLO County that are north of latitude 35.45 degrees. Map of non-attainment area is available upon request from the APCD.

§ On February 7, 2024, the national annual $PM_{2.5}$ primary standard was lowered from 12.0 µg/m³ to 9.0 µg/m³. The existing national 24- hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 µg/m³, as was the annual secondary standard of 15.0 µg/m³. The existing 24-hour PM10 standards (primary and secondary) of 150 µg/m³ also were retained. Area designations for the new standard are expected to be promulgated Feb. 2026. The county is designated as Unclassifiable/Attainment for the 2012 Annual $PM_{2.5}$ standard of 12.0 µg/m³.

Revised January 13, 2025

Source: SLOAPCD 2025

In-Use Off-Road Diesel Vehicle Regulation

On July 26, 2007, the ARB adopted a regulation to reduce DPM and oxides of nitrogen (NO_X) emissions from in-use (existing) off-road heavy-duty diesel vehicles in California. The regulation applies to self-propelled diesel-fueled vehicles that cannot be registered and licensed to drive on-road, as well as two-engine vehicles that drive on road, with the limited exception of two-engine sweepers. Examples include loaders, crawler tractors, skid steers, backhoes, forklifts, airport ground support equipment, water well drilling rigs, and two-engine cranes. Such vehicles are used in construction, mining, and industrial operations. The regulation does not apply to stationary equipment or portable equipment such as generators. The off-road vehicle regulation establishes emissions performance requirements, reporting, disclosure, and labeling requirements for off-road vehicles, and limits unnecessary idling.

California Building Code

The California Building Code (CBC) contains standards that regulate the method of use, properties, performance, or types of materials used in the construction, alteration, improvement, repair, or rehabilitation of a building or other improvement to real property. The CBC is adopted every three years by the Building Standards Commission (BSC). In the interim, the BSC also adopts annual updates to make necessary mid-term corrections. The CBC standards apply statewide; however, a local jurisdiction may amend a CBC standard if it makes a finding that the amendment is reasonably necessary due to local climatic, geological, or topographical conditions.

Green Building Standards

In essence, green buildings standards are indistinguishable from any other building standards. Both standards are contained in the CBC and regulate the construction of new buildings and improvements. The only practical distinction between the two is that whereas the focus of traditional building standards has been protecting public health and safety, the focus of green building standards is to improve environmental performance.

The 2019 Building Energy Efficiency Standards (2019 Standards), adopted in May 2018, addressed four key areas: smart residential photovoltaic systems, updated thermal envelope standards (preventing heat transfer from the interior to the exterior and vice versa), residential and nonresidential ventilation requirements, and non-residential lighting requirements. The 2019 Standards required new residential and non-residential construction; as well as major alterations to existing structures, to include EV-capable parking spaces which have electrical panel capacity and conduit to accommodate future installation. In addition, the 2019 Standards also required the installation of PV systems for low-rise residential dwellings, defined as single-family dwellings and multi-family dwellings up to three stories in height. These requirements are based on various factors, including the floor area of the home, sun exposure, and climate zone. Under the 2019 standards, nonresidential buildings will use about 30 percent less energy due mainly to lighting upgrades (CEC 2019).

The 2022 Building Energy Efficiency Standards (2022 Standards), which were approved in December 2021, encourage efficient electric heat pumps, establish electric-ready requirements when natural gas is installed, support the future installation of battery storage, further expand solar photovoltaic and battery storage standards. The 2022 Standards extend solar PV system requirements, as well as battery storage capabilities for select land uses, including high-rise multi-family and non-residential land uses, such as office buildings, schools, restaurants, warehouses, theaters, grocery stores, and more. Depending on the land use and other factors, solar systems should be sized to meet targets of up to 60 percent of the

structure's loads. These solar requirements became effective on January 1, 2023, and contribute to California's goal of reaching a net-zero carbon footprint by 2045 (CEC 2022).

The most current standards are the 2025 Standards, which became effective January 1, 2026. The 2025 Standards build upon the previous standards by expanding the use of heat pumps in newly constructed residential buildings, encouraging electric-readiness, strengthens ventilation standards, and more (CEC 2026).

Local

County of San Luis Obispo Air Pollution Control District

The SLOAPCD is the agency primarily responsible for ensuring that NAAQS and CAAQS are not exceeded and that air quality conditions within the region are maintained. Responsibilities of the SLOAPCD include but are not limited to, preparing plans for the attainment of ambient air quality standards, adopting and enforcing rules and regulations concerning sources of air pollution, issuing permits for stationary sources of air pollution, inspecting stationary sources of air pollution and responding to citizen complaints, monitoring ambient air quality and meteorological conditions, and implementing programs and regulations required by the FCAA and the CCAA.

City of Atascadero General Plan 2025

The City's General Plan 2025 includes numerous policies related to transportation intended to minimize transportation impacts, reduce vehicle trip generation and vehicle miles traveled (VMT), and promote alternative means of transportation. These policies would have the added benefit of reducing local and regional air quality impacts. These policies include, but are not limited to, the following (City of Atascadero 2002):

- Policy 1.3: Maintain LOS C or better as the standard at all intersections and on all arterial and collector roads. Upon City Council approval, accept LOS D where residences are not directly impacted and improvements to meet the City's standard would be prohibitively costly or disruptive.
- Policy 2.1: Provide for a comprehensive system of creekside trails, roadside pathways, equestrian trails, multi-use trails and bikeways to connect neighborhoods, schools, commercial, and recreation areas, in accordance with the Bikeway and Trail Plan.
- Policy 2.2: Accommodate bicycles at major destinations including downtown, bus stops, schools, and other public facilities.
- Policy 2.3: Promote walking as an alternative to vehicle travel in retail district and multi-family areas.
- Policy 3.1: Promote alternatives to single-occupancy vehicle travel, particularly for commute trips.
- Policy 3.2: Encourage expansion of public transit as needed to meet the changing needs of the area for local and regional access, including fixed route and demand response where appropriate.
- Policy 3.3: Comply with the Transportation Demand Management program requirements of the San Luis Obispo County Clean Air Plan to reduce peak period trip generation.

Impact Analysis

Thresholds of Significance

In accordance with Appendix G of the *California Environmental Quality Act (CEQA) Guidelines,* air quality impacts associated with the proposed project would be considered significant if it would:

a) Conflict with or obstruct implementation of the applicable air quality plan.

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.

c) Expose sensitive receptors to substantial pollutant concentrations.

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

To assist in the evaluation of air quality impacts, the SLOAPCD has developed recommended project-level significance thresholds, which are contained in the SLOAPCD's *CEQA Air Quality Handbook* (2012). However, at a programmatic level of environmental review, such as for the proposed 2045 GPU/ZCU, a quantitative project-level emissions analysis is not required. At the program-level of analysis, a finding of significant impact would be determined qualitatively by comparing consistency of the project with the Transportation and Land Use Planning Strategies outlined in the SLOAPCD's Clean Air Plan (CAP). Projects determined to be inconsistent with the SLOAPCD's CAP would be considered to have a potentially significant impact. Although not always applicable at a programmatic level, some project-level significance thresholds, such as exposure to odorous emissions, can be used to help inform of potentially significant impacts at a programmatic level of analysis. The SLOAPCD's project-level significance thresholds are identified as follows:

Construction Impacts

The threshold criteria established by the SLOAPCD to determine the significance and appropriate mitigation level for a project's short-term construction emissions are presented in Table 8 and discussed, as follows (SLOAPCD 2012):

Table 8. SLOAPCD Thresholds of Significance for Project-Level Construction Impacts

Pollutant	Threshold[1]		
	Daily (lbs/day)	Quarterly Tier 1 (tons)	Quarterly Tier 2 (tons)
Ozone Precursors (ROG + NO_X)	137	2.5	6.3
Diesel Particulate Matter (DPM)	7	0.13	0.32
Fugitive Particulate Matter (PM_{10}), Dust[2]	--	2.5	--

1. Daily and quarterly emissions thresholds are based on the California Health & Safety Code and the ARB Carl Moyer Guidelines.
2. Any project with a grading area greater than 4.0 acres of a worked area can exceed the 2.5 tons PM_{10} quarterly threshold.
Source: SLOAPCD 2012

ROG and NOx Emissions

Daily: For construction projects exceeding the 137 lbs/day threshold require Standard Mitigation Measures.

Quarterly – Tier 1: For construction projects exceeding the 2.5 tons/quarter threshold, require Standard Mitigation Measures and Best Available Control Technology (BACT) for construction equipment. Off-site mitigation may be required if feasible mitigation measures are not implemented, or if no mitigation measures are feasible for the project.

Quarterly – Tier 2: For construction projects exceeding the 6.3 tons/quarter threshold, Standard Mitigation Measures, BACT, implementation of a Construction Activity Management Plan (CAMP), and off-site mitigation are required.

DPM Emissions

Daily: For construction projects exceeding the 7 lbs/day threshold, require Standard Mitigation Measures.

Quarterly - Tier 1: For construction projects lasting more than one quarter, exceedance of the 0.13 tons/quarter threshold requires Standard Mitigation Measures, BACT for construction equipment; and,

Quarterly - Tier 2: For construction projects exceeding the 0.32 tons/quarter threshold, require Standard Mitigation Measures, BACT, implementation of a CAMP, and off-site mitigation.

Fugitive Particulate Matter (PM_{10}), Dust Emissions

Quarterly- Tier 1: For construction projects exceeding the 2.5 tons/quarter threshold require Fugitive PM_{10} dust Mitigation Measures and may require the implementation of a CAMP.

Operational Impacts

Criteria Air Pollutants

The threshold criteria established by the SLOAPCD to determine the significance and appropriate mitigation level for long-term operational emissions from a project are presented in Table 9.

Table 9. SLOAPCD Thresholds of Significance for Project-Level Operational Impacts

Pollutant	Threshold[1]	
	Daily (lbs/day)	Annual (tons/year)
Ozone Precursors [reactive organic gas (ROG) + oxides of nitrogen (NO_X)]	25	25
Diesel Particulate Matter (DPM)[2]	1.25	--
Fugitive Particulate Matter (PM_{10}), Dust	25	25
Carbon Monoxide (CO)	550	--

1. *Daily and annual emissions thresholds are based on the California Health & Safety Code Division 26, Part 3, Chapter 10, Section 40918 and the ARB Carl Moyer Guidelines for DPM.*
2. *Applies to on-site emissions. DPM is seldom emitted from individual projects in quantities which lead to local or regional air quality attainment violations.*

Source: SLOAPCD 2012

For projects exceeding the 25 lbs/day operational ozone precursor threshold but not the corresponding 25 tons/year annual threshold, the project shall implement all applicable SLOAPCD-recommended mitigation measures. Off-site mitigation may be required for projects (exceeding the 25 lbs/day threshold) if all applicable SLOAPCD-recommended mitigation measures are not implemented, or if no mitigation measures are feasible for the project. Off-site mitigation is required for projects exceeding the 25 tons/year threshold (SLOAPCD 2017).

Toxic Air Contaminants

If a project has the potential to emit toxic or hazardous air pollutants or is located in close proximity to sensitive receptors, impacts may be considered significant due to increased cancer risk for the affected population, even at a very low level of emissions. For the evaluation of new proposed land use projects that generate TACs, such as diesel-fueled engines, the SLOAPCD has defined the excess cancer risk significance threshold at 10 in a million.

Localized CO Concentrations

Localized CO concentrations associated with the proposed project would be considered a less-than-significant impact if: (1) Traffic generated by the proposed project would not result in deterioration of signalized intersection level of service (LOS) to LOS E or F; or (2) the project would not contribute additional traffic to a signalized intersection that already operates at LOS of E or F (Caltrans 1996).

Odors

Screening of potential odor impacts is typically recommended for the following two situations:

- Projects that would potentially generate odorous emissions proposed to locate near existing sensitive receptors or other land uses where people may congregate; and
- Residential or other sensitive receptor projects or other projects that may attract people locating near existing odor sources.

If the proposed project would locate receptors and known odor sources within one mile of each other, a full analysis of odor impacts is recommended. Known odor sources of primary concern, as identified by the SLOAPCD include landfills, transfer stations, asphalt batch plants, rendering plants, petroleum refineries, and painting/coating operations, as well as, composting, food processing, wastewater treatment, chemical manufacturing, and feedlot/dairy facilities.

Methodology

Short-term emissions associated with construction activities are largely dependent on the type of development proposed, area of ground disturbance, number of buildings to be demolished, equipment required, and construction schedules. Long-term operational emissions are typically associated with the operational of mobile sources, stationary sources (e.g., boilers, generators), and area sources (e.g., landscape maintenance, and energy use. However, because much of this information for specific future development projects and the timing of such development is unknown at this time, net increases in future construction and operational emissions and associated air quality impacts were qualitatively discussed.

Relevant Proposed GPU Goals and Policies

The 2045 General Plan includes numerous goals and policies that would reduce air contaminant emissions. Some of the most relevant of these goals and policies include, but are not limited to, the following:

Goal PSI-6: Increased development and use of clean, renewable energy systems

Policy PSI-6.1: Onsite Renewable Energy. Facilitate the installation of onsite renewable energy systems for residences and places of business.

Policy PSI-6.2: Energy Efficient Planning and Building Design. Encourage energy-efficient site planning and building design/construction.

- *Action A:* Implement streamlined building permit review processes for onsite energy systems.
- *Action B:* Continue to implement the California Green Building Standards.

Goal REC-7: Improve air quality and reduced health risks

Policy REC-7.1: Clean Air. Support regional efforts to maintain clean air.

- *Action A:* Require dust control and emissions limitations during project construction.
- *Action B:* Adopt circulation policies that encourage vehicle trip reductions consistent with the Mobility Element**,** and support regional programs to maintain clean air.
- *Action C:* Concentrate new intensive development at identified nodes and commercial corridors to help reduce vehicle trips.
- *Action D:* Continue to support the development of Park-and-Ride facilities in appropriate locations.

Goal MO-1: A safe, multimodal, interconnected, and efficient circulation system that serves all community members

Policy MO-1.2: Multimodal Options. Increase pedestrian and bicycle connections and safety between residential areas and commercial areas along major corridors, parks and recreation opportunities, and neighboring communities.

Policy MO-1.3: Regional Facilities. Provide regional roadway facilities that minimize through-traffic intrusion on local streets and mitigate impacts on local traffic.

Policy MO-1.4: Congestion Management and Trip Reduction. Encourage mixed-use and jobs focused infill development that is served by multi-modal facilities to support reductions in regional and local vehicle miles traveled (VMT).

Policy MO-1.6: Truck Routes. Ensure the new and existing business that use large trucks as a core part of their operations, more than just routine delivery, minimize maintenance impacts on City infrastructure and noise impacts on residents.

Goal MO-4: Safe, functional, and appealing bicycle, pedestrian, and equestrian (in rural areas) facilities that allow convenient multi-modal mobility

Policy MO-4.1: Coordination and Planning. Provide “backbone” pedestrian, bicycle, and equestrian systems that link residential, commercial, recreational, and regional areas.

Policy MO-4.2: Pedestrian Mobility. Ensure pedestrian safety, enhance pedestrian comfort, and promote walking as an alternative to vehicle travel, with priority in retail districts and multi-family neighborhoods.

Policy MO-4.3: Bicycle Mobility. Promote bicycle mobility and increase bicyclist safety with new/upgraded facilities and amenities.

Policy MO-4.4: Rural Trails. Provide for walkways, bikeways, and horse trails without curbs and sidewalks in rural areas.

Policy MO-4.5: School and Park Connections. Provide a comprehensive system of routes to schools and parks.

Goal MO-5: Reliable alternative travel modes that reduce traffic congestion and improve air quality.

Policy MO-5.1: Single-Occupancy Vehicle Alternatives. Promote alternatives to single-occupancy vehicle travel, particularly for commute trips.

Policy MO-5.2: Public Transit. Support the evolution of public transit to meet the changing needs for local and regional access, including fixed route and demand responsive service.

Policy MO-5.3: County TDM Requirements. Seek alternatives that bring Atascadero closer to compliance with Transportation Demand Management program requirements of the San Luis Obispo County Clean Air Plan to reduce peak period trip generation.

Goal MO-6: Anticipating and addressing emerging mobility technology proactively to allow new systems and industries to operate in Atascadero on the City's terms.

Policy MO-6.1: Changing Mobile Technology. Encourage the use of mobile or other electronic devices with similar on-demand hailing functions, particularly for seniors, persons with disabilities, and other mobility challenged people.

Policy MO-6.2: Autonomous Vehicles. Update, when warranted, transportation systems and policies as autonomous and automated vehicles and their attendant facilities are developed locally and regionally.

Goal LU-4: A dedicated, focused area for industrial activity that minimizes impact on nearby residential neighborhoods and protected open space areas

Policy LU-4.3: Buffer Industrial Uses. Provide buffers between industrial and residential uses. Focus heavy industrial sites away from residential uses.

Goal REC-3: Dedicated system of open space that upholds the community's rural character, local biodiversity, natural landscape, and enjoyment of recreation

Policy REC-3.3: Grading. Prevent unnecessary intensive grading of development sites.

Goal LU-2: Enhanced major corridors that serve regional focused, distinct, and economically viable nodes.

Policy LU-2.3: Mid-block Infill. Promote flexible land use patterns in areas between activity nodes along El Camino Real and support increased residential densities adjacent to and along commercial corridors to support commercial business activity and growth.

Policy LU-2.4: Mixed-Use Areas. Create mixed-use districts in locations that benefit from the synergy of commercial and residential uses.

Policy LU-2.5: Multi-Modal Corridors. Improve pedestrian and bicycle facilities along El Camino Real and Morro Road. Major corridors should be safe, comfortable, and enjoyable for pedestrians, bicyclists, and drivers alike.

Impacts and Mitigation Measures

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

SLOAPCD Clean Air Plan

As part of the CCAA, the SLOAPCD is required to develop a plan to achieve and maintain the state ozone standard by the earliest practicable date. The CAP was adopted by SLOAPCD on March 26, 2002. The SLOAPCD's 2001 CAP addresses the attainment and maintenance of state and federal ambient air quality standards. The SLOAPCD's CAP outlines the District's strategies to reduce ozone-precursor pollutants [i.e., reactive organic gas (ROG) and NO_X] from a wide variety of sources. The SLOAPCD's CAP includes a stationary-source control program, which includes control measures for permitted stationary sources; as well as transportation and land use management strategies to reduce motor vehicle emissions and use. The stationary-source control program is administered by SLOAPCD. Transportation and land use control measures are implemented at the local or regional level, by promoting and facilitating the use of alternative transportation options, increased pedestrian access and accessibility to community services and local destinations, reductions in VMT, and promotion of congestion management efforts. In addition, local jurisdictions also prepare population forecasts, which are used by SLOAPCD to forecast population-related emissions and air quality attainment, including those contained in the SLOAPCD's CAP. The 2001 CAP emissions forecasts and control strategies were built using regional growth assumptions, specifically the population, housing, and employment projections provided by SLOCOG. Therefore, if a project is consistent with current SLOCOG growth forecasts, it is generally considered part of the expected growth scenario that the air quality plan anticipated. For these reasons, consistency with the CAP has been evaluated based on the following questions:

1. Are the population and employment projections attributable to the 2045 GPU/ZCU equal to or less than those identified in the most recent growth forecasts adopted by SLOCOG and would implementation of the 2045 GPU/ZCU result in an improved jobs/housing ratio?
2. Is projected VMT growth attributable to the 2045 GPU/ZCU equal to or less than the corresponding projected rate of population growth?
3. Is the 2045 GPU/ZCU consistent with the land use and transportation control measures (TCMs) identified in the CAP?
4. Is projected VMT growth attributable to the 2045 GPU/ZCU equal to or less than applicable VMT thresholds established by the State Office of Planning and Research (OPR) for the evaluation of VMT impacts associated with land use plans?

If the answer to all of the above questions is yes, then the 2045 GPU/ZCU would be considered to be consistent with the CAP. If the answer to any one of the above questions is no, then the emissions reductions projected in the CAP may not be achieved, which could delay or preclude attainment of the state ozone standard and the 2045 GPU/ZCU would be considered inconsistent with the CAP.

Projected Population & Employment Growth

The 2045 GPU/ZCU is anticipated to guide sustainable population growth throughout the planning period and includes City population and employment growth projections based on land capacity, ability to expand infrastructure, and anticipated growth rates for both residential and commercial sectors. The City's forecasted population for the 2045 GPU/ZCU is 37,279. In comparison to year 2024 conditions, the

proposed 2045 GPU/ZCU would increase the City's population by 6,596 residents, an approximate 21.5 percent increase. Employment is expected to increase from 9,729 jobs in 2024 to 12,914 jobs in 2045, improving the City's jobs/housing ratio from 0.77 to 0.83.

According to the SLOCOG 2060 Regional Growth Forecast, the population of the City of Atascadero is projected to increase to 31,841 residents by 2040 and to 32,342 residents by 2050. Employment is projected to increase to 12,307 jobs in 2040 and 12,988 jobs in 2050 (SLOCOG 2025). Overall, the anticipated growth in the City through 2045 is similar to the SLOCOG growth projections for the City. However, projected increases in population attributable to the proposed 2045 GPU/ZCU (i.e., 37,279) would be higher than the SLOCOG's projections of 31,841 residents by 2040 and to 32,342 residents by 2050 (SLOCOG 2025).

According to SLOCOG's 2019 Regional Housing Needs Assessment, the City has more housing units than jobs, indicative of a "jobs-poor" community. The City's jobs-to-housing ratio is estimated to worsen from a year 2015 ratio of 0.77 to a 0.71 jobs-housing ratio by the year 2030 (SLOCOG 2019). With implementation of the proposed 2045 GPU/ZCU, the number of housing units would total approximately 15,550 and the number of jobs would total approximately 12,914, which would result in a jobs/housing ratio of 0.83 for year 2045. Although the 2045 GPU/ZCU would result in increased development, population, and employment, the jobs/housing ratio for the City would be projected to improve with implementation of the 2045 GPU/ZCU.

VMT Growth

The 2045 GPU/ZCU would be more VMT-efficient on a regional basis than the current General Plan as it would focus growth in areas with a mix of uses, more travel options, and at levels that are more supportive of transit use. The City's large geographic area and existing low-density development patterns require longer vehicle trips and reduce non-auto travel options. The 2045 GPU/ZCU focuses growth in more VMT-efficient areas at higher densities and with more travel options. In addition, projected improvements in the jobs/housing ratio with implementation of the 2045 GPU/ZCU would help to further reduce VMT by providing more jobs locally, thereby, reducing VMT travel and to out-of-City locations. As a result, the 2045 GPU/ZCU would produce less VMT per capita and per employee than the current General Plan (CCTC 2025).

Daily VMT within the City's sphere of influence is projected to increase from 556,552 daily miles in year 2024 to 602,702 daily miles in 2045, an approximate 8.3 percent increase in VMT. As noted above, the proposed 2045 GPU/ZCU would increase the City's population by approximate 21.5 percent in 2045. The percent increase in VMT attributable to the proposed 2045 GPU/ZCU (8.3 percent) would not exceed the percent increase in population (21.5 percent).

Transportation and Land Use Control Measures

The SLOAPCD's CAP includes multiple transportation and land use control measures intended to reduce emissions through reductions in VMT and the promotion of alternative forms of transportation. A summary of the more relevant control measures and the 2045 GPU/ZCU's consistency with these measures is provided in Table 10. As noted in Table 10, the 2045 GPU/ZCU uses a designator system consisting of "Placetypes." Each Placetype category defines both the primary uses of land allowed and the character of those uses. For instance, the Mixed Use Placetype is intended to promote a flexible and compatible mix of residential and commercial uses in focused areas. The Downtown Mixed Use Placetype

encourages an eclectic and complementary mix of uses, pedestrian-scale development, and locally owned retail and restaurant businesses with upper-story residential and office units. The 2045 GPU/ZCU is expected to result in reductions in vehicle trips/ trip lengths, improved accessibility to alternative means of transportation (e.g., transit), and overall reductions in VMT. In addition, the City's jobs-housing ratio would improve from 0.75 to 0.84. Numerous other goals and policies have been included in the 2045 GPU/ZCU that would support regional air quality and transportation planning efforts, including policies to improve accessibility to transit, bicycle and public transit improvements, park and ride lots, traffic flow improvements, and various other policies intended to reduce vehicle use. However, even with implementation of the proposed goals and policies, the proposed 2045 GPU/ZCU would generate residential and employment-based VMT at levels that are above OPR's recommended thresholds (CCTC 2025). As a result, increases in VMT attributable to the 2045 GPU/ZCU would be inconsistent with regional planning efforts, such as the Regional Transportation Plan. Increases in VMT may result in long-term increases of mobile-source air pollutants not accounted for in the CAP. As a result, long-term increases of regional pollutants and consistency with the SLOAPCD's CAP would be considered a **potentially significant** impact**.**

Table 10. Consistency with SLOAPCD Clean Air Plan Control Measures

SLOAPCD's Clean Air Plan Control Measures	2045 GPU/ZCU Goals & Policies
L-1 Planning Compact Communities. Dwelling units for those who prefer higher density living should be clustered in urban core areas and village centers, thus creating a market for convenience retailing and services that contribute to the richness of an urban life-style. As commercial facilities become integrated into residential areas in a mixed-use development pattern, the need to use an automobile for routine trips diminishes.	***Consistent.*** The 2045 GPU/ZCU uses a designator system consisting of "Placetypes." Each Placetype category defines both the primary uses of land allowed and the character of those uses. For instance, the Mixed Use Placetype is intended to promote a flexible and compatible mix of residential and commercial uses in focused areas. The Downtown Mixed Use Placetype encourages a mix of uses, pedestrian-scale development, and locally owned retail and restaurant businesses. In comparison to the existing General Plan, the 2045 GPU/ZCU would result in reductions in vehicle trips/ trip lengths, improved accessibility to alternative means of transportation (e.g., transit), and overall reductions in VMT on a per capita basis.
L-2 Providing for Mixed Land Use. The mixing of compatible commercial and residential land uses should be encouraged when it will reduce dependence on the automobile, or it improves the balance between jobs and housing.	
L-3 Balancing Jobs and Housing. An imbalance between jobs and housing results in longer travel distances between home and work and, consequently, more air pollution from cars.	***Consistent.*** With implementation of the 2045 GPU/ZCU, the City's jobs-housing ratio would improve from 0.75 to 0.84.
L-4 Circulation Management. The primary goal of the recommended Circulation Management Policies and Programs is to encourage the design and construction of the county's transportation system in a manner that supports alternative travel modes and decreases reliance on single occupant motor vehicles. To this end, improving accessibility for all travelers, not just drivers, is the primary transportation objective.	***Consistent.*** The 2045 GPU/ZCU incorporates various goals and policies to support regional transportation planning and management efforts, including numerous measures intended to encourage the design and construction of alternative travel modes. Such policies include, but not limited to: Policies MO-1.1 – MO-1.6, MO-3.1, MO-3.2, MO-4.1 – MO-4.5, and MO-5.1 – MO-5.3,
L-5 Communication, Coordination and Monitoring. Changes in land use and circulation planning will be necessary to maintain clean air in the county over the long term. These same changes, however, will also provide benefits in reduced traffic congestion. It is very important to the long-term	***Consistent.*** The 2045 GPU/ZCU incorporates various goals and policies to support regional air quality and transportation planning efforts, including policies to maintain and improve coordination with other regional agencies. Such

SLOAPCD's Clean Air Plan Control Measures	2045 GPU/ZCU Goals & Policies
success of the Clean Air Plan that local and regional jurisdictions and the District work together to achieve these mutual goals.	policies include, but not limited to: Policies MO-1.1, MO-1.2, MO-1.3, MO-3.1, MO-3.2, MO-4.1, MO-4.3, MO-4.4, MO-5.2, MO-5.3, and MO-6.3.
T-2A Local Transit System Improvements. The focus of this measure is on improving local transit service and infrastructure to increase ridership by enhancing the convenience and overall viability of the system. Key elements of the measure include an ongoing improvements to bus boarding areas, development of multi-modal centers, service expansion, and replacement of older diesel transit buses with new diesel-powered vehicles meeting ARB's October 31, 2002 emission certification standards or CNG vehicles meeting one of ARB's optional emission credit standards.	***Consistent.*** The 2045 GPU/ZCU incorporates various goals and policies to support regional air quality and transportation planning efforts, including policies to improve accessibility to transit, bicycle and public transit improvements, park and ride lots, traffic flow improvements, and various other policies intended to reduce vehicle use. Such policies include, but not limited to: Policies MO-1.1 – MO-1.5, and MO-5.1 – MO-5.3.
T-2B Regional Public Transit Improvements. The focus of this measure is to improve regional transit service and infrastructure with the goal of increasing ridership rates in excess of countywide population growth rates. CCAT's ridership has risen by over 95% from 143,871 in 1991 to 281,504 in 2000.	
T-3 Bicycling and Bikeway Enhancements. The goal of this measure is to achieve a county-wide average bicycle mode share of 5% by 2005.	***Consistent.*** The 2045 GPU/ZCU incorporates various goals and policies to support regional air quality and transportation planning efforts, including policies to improve accessibility to transit, bicycle and public transit improvements, park and ride lots, traffic flow improvements, and various other policies intended to reduce vehicle use. Such policies include, but not limited to: Policies REC-7.1, MO-1.1 – MO-1.6, MO-4.1 – MO-4.5, MO-5.1, MO-5.3, and LU-2.5.
T-4 Park and Ride Lots. Park and Ride (P&R) lots provide a staging area for ridesharing activities. The most common use of P&R lots in San Luis Obispo County is as a meeting point for car- and vanpoolers. Transit connections are available at some lots within a short walk, and bike lockers are available at most lots; however, the primary use is for automobile parking. In San Luis Obispo County, P&R lots are administered by Caltrans and SLOCOG.	***Consistent.*** The 2045 GPU/ZCU incorporates various goals and policies to support regional air quality and transportation planning efforts, including policies to improve accessibility to park and ride lots. Such policies include, but not limited to: Policies MO-5.1 – MO-5.3. Specifically, Policy 5.2 includes "Action C, Support and encourage the use and expansion of Park & Ride facilities and other rideshare infrastructure."
T-6 Traffic Flow Improvements. This control measure focuses on traffic flow improvements and "traffic-calming" to improve the flow of all transportation modes. Traffic-calming refers to a full range of methods designed to improve the flow of nonmotorized transportation by slowing down the speed of motorized traffic. Traffic-calming is generally used in residential areas on non-arterial local streets and roads. The goal of this measure is to improve the road system and infrastructure in a way that increases its efficiency, reduces emissions, and supports the other Transportation Control Measures in this Plan.	***Consistent.*** The 2045 GPU/ZCU incorporates numerous policies to improve accessibility traffic flow to increase efficiency, reduce emissions, and support other measures, such as the use of alternative means of transportation. Such policies include, but not limited to: Policies MO-1.1 – MO-1.6, MO-2.2, MO-4.1 – MO-4.5, MO-5.1 – MO-5.3, MO-6.1, MO-6.2, MO-6.3, and LU-2.3 – LU-2.5.
T-8 Teleworking, Teleconferencing, and Telelearning. Rapid advances in personal computer capability and the advent of video and on-line services have made these technologies ideal trip reduction strategies.	***Consistent.*** The 2045 GPU/ZCU incorporates various goals and policies to support regional air quality and transportation planning efforts, including policies to support emerging mobile technology. Such policies include, but not limited to: Policies MO-6.1 – MO-6.3, and LU-5.3.

Proposed GPU Policies that Provide Mitigation

The proposed 2045 GPU/ZCU includes numerous goals and policies that would help to reduce criteria pollutant emissions, energy demands, and vehicle miles traveled. Some of the more relevant GPU policies include Policy REC-7.1,a, PSI-6.1, PSI-6.2, MO-1.2 – MO-1.6, MO-4.1 – MO-4.5, MO-5.1 – MO-5.3, MO-6.1, MO-6.2, and LU-2.3 – LU-2.5.

Mitigation Measures

No additional measures have been identified that would further reduce this impact.

Significance after Mitigation

It is important to recognize that the 2045 GPU/ZCU focuses growth in more VMT-efficient areas at higher densities and with more travel options, so it produces less VMT per capita and per employee than the existing General Plan. However, even with this focus on VMT-reducing development and implementation of 2045 GPU/ZCU policies, estimated increases in VMT would exceed OPR's recommended thresholds (CCTC 2025). In accordance with SLOAPCD-recommended guidance, future development projects would be evaluated for consistency with the SLOAPCD's CAP, which may result in reductions in project-related VMT and associated emissions. However, no additional policy-oriented mitigation measures have been identified that would further reduce this impact. As a result, this impact would be considered **significant and unavoidable**.

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

Long-term Operational Emissions

As noted above, the 2045 GPU/ZCU includes various goals and policies that would reduce long-term operational emissions, including measures to reduce vehicle miles traveled, and promote alternative means of transportation. The promotion of alternatives to automotive transportation can help to reduce local and regional mobile-source emissions and energy consumption. Refer to Impact AQ-1 for a discussion of consistency with the SLOAPCD's CAP and long-term air quality impacts attributable to the 2045 GPU/ZCU.

Short-term Construction Emissions

In comparison to existing conditions, the proposed 2045 GPU/ZCU would result in a net increase of approximately 205 single-family dwelling units, 2,688 multi-family dwelling units, 481,454 square feet of commercial retail use, 595,666 square feet of commercial office use, and 467,501 square feet of industrial use. Construction activity associated with these land uses would cause temporary emissions of various air pollutants associated with project construction, such as demolition, grading, construction worker travel, hauling of construction supplies, fuel combustion by equipment, and architectural coating would generate pollutant emissions. These construction activities would temporarily create emissions of dust, fumes, equipment exhaust, and other air contaminants. The extent of daily emissions, particularly ROGs and NO_X emissions, generated by construction equipment, would depend on the equipment used and the hours of operation for each project. The extent of $PM_{2.5}$ and PM_{10} emissions would depend upon the amount of disturbed soils, the length of disturbance time, whether existing structures are demolished, whether

excavation is involved, and whether transporting excavated materials offsite is necessary. Dust emissions can lead to both nuisance and health impacts.

The SLOAPCD has not established plan-level significance thresholds for construction air pollutant emissions. At this time, most projects facilitated by the proposed 2045 GPU/ZCU do not have sufficient detail to allow project-level analysis. As a result, short-term air quality impacts would be considered **potentially significant**.

Proposed GPU Policies that Provide Mitigation

The 2045 GPU/ZCU includes numerous goals and policies that would help to reduce criteria pollutant emissions commonly associated with construction and operational activities. Some of the more relevant GPU policies include Policy REC-7.1,a, PSI-6.1, PSI-6.2, MO-1.2 – MO-1.6, MO-4.1 – MO-4.5, MO-5.1 – MO-5.3, MO-6.1, MO-6.2, and LU-2.3 – LU-2.5.

Mitigation Measures

No additional measures have been identified that would further reduce this impact.

Significance After Mitigation

The City of Atascadero development review process requires a review of consistency with local and state policies, including SLOAPCD regulations and CEQA. Current with existing practices, each new discretionary development project associated with community buildout pursuant with the 2045 General Plan and Zoning Code Update would be required to be reviewed for consistency with these policies to help reduce local and regional impacts. Potentially significant impacts would require implementation of additional project-specific mitigation measures to further reduce project-generated emissions and associated air quality impacts; however, given the region's current nonattainment status and uncertainty regarding the timing and intensity of development activities, the need for project-specific mitigation measures for individual development projects, and the effectiveness of future mitigation for individual development projects, short-term and long-term air quality impacts would be considered **significant and unavoidable**.

Impact AQ-3: Would the project expose sensitive receptors to substantial pollutant concentrations?

Sensitive receptors include, but are not limited to, schools, parks and playgrounds, day care facilities, nursing homes, hospitals, and residential dwelling unit(s). The 2045 GPU/ZCU would include the development of land uses considered to be sensitive receptors, as well as new development near existing sensitive receptors. Activities associated with implementation of the 2045 GPU/ZCU could potentially include short-term, construction sources of TACs and long-term, operational sources of TACs, including stationary and mobile sources. As noted earlier in this report, TACs are a defined set of airborne pollutants that may pose a present or potential hazard to human health and $PM_{2.5}$ can cause a wide range of health effects.

Short-Term Construction Emissions

Construction projects can result in short-term increases of TACs, as well as emissions of airborne fugitive dust. Emissions of DPM emitted from construction vehicles is of particular concern. Exposure to DPM results in a greater incidence of chronic non-cancer health effects, such as cough, labored breathing, chest

tightness, wheezing, and bronchitis. However, various other TACs from diesel exhaust also contribute to both cancer and non-cancer health risks. Construction-generated emissions of $PM_{2.5}$ can also contribute to significant health impacts, particularly among the more sensitive population groups (i.e., children, elderly, etc.).

In addition to emissions of DPM, other pollutants of potential localized concern include, but are not limited to, fugitive dust, airborne asbestos; as well as, airborne coccidioides fungus spores, which may contribute to increased occurrences of Valley Fever (also called coccidioidomycosis or "cocci"). Emissions of fugitive dust are largely dependent on the area of potential disturbance and environmental conditions at the site, such as wind speeds, wind direction, soil moisture content. Airborne concentrations of asbestos can occur during demolition of older structures that contain asbestos-containing materials; as well as, the disturbance of asbestos-containing soils. Some areas identified by the SLOAPCD as having a potential to contain naturally-occurring asbestos have been generally identified within the western areas of the City. A map depicting areas having a potential for naturally-occurring asbestos is included in Appendix A. Valley Fever is a disease caused by the coccidioides fungus that grows in the soil and dirt in some areas of California and tends to be more prevalent in drier, previously undisturbed soils. The disturbance of such soils may result in increases in occurrences of Valley Fever.

The amount of emissions generated during construction of individual projects and potential to result in increased exposure of individuals to airborne pollutants would vary depending on numerous factors, including the size of the development, the type, age and number of pieces of equipment required, and hours of use, site conditions, and environmental conditions. Furthermore, it is anticipated that multiple construction projects could occur simultaneously within a given year and within a given area. Without detailed construction information (i.e., construction schedules, demolition, grading, excavation, and construction requirements), construction-generated emissions of TACs and other airborne pollutants of local concern associated with individual development projects cannot be quantified at this time. As a result, exposure of sensitive receptors to short-term construction emissions would be considered **potentially significant**.

Long-Term Operational Emissions

Toxic Air Contaminants

Development of future land uses may include potential stationary sources of TACs, such as diesel-powered emergency-use power generators. The type and level of TAC emissions emitted would depend upon the nature of the land use and the specific methods and operations that involve toxic air emissions. Pursuant to SLOAPCD rules and regulations, such as SLOAPCD Rule 219 (Toxics New Source Review Rule), new and modified stationary sources of emissions are required to mitigate emissions using best available control technology and to offset emissions when above thresholds

In addition to the long-term exposure to stationary emission sources, new land uses may also be exposed to emissions from mobile sources. Major roadways of potential concern with regard to mobile-source TACs typically include roadways with average-daily traffic (ADT) volumes of 100,000 or more. Within the planning area, U.S. Highway 101 (US-101) is considered the primary source of mobile-source TAC emissions. Average-daily traffic volumes along US-101 located within the city range from approximately 55,000 to approximately 65,000 (CCTC 2025).

The proposed General Plan could include opportunities for new development and redevelopment near sources of TACs, including US-101, industrial land uses, or dry cleaners. In addition, depending on the type of future development, some projects contribute substantially to existing vehicle traffic on area roadways, particularly diesel-fueled heavy-duty trucks associated with industrial development. Such development could result in the exposure of sensitive receptors to mobile-sources of TACs. Given that future development could potentially result in increased long-term exposure of sensitive land uses to TACs, this impact would be considered **potentially significant**.

Mobile-Source Carbon Monoxide

Buildout of the 2045 GPU/ZCU would result in new development or redevelopment that would generate additional vehicle trips on area roadways. Areas with high vehicle density, such as congested intersections, have the potential to create concentrations of CO ("CO hotspots") and could potentially expose sensitive receptors to harmful levels of pollution.

Localized CO concentrations are the result of the volume of cars along a road and the level of emissions generated by vehicles, rather than the flow of traffic. Vehicle CO emissions have declined over time due to stringent State standards for vehicle emissions and would continue to decline as more stringent standards are put in place. However, CO hotspots can occur if large numbers of vehicles are concentrated on a roadway. This becomes a concern when the LOS of a given roadway is negatively affected by a project. Of particular concern are major signalized intersections that operate at unacceptable levels of service (i.e., LOS E, or worse). According to the traffic analysis, the signalized intersection of El Camino Real/San Anselmo Road is projected to operate at LOS F under future cumulative conditions. Therefore, long-term exposure to localized CO concentrations would be considered **potentially significant**.

Proposed GPU Policies that Provide Mitigation

Relevant GPU policies pertaining to short-term and long-term exposure to localize pollutant concentrations include Policy REC-7.1,a, LU-4.3, and REC-3.3.

Proposed Mitigation Measures

No additional measures have been identified that would further reduce this impact.

Significance After Mitigation

The 2045 GPU/ZCU policies REC-7.1,a and REC-3.3 would help to minimize construction-generated fugitive dust associated with future land use development projects. In addition, Policy LU-4.3 would provide buffer areas between industrial and residential land uses that would help to minimize potential exposure to operational TACs. In accordance with SLOAPCD's guidance, future development projects would be evaluated for potential short-term; as well as, long-term exposure to localized pollutants, including construction-generated emissions, emissions of TACs, as well as, other airborne pollutants, such as asbestos, CO, and coccidioides fungus spores. However, even with compliance with all State and local regulations, it is conceivable that some development projects may be large enough or close enough to a sensitive receptor that applicable project-level significance thresholds would be exceeded. In the event that a significant impact is identified for an individual project, SLOAPCD-recommended mitigation measures would be required to reduce project-related impacts. However, even with mitigation, it may not be possible to reduce potential emissions of TACS or exposure to localized airborne pollutants and all

health-related risks to nearby receptors to levels below the SLOAPCD-recommended significance thresholds. As a result, this impact would be considered **significant and unavoidable**.

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

The occurrence and severity of odor impacts depends on numerous factors, including the nature, frequency, and intensity of the source, wind speed and direction, and the sensitivity of the receptors. While offensive odors rarely cause any physical harm, they still can be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and regulatory agencies. Projects with the potential to frequently expose members of the public to objectionable odors would be deemed to have a significant impact.

Due to the subjective nature of odor impacts, the number of variables that can influence the potential for an odor impact, and the variety of odor sources, there are no quantitative or formulaic methodologies to determine if potential odors would have a significant impact. Project-specific analysis would be assessed for new development planned for in the 2045 GPU/ZCU.

The intensity of an odor source's operations and its proximity to sensitive receptors influences the potential significance of odor emissions. Land uses that typically produce objectionable odors with the potential to affect a substantial number of people include landfills, rendering plants, chemical plants, agricultural uses, wastewater treatment plants, refineries, fast food restaurants, bakeries, and coffee roasting facilities. SLOAPCD Rule 402, Nuisance, prohibits the discharge of air contaminants or other materials, including odors, that would cause injury, detriment, nuisance, or annoyance to a considerable number of individuals. As a result, with compliance with SLOAPCD Rule 402, the 2045 GPU/ZCU would not result in the exposure of a substantial number of people to objectionable odors. This impact would be considered **less than significant**.

GREENHOUSE GAS

Existing Setting

To fully understand global climate change, it is important to recognize the naturally occurring "greenhouse effect" and to define the greenhouse gases (GHGs) that contribute to this phenomenon. Various gases in the earth's atmosphere, classified as atmospheric GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space and a portion of the radiation is absorbed by the earth's surface. The earth emits this radiation back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation. Greenhouse gases, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, this radiation that otherwise would have escaped back into space is now retained, resulting in a warming of the atmosphere. This phenomenon is known as the greenhouse effect. Among the prominent GHGs contributing to the greenhouse effect are carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Primary GHGs attributed to global climate change, are discussed, as follows:

- **Carbon Dioxide**. Carbon dioxide (CO_2) is a colorless, odorless gas. CO_2 is emitted in a number of ways, both naturally and through human activities. The largest source of CO_2 emissions globally is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, industrial facilities, and other sources. Several specialized industrial production processes and product uses such as mineral production, metal production, and the use of petroleum-based products can also lead to CO_2 emissions. The atmospheric lifetime of CO_2 is variable because it is so readily exchanged in the atmosphere (U.S. EPA 2018).

- **Methane**. Methane (CH_4) is a colorless, odorless gas that is not flammable under most circumstances. CH_4 is the major component of natural gas, about 87 percent by volume. It is also formed and released into the atmosphere by biological processes occurring in anaerobic environments. Methane is emitted from a variety of both human-related and natural sources. Human-related sources include fossil fuel production, animal husbandry (enteric fermentation in livestock and manure management), rice cultivation, biomass burning, and waste management. These activities release significant quantities of methane into the atmosphere. Natural sources of methane include wetlands, gas hydrates, permafrost, termites, oceans, freshwater bodies, non-wetland soils, and other sources such as wildfires. Methane's atmospheric lifetime is about 12 years (U.S. EPA 2018).

- **Nitrous Oxide**. Nitrous oxide (N_2O) is a clear, colorless gas with a slightly sweet odor. N_2O is produced by both natural and human-related sources. Primary human-related sources of N_2O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuels, acid production, and nitric acid production. N_2O is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests. The atmospheric lifetime of N_2O is approximately 114 years (U.S. EPA 2018).

- **Hydrofluorocarbons.** Hydrofluorocarbons (HFCs) are man-made chemicals, many of which have been developed as alternatives to ozone-depleting substances for industrial, commercial, and

consumer products. The only significant emissions of HFCs before 1990 were of the chemical HFC-23, which is generated as a byproduct of the production of HCFC-22 (or Freon 22, used in air conditioning applications). The atmospheric lifetime for HFCs varies from just over a year for HFC-152a to 270 years for HFC-23. Most of the commercially used HFCs have atmospheric lifetimes of less than 15 years (e.g., HFC-134a, which is used in automobile air conditioning and refrigeration, has an atmospheric life of 14 years) (U.S. EPA 2018).

- **Perfluorocarbons.** Perfluorocarbons (PFCs) are colorless, highly dense, chemically inert, and non-toxic. There are seven PFC gases: perfluoromethane (CF_4), perfluoroethane (C_2F_6), perfluoropropane (C_3F_8), perfluorobutane (C_4F_{10}), perfluorocyclobutane (C_4F_8), perfluoropentane (C_5F_{12}), and perfluorohexane (C_6F_{14}). Natural geological emissions have been responsible for the PFCs that have accumulated in the atmosphere in the past; however, the largest current source is aluminum production, which releases CF_4 and C_2F_6 as byproducts. The estimated atmospheric lifetimes for PFCs range from 2,600 to 50,000 years (U.S. EPA 2018).

- **Nitrogen Trifluoride**. Nitrogen trifluoride (NF_3) is an inorganic, colorless, odorless, toxic, nonflammable gas used as an etchant in microelectronics. Nitrogen trifluoride is predominantly employed in the cleaning of the plasma-enhanced chemical vapor deposition chambers in the production of liquid crystal displays and silicon-based thin film solar cells. It has a global warming potential of 16,100 carbon dioxide equivalent (CO_2e). While NF_3 may have a lower global warming potential than other chemical etchants, it is still a potent GHG. In 2009, NF_3 was listed by California as a high global warming potential GHG to be listed and regulated under Assembly Bill (AB) 32 (Section 38505 Health and Safety Code).

- **Sulfur Hexafluoride**. Sulfur hexafluoride (SF_6) is an inorganic compound that is colorless, odorless, non-toxic, and generally non-flammable. SF_6 is primarily used as an electrical insulator in high-voltage equipment. The electric power industry uses roughly 80 percent of all SF_6 produced worldwide. Leaks of SF_6 occur from aging equipment and during equipment maintenance and servicing. SF_6 has an atmospheric life of 3,200 years (U.S. EPA 2018).

- **Black Carbon**. Black carbon is the strongest light-absorbing component of particulate matter (PM) emitted from burning fuels such as coal, diesel, and biomass. Black carbon contributes to climate change both directly by absorbing sunlight and indirectly by depositing on snow and by interacting with clouds and affecting cloud formation. Black carbon is considered a short-lived species, which can vary spatially and, consequently, it is very difficult to quantify associated global-warming potentials. The main sources of black carbon in California are wildfires, off-road vehicles (locomotives, marine vessels, tractors, excavators, dozers, etc.), on-road vehicles (cars, trucks, and buses), fireplaces, agricultural waste burning, and prescribed burning (planned burns of forest or wildlands) (U.S. EPA 2018).

Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule. Often, estimates of GHG emissions are presented in CO_2e, which relates each gas by its global warming potential (GWP). Expressing GHG emissions in CO_2e takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted. Table 11 provides a summary of the GWP for GHG emissions of typical concern with regard to community development projects, based on a 100-year time horizon. As

indicated, CH_4 traps over 25 times more heat per molecule than CO_2, and N_2O absorbs roughly 298 times more heat per molecule than CO_2. Additional GHGs with high GWP include Nitrogen trifluoride, Sulfur hexafluoride, Perfluorocarbons, and black carbon.

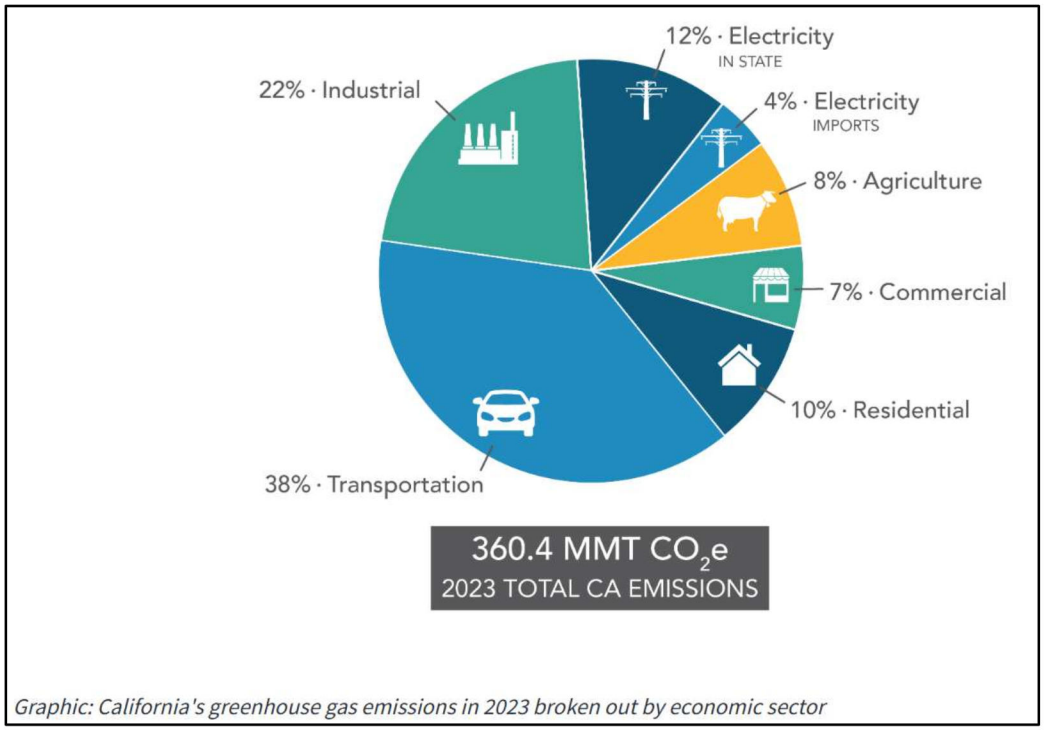
Table 11. Global Warming Potential for Greenhouse Gases

Greenhouse Gas	Global Warming Potential (100-year)
Carbon Dioxide (CO_2)	1
Methane (CH_4)	25
Nitrous Dioxide (N_2O)	298
**Based on IPCC GWP values for 100-year time horizon* *Source: IPCC 2007*	

Statewide GHG Emissions

In 2023, GHG emissions within California totaled 360.4 million metric tons (MMT) of CO_2e. GHG emissions, by sector, are summarized in Figure 1. Within California, the transportation sector is the largest contributor, accounting for approximately 38 percent of the total state-wide GHG emissions. Emissions associated with industrial uses are the second-largest contributor, totaling roughly 22 percent. Electricity generation totaled roughly 16 percent. Other major emission sources included commercial uses, residential uses, agriculture, and refrigerants (ARB 2026a).

Figure 1. California GHG Emissions Inventory by Sector & Subsector



Graphic: California's greenhouse gas emissions in 2023 broken out by economic sector

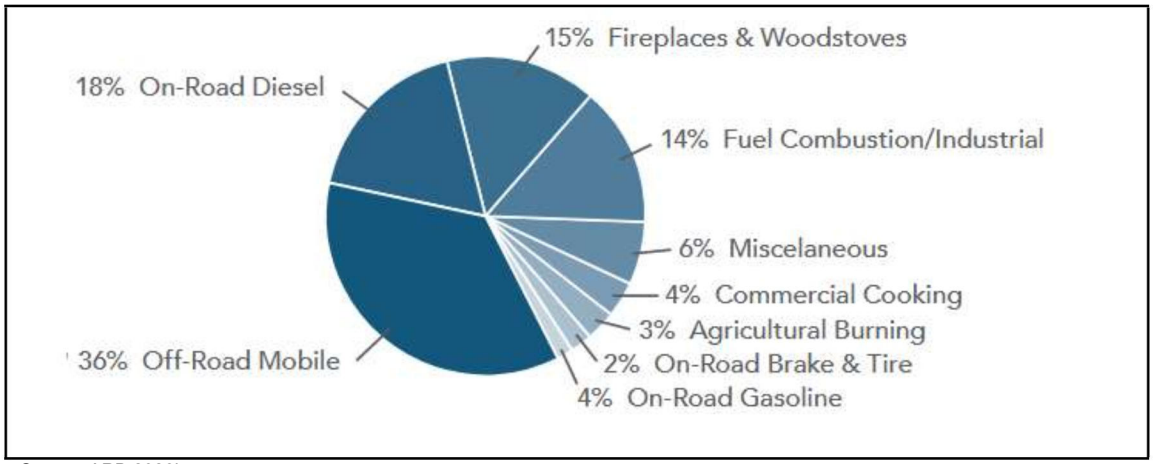
Source: ARB 2026a

Short-Lived Climate Pollutants

Short-lived climate pollutants (SLCPs), such as black carbon, fluorinated gases, and CH_4 also have a dramatic effect on climate change. Though short-lived, these pollutants create a warming influence on the climate that is many times more potent than that of carbon dioxide.

As part of the ARB's efforts to address SLCPs, the ARB has developed a statewide emission inventory for black carbon. The black carbon inventory will help support the implementation of the SLCP Strategy, but it is not part of the State's GHG Inventory that tracks progress toward the State's climate targets. The most recent inventory for year 2013 conditions is depicted in Figure 2. As depicted, off-road mobile sources account for a majority of black carbon emissions totaling roughly 36 percent of the inventory. Other major anthropogenic sources of black carbon include on-road transportation, residential wood burning, fuel combustion, and industrial processes (ARB 2026b).

Figure 2. California Black Carbon Emissions Inventory (Year 2013)



Source: ARB 2026b

Effects of Global Climate Change

There are uncertainties as to exactly what the climate changes will be in various local areas of the earth. There are also uncertainties associated with the magnitude and timing of other consequences of a warmer planet: sea-level rise, spread of certain diseases out of their usual geographic range, the effect on agricultural production, water supply, sustainability of ecosystems, increased strength and frequency of storms, extreme heat events, increased air pollution episodes, and the consequence of these effects on the economy.

Within California, climate changes would likely alter the ecological characteristics of many ecosystems throughout the state. Such alterations would likely include increases in surface temperatures and changes in the form, timing, and intensity of the precipitation. For instance, historical records are depicting an increasing trend toward earlier snowmelt in the Sierra Nevada. This snowpack is a principal supply of water for the state, providing roughly 50 percent of the state's annual runoff. If this trend continues, some areas of the state may experience an increased danger of floods during the winter months and possible exhaustion of the snowpack during spring and summer months. Earlier snowmelt would also impact the State's energy resources. Currently, approximately 20 percent of California's electricity comes from

hydropower. Early exhaustion of the Sierra snowpack may force electricity producers to switch to more costly or non-renewable forms of electricity generation during the spring and summer months. A changing climate may also impact agricultural crop yields, coastal structures, and biodiversity. As a result, changes in climate will likely have detrimental effects on some of California's largest industries, including agriculture, wine, tourism, skiing, recreational and commercial fishing, and forestry.

Regulatory Framework

Federal

2009 Greenhouse Gas Endangerment Finding

The 2009 Greenhouse Gas Endangerment Finding, issued by the U.S. EPA on December 7, 2009, determined that six key greenhouse gases (carbon dioxide, methane, nitrous oxide, HFCs, PFCs, and SF6) threaten the public health and welfare of current and future generations. It established that emissions from new motor vehicles contribute to this pollution. This finding, rooted in the Massachusetts v. EPA (2007) ruling, required the EPA to regulate GHGs under the Clean Air Act. The 2009 Greenhouse Gas Endangerment Finding served as a prerequisite for regulating emissions from new motor vehicles and new motor vehicle engines. This finding provided authority for the U.S. EPA to prescribe standards for GHG emissions.

On February 12, 2026, the U.S. EPA finalized its rescission of the 2009 Greenhouse Gas Endangerment Finding, which served as a prerequisite for regulating emissions from new motor vehicles and new motor vehicle engines; as well as, all subsequent federal GHG emissions standards promulgated pursuant to the Endangerment Finding. Absent this finding, EPA lacks statutory authority under Section 202(a) of the Clean Air Act to prescribe standards for GHG emissions. This final action is only related to GHG emissions and does not affect vehicle regulations related to traditional criteria air pollutants (U.S. EPA 2026).

Energy Policy and Conservation Act of 1975

In accordance with the Energy Policy and Conservation Act of 1975 (as amended), the U.S. Department of Energy (DOE) establish minimum efficiency standards for a wide range of appliances and equipment used in residential and commercial buildings. Currently, DOE efficiency standards cover more than sixty categories of appliances and equipment. DOE's Appliance and Equipment Standards Program is part of a suite of programs under the Building Technologies Office that work in concert to help reduce building energy consumption (EESI 2026).

State

Assembly Bill (AB) 1279

AB 1279 establishes the policy of the state to achieve carbon neutrality as soon as possible, but no later than 2045; to maintain net negative GHG emissions thereafter; and to ensure that by 2045 statewide anthropogenic GHG emissions are reduced at least 85 percent below 1990 levels. The bill requires ARB to ensure that Scoping Plan updates identify and recommend measures to achieve carbon neutrality, and to identify and implement policies and strategies that enable CO_2 removal solutions and carbon capture, utilization, and storage technologies.

Senate Bill (SB) 1020

SB 1020 adds interim renewable energy and zero carbon energy retail sales of electricity targets to California end-use customers set at 90 percent in 2035 and 95 percent in 2040. It accelerates the timeline required to have 100 percent renewable energy and zero carbon energy procured to serve state agencies from the original target year of 2045 to 2035. This bill requires each state agency to individually achieve the 100 percent goal by 2035 with specified requirements.

Executive Order (EO) N-79-20

Governor Newsom signed EO N-79-20 in September 2020 to establish targets for the transportation sector to support the state in its goal to achieve carbon neutrality by 2045. The targets established in this Executive Order are:

- 100 percent of in-state sales of new passenger cars and trucks will be zero-emission by 2035.
- 100 percent of medium- and heavy-duty vehicles will be zero-emission by 2045 for all operations where feasible, and by 2035 for drayage trucks.
- 100 percent of off-road vehicles and equipment will be zero-emission by 2035 where feasible.

EO B-55-18

Governor Brown signed EO B-55-18 in September 2018 to establish a statewide goal to achieve carbon neutrality as soon as possible, and no later than 2045, and to achieve and maintain net negative emissions thereafter.

EO No. S-3-05

EO S-3-05 (State of California) proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra's snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the Executive Order established total GHG emission targets. Specifically, emissions are to be reduced to the 2000 level by 2010, to the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

The EO directed the secretary of the California Environmental Protection Agency (CalEPA) to coordinate a multi-agency effort to reduce GHG emissions to the target levels. The secretary will also submit biannual reports to the governor and state legislature describing (1) progress made toward reaching the emission targets, (2) impacts of global warming on California's resources, and (3) mitigation and adaptation plans to combat these impacts. To comply with the EO, the secretary of CalEPA created a Climate Action Team made up of members from various state agencies and commissions. The Climate Action Team released its first report in March 2006 and continues to release periodic reports on progress. The report proposed to achieve the targets by building on voluntary actions of California businesses, local government, and community actions, as well as through state incentives and regulatory programs.

AB 32 - California Global Warming Solutions Act of 2006

AB 32 (Health and Safety Code Sections 38500, 38501, 28510, 38530, 38550, 38560, 38561–38565, 38570, 38571, 38574, 38580, 38590, 38592–38599) requires that statewide GHG emissions be reduced to 1990 levels by the year 2020. The gases that are regulated by AB 32 include CO_2, CH_4, N_2O, HFCs, PFCs, NF_3, and

SF_6. The reduction to 1990 levels will be accomplished through an enforceable statewide cap on GHG emissions that will be phased in starting in 2012. To effectively implement the cap, AB 32 directs ARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then ARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

AB 32 requires that ARB adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrives at the cap, institute a schedule to meet the emissions cap, and develop tracking, reporting, and enforcement mechanisms to ensure that the state achieves reductions in GHG emissions necessary to meet the cap. AB 32 also includes guidance to institute emissions reductions in an economically efficient manner and conditions to ensure that businesses and consumers are not unfairly affected by the reductions.

Climate Change Scoping Plan

In October 2008, ARB published its Climate Change Proposed Scoping Plan, which is the State's plan to achieve GHG reductions in California required by AB 32. This initial Scoping Plan contained the main strategies to be implemented in order to achieve the target emission levels identified in AB 32. The Scoping Plan included ARB-recommended GHG reductions for each emissions sector of the state's GHG inventory. The largest proposed GHG reduction recommendations were associated with improving emissions standards for light-duty vehicles, implementing the Low Carbon Fuel Standard program, implementing energy efficiency measures in buildings and appliances, the widespread development of combined heat and power systems, and developing a renewable portfolio standard for electricity production.

The Scoping Plan states that land use planning and urban growth decisions will play important roles in the state's GHG reductions because local governments have primary authority to plan, zone, approve, and permit how land is developed to accommodate population growth and the changing needs of their jurisdictions. ARB further acknowledges that decisions on how land is used will have large impacts on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emissions sectors. With regard to land use planning, the Scoping Plan expects approximately 5.0 MMT CO_2e will be achieved associated with the implementation of SB 375, which is discussed further below.

The initial Scoping Plan was first approved by ARB on December 11, 2008, and is updated every five years. The first update of the Scoping Plan was approved by the ARB on May 22, 2014, which looked past 2020 to set mid-term goals (2030-2035) on the road to reaching the 2050 goals. The 2017 Climate Change Scoping Plan was released in November 2017. The 2017 Climate Change Scoping Plan incorporates strategies for achieving the 2030 GHG-reduction target established in SB 32 and EO B-30-15. Most notably, the 2017 Climate Change Scoping Pla*n* encourages zero net increases in GHG emissions. However, the 2017 Climate Change Scoping Plan recognizes that achieving net zero increases in GHG emissions may not be possible or appropriate for all projects and that the inability of a project to mitigate its GHG emissions to zero would not imply the project results in a substantial contribution to the cumulatively significant environmental impact of climate change under CEQA.

On November 16, 2022, the ARB approved the 2022 Scoping Plan for Achieving Carbon Neutrality. The 2022 Scoping Plan continues the path to achieve the SB 32 2030 target and expands upon earlier plans by targeting an 85 percent reduction in GHG below 1990 levels by 2045 (ARB 2022).

SB 1078 and Governor's Order S-14-08

SB 1078 (Public Utilities Code Sections 387, 390.1, 399.25, and Article 16) addresses electricity supply and requires that retail sellers of electricity, including investor-owned utilities and community choice aggregators, provide a minimum of 20 percent of their supply from renewable sources by 2017. This Senate Bill will affect statewide GHG emissions associated with electricity generation. In 2008, Governor Schwarzenegger signed EO S-14-08, which set the Renewables Portfolio Standard target to 33 percent by 2020. It directed state government agencies and retail sellers of electricity to take all appropriate actions to implement this target. EO S-14-08 was later superseded by EO S-21-09 on September 15, 2009. EO S-21-09 directed the ARB to adopt regulations requiring 33 percent of electricity sold in the State to come from renewable energy by 2020. Statute SB X1-2 superseded this EO in 2011, which obligated all California electricity providers, including investor-owned utilities and publicly owned utilities, to obtain at least 33 percent of their energy from renewable electrical generation facilities by 2020.

ARB is required by current law, AB 32 of 2006, to regulate sources of GHGs to meet a state goal of reducing GHG emissions to 1990 levels by 2020 and an 80 percent reduction of 1990 levels by 2050. The California Energy Commission and California Public Utilities Commission serve in advisory roles to help ARB develop the regulations to administer the 33 percent by 2020 requirement. ARB is also authorized to increase the target and accelerate and expand the time frame.

Mandatory Reporting of GHG Emissions

The California Global Warming Solutions Act (AB 32, 2006) requires the reporting of GHGs by major sources to the ARB. Major sources required to report GHG emissions include industrial facilities, suppliers of transportation fuels, natural gas, natural gas liquids, liquefied petroleum gas, and CO_2, operators of petroleum and natural gas systems, and electricity retail providers and marketers.

Cap-and-Trade Regulation

The cap-and-trade regulation is a key element in California's climate plan. It sets a statewide limit on sources responsible for 85 percent of California's GHG emissions and establishes a price signal needed to drive long-term investment in cleaner fuels and more efficient use of energy. The cap-and-trade rules came into effect on January 1, 2013, and apply to large electric power plants and large industrial plants. In 2015, fuel distributors, including distributors of heating and transportation fuels, also became subject to the cap-and-trade rules. At that stage, the program will encompass around 360 businesses throughout California and nearly 85 percent of the state's total GHG emissions.

Under the cap-and-trade regulation, companies must hold enough emission allowances to cover their emissions and are free to buy and sell allowances on the open market. California held its first auction of GHG allowances on November 14, 2012. California's GHG cap-and-trade system is projected to reduce GHG emissions to 1990 levels by the year 2020 and would achieve an approximate 80 percent reduction from 1990 levels by 2050.

SB 32

SB 32 was signed by Governor Brown on September 8, 2016. SB 32 effectively extends California's GHG emission-reduction goals from year 2020 to year 2030. This new emission-reduction target of 40 percent below 1990 levels by 2030 is intended to promote further GHG-reductions in support of the State's ultimate goal of reducing GHG emissions by 80 percent below 1990 levels by 2050. SB 32 also directs the ARB to update the Climate Change Scoping Plan to address this interim 2030 emission-reduction target.

SB 97

SB 97 was enacted in 2007. SB 97 required the Office of Planning and Research (OPR) to develop, and the Natural Resources Agency to adopt, amendments to the CEQA Guidelines addressing the analysis and mitigation of GHG emissions. Those CEQA Guidelines amendments clarified several points, including the following:

- Lead agencies must analyze the GHG emissions of proposed projects and must reach a conclusion regarding the significance of those emissions.
- When a project's GHG emissions may be significant, lead agencies must consider a range of potential mitigation measures to reduce those emissions.
- Lead agencies must analyze potentially significant impacts associated with placing projects in hazardous locations, including locations potentially affected by climate change.
- Lead agencies may significantly streamline the analysis of GHGs on a project level by using a programmatic GHG emissions reduction plan meeting certain criteria.
- CEQA mandates analysis of a proposed project's potential energy use (including transportation-related energy), sources of energy supply, and ways to reduce energy demand, including through the use of efficient transportation alternatives.

As part of the administrative rulemaking process, the California Natural Resources Agency developed a Final Statement of Reasons explaining the legal and factual bases, intent, and purpose of the CEQA Guidelines amendments. The amendments to the CEQA Guidelines implementing SB 97 became effective on March 18, 2010.

SB 100

SB 100 was signed by Governor Jerry Brown on September 10, 2018. SB 100 sets a goal of phasing out all fossil fuels from the state's electricity sector by 2045. SB 100 increases to 60 percent, from 50 percent, how much of California's electricity portfolio must come from renewables by 2030. It establishes a further goal to have an electric grid that is entirely powered by clean energy by 2045, which could include other carbon-free sources, like nuclear power, that are not renewable.

SB 375

SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a sustainable communities strategy (SCS) or alternative planning strategy (APS) that will address land-use allocation in that MPOs regional transportation plan. ARB, in consultation with MPOs, establishes regional reduction targets for GHGs emitted by passenger cars and light trucks for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. ARB is also charged with reviewing each MPO's SCS

or APS for consistency with its assigned targets. If MPOs do not meet the GHG reduction targets, funding for transportation projects may be withheld. In 2018, ARB adopted updated SB 375 targets.

SB 1383 & SB 1206

SB 1383 requires California to reduce hydrofluorocarbon (HFC) emissions associated with the use of refrigerants to 40 percent below 2013 levels by 2030. Starting in 2022, new facilities will be required to use refrigerants that can reduce their emissions by up to 90 percent. The intent of the new rules is to eliminate the use of very high-GWP refrigerants in every sector that uses non-residential refrigeration systems. Compliance begins for most home air conditioning equipment in 2025. Senate Bill 1206, signed into law in September 2022, prohibits the sale or distribution of HFCs that exceed a specified GWP. Under this new law, refrigerants would not be allowed to exceed 2,200 GWP beginning January 1, 2025; 1,500 GWP beginning January 1, 2030; and 750 GWP beginning January 1, 2030.

California Building Code

The CBC contains standards that regulate the method of use, properties, performance, or types of materials used in the construction, alteration, improvement, repair, or rehabilitation of a building or other improvement to real property. The California Building Code is adopted every three years by the Building Standards Commission (BSC). In the interim, the BSC also adopts annual updates to make necessary mid-term corrections. The CBC standards apply statewide; however, a local jurisdiction may amend a CBC standard if it makes a finding that the amendment is reasonably necessary due to local climatic, geological, or topographical conditions.

California Green Building Standards

In essence, green buildings standards are indistinguishable from any other building standards. Both standards are contained in the CBC and regulate the construction of new buildings and improvements. The only practical distinction between the two is that whereas the focus of traditional building standards has been protecting public health and safety, the focus of green building standards is to improve environmental performance.

The 2019 Building Energy Efficiency Standards (2019 Standards), adopted in May 2018, addressed four key areas: smart residential photovoltaic systems, updated thermal envelope standards (preventing heat transfer from the interior to the exterior and vice versa), residential and nonresidential ventilation requirements, and non-residential lighting requirements. The 2019 Standards required new residential and non-residential construction; as well as major alterations to existing structures, to include EV-capable parking spaces which have electrical panel capacity and conduit to accommodate future installation. In addition, the 2019 Standards also required the installation of PV systems for low-rise residential dwellings, defined as single-family dwellings and multi-family dwellings up to three stories in height. These requirements are based on various factors, including the floor area of the home, sun exposure, and climate zone. Under the 2019 standards, nonresidential buildings will use about 30 percent less energy due mainly to lighting upgrades (CEC 2019).

The 2022 Building Energy Efficiency Standards (2022 Standards), which were approved in December 2021, encourage efficient electric heat pumps, establish electric-ready requirements when natural gas is installed, support the future installation of battery storage, further expand solar photovoltaic and battery storage standards. The 2022 Standards extend solar PV system requirements, as well as battery storage

capabilities for select land uses, including high-rise multi-family and non-residential land uses, such as office buildings, schools, restaurants, warehouses, theaters, grocery stores, and more. Depending on the land use and other factors, solar systems should be sized to meet targets of up to 60 percent of the structure's loads. These solar requirements became effective on January 1, 2023, and contribute to California's goal of reaching a net-zero carbon footprint by 2045 (CEC 2022).

The most current standards are the 2025 Standards, which became effective January 1, 2026. The 2025 Standards build upon the previous standards by expanding the use of heat pumps in newly constructed residential buildings, encouraging electric-readiness, strengthens ventilation standards, and more (CEC 2026).

Short-Lived Climate Pollutant Reduction Strategy

In March 2017, the ARB adopted the *Short-Lived Climate Pollutant Reduction Strategy* (*SLCP Strategy*) establishing a path to decrease GHG emissions and displace fossil-based natural gas use. Strategies include avoiding landfill methane emissions by reducing the disposal of organics through edible food recovery, composting, in-vessel digestion, and other processes; and recovering methane from wastewater treatment facilities, and manure methane at dairies, and using the methane as a renewable source of natural gas to fuel vehicles or generate electricity. The *SLCP Strategy* also identifies steps to reduce natural gas leaks from oil and gas wells, pipelines, valves, and pumps to improve safety, avoid energy losses, and reduce methane emissions associated with natural gas use. Lastly, the *SLCP Strategy* also identifies measures that can reduce HFC emissions at national and international levels, in addition to State-level action that includes an incentive program to encourage the use of low-GWP refrigerants and limitations on the use of high-GWP refrigerants in new refrigeration and air-conditioning equipment (ARB 2026b).

Advanced Clean Cars II

In August 2022, ARB approved the Advanced Clean Cars II program. The rule establishes a year-by-year roadmap so that by 2035 100% of new cars and light trucks sold in California will be zero-emission vehicles, including plug-in hybrid electric vehicles. Beginning in model year 2026 automakers sales of new vehicles will be required to be made up of 35% ZEVs and PHEVs. The regulation applies to automakers and covers only new vehicle sales. It does not impact existing vehicles on the road today, which will still be legal to own and drive (ARB 2026c).

Small Off-Road Engines

In December 2021, ARB approved the Small Off-Road Engines regulation. This will require most newly manufactured small off-road engines such as those found in leaf blowers, lawn mowers and other equipment be zero emission starting in 2024. Portable generators, including those in recreational vehicles, would be required to meet more stringent standards in 2024 and meet zero-emission standards starting in 2028. Despite their small size, these engines are highly polluting. The volume of smog-forming emissions from this type of equipment has surpassed emissions from light-duty passenger cars and is projected to be nearly twice those of passenger cars by 2031. Older equipment can continue to be used and resold as this rule only impacts new equipment (ARB 2026d).

2023 Regional Transportation Plan/Sustainable Communities Strategy

The 2023 RTP was adopted by the SLOCOG Board in June 2023. The RTP includes the region's SCS, which outlines how the region will exceed its GHG reduction targets as required by SB 375 through the promotion of a variety of transportation demand management & system management tools and techniques to maximize the efficiency of the transportation network. Consistency with the requirement of SB 375 ensures consistency with the GHG-reduction targets set by ARB. The 2023 SCS was found to be consistent with the requirement of SB 375 and is also consistent with the general plans of the region's jurisdictions (SLOCOG 2023).

City of Atascadero Climate Action Plan

The City of Atascadero Climate Action Plan (CAP) is a long-range policy document intended to cost-effectively reduce greenhouse gas (GHG) emissions from City government operations and community activities within Atascadero. The City's CAP provided a baseline year 2005 inventory of GHG emissions and projected year 2020 emissions relative to the State's GHG emissions-reduction target for year 2020 of 15 percent below 2005 levels by the year 2020, as established under California Assembly Bill (AB) 32. According to the City's 2005 GHG emissions inventory, the City of Atascadero emitted approximately 141,428 metric tons of carbon dioxide equivalent GHG emissions ($MTCO_2e$). Major emissions sectors included transportation, residential energy use, commercial and industrial energy use, off-road vehicles and equipment, solid waste, and wastewater sectors. The City's CAP has not been updated to address the State's more recent GHG-reduction targets for future years, including the 2030-2035 GHG-reduction targets and carbon-neutrality goals (City of Atascadero 2014).

Impact Analysis

Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

GHG-1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

GHG-2: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

The methodology for evaluating the 2045 GPU/ZCU's impacts related to GHG emissions focuses on consistency with statewide, regional, and local goals, targets, and plans that have been adopted for the purposes of reducing and mitigating GHG emissions. This approach has been deemed appropriate for analyzing GHG impacts by the Governor's Office of Planning and Research (OPR) and has been upheld in court challenges (Mission Bay Alliance v. Office of Community Investment & Infrastructure 2016). The evaluation of consistency with such plans serves as the sole basis for determining the significance of the project's GHG-related impacts to the environment. Estimated net increases of GHG emissions associated with implementation of the 2045 GPU/ZCU's has also been provided for informational purposes.

The State's current GHG-reduction goals for future years include reducing GHG emissions by 40 percent below 1990 levels by 2030, and 80 percent below 1990 levels by 2050, per SB 32 and EO B-30-15; as well as achieving carbon neutrality by 2045, consistent with EO B-55-18. Current plans supporting the

achievement of these goals and targets include ARB's 2022 Scoping Plan for Achieving Carbon Neutrality and SLOCOG's RTP/SCS. As previously noted, the City's CAP was developed with the primary purpose of demonstrating consistency with the State's GHG-reduction target for year 2020 conditions, consistent with AB 32. The City's CAP has not been updated to address the State's more recent GHG-reduction targets for future years, to include the 2030-2050 GHG-reduction targets and carbon-neutrality goals. For this reason, projected increases in development-related GHG emissions attributable to the proposed 2045 GPU/ZCU and/or associated increases in VMT that would conflict with ARB's 2022 Scoping Plan for Achieving Carbon Neutrality or SLOCOG's RTP/SCS would be considered to have a potentially significant impact.

Methodology

Short-term GHG emissions associated with construction activities are largely dependent on the type of development proposed, off-road equipment and on-road vehicles required, and construction schedules. Because much of this information for specific future development projects is unknown at this time, construction-related impacts were qualitatively discussed.

Long-term operational increases in GHG emissions were calculated using the California Emissions Estimator Model (CalEEMod), version 2022.1.1.37. Emissions were quantified based on the net increase in land uses attributable to the proposed 2045 GPU/ZCU and associated increases in VMT derived from the traffic analysis prepared for this project (CCTC 2025). ARB's Emission Factor 2021 (EMFAC2021) Off-Model Greenhouse Gas Adjustment Factors to Remove the Impact of Advanced Clean Trucks, Zero-Emission Airport Shuttle, Heavy-Duty Omnibus and Warranty Phase I Regulations were applied to mobile-source emissions (ARB 2025). To be conservative, EMFAC2021 off-model adjustment factors were based on the highest adjustment factors noted taking into account various vehicle classifications and fuel sources. Estimated GHG emissions attributable to the 2045 GPU/ZCU are provided for information purposes. Emissions modeling files are provided in Appendix A.

As noted above, evaluation of impact significance was based on consistency with applicable plans supporting the State's future GHG-reduction targets of 40 percent below 1990 levels by 2030, consistent with SB 32, and the State's goal of achieving carbon neutrality by 2045, consistent with EO B-55-18. Current plans supporting the achievement of these goals include ARB's 2022 Scoping Plan for Achieving Carbon Neutrality and SLOCOG's RTP/SCS.

Relevant Proposed GPU Goals and Policies

The 2045 General Plan includes numerous goals and policies that would reduce air contaminant emissions. Some of the most relevant of these goals and policies include, but are not limited to, the following:

Goal PSI-6: Increased development and use of clean, renewable energy systems

> *Policy PSI-6.1: Onsite Renewable Energy*. Facilitate the installation of onsite renewable energy systems for residences and places of business.
>
> *Policy PSI-6.2: Energy Efficient Planning and Building Design*. Encourage energy-efficient site planning and building design/construction.
>
> - *Action A:* Implement streamlined building permit review processes for onsite energy systems.

- *Action B:* Continue to implement the California Green Building Standards.

Goal REC-7: Improve air quality and reduced health risks

Policy REC-7.1: Clean Air. Support regional efforts to maintain clean air.

- *Action A:* Require dust control and emissions limitations during project construction.
- *Action B:* Adopt circulation policies that encourage vehicle trip reductions consistent with the Mobility Element**,** and support regional programs to maintain clean air.
- *Action C:* Concentrate new intensive development at identified nodes and commercial corridors to help reduce vehicle trips.
- *Action D:* Continue to support the development of Park-and-Ride facilities in appropriate locations.

Goal MO-1: A safe, multimodal, interconnected, and efficient circulation system that serves all community members

Policy MO-1.2: Multimodal Options. Increase pedestrian and bicycle connections and safety between residential areas and commercial areas along major corridors, parks and recreation opportunities, and neighboring communities.

Policy MO-1.3: Regional Facilities. Provide regional roadway facilities that minimize through-traffic intrusion on local streets and mitigate impacts on local traffic.

Policy MO-1.4: Congestion Management and Trip Reduction. Encourage mixed-use and jobs focused infill development that is served by multi-modal facilities to support reductions in regional and local vehicle miles traveled (VMT).

Policy MO-1.6: Truck Routes. Ensure the new and existing business that use large trucks as a core part of their operations, more than just routine delivery, minimize maintenance impacts on City infrastructure and noise impacts on residents.

Goal MO-4: Safe, functional, and appealing bicycle, pedestrian, and equestrian (in rural areas) facilities that allow convenient multi-modal mobility

Policy MO-4.1: Coordination and Planning. Provide "backbone" pedestrian, bicycle, and equestrian systems that link residential, commercial, recreational, and regional areas.

Policy MO-4.2: Pedestrian Mobility. Ensure pedestrian safety, enhance pedestrian comfort, and promote walking as an alternative to vehicle travel, with priority in retail districts and multi-family neighborhoods.

Policy MO-4.3: Bicycle Mobility. Promote bicycle mobility and increase bicyclist safety with new/upgraded facilities and amenities.

Policy MO-4.4: Rural Trails. Provide for walkways, bikeways, and horse trails without curbs and sidewalks in rural areas.

Policy MO-4.5: School and Park Connections. Provide a comprehensive system of routes to schools and parks.

Goal MO-5: Reliable alternative travel modes that reduce traffic congestion and improve air quality.

Policy MO-5.1: Single-Occupancy Vehicle Alternatives. Promote alternatives to single-occupancy vehicle travel, particularly for commute trips.

Policy MO-5.2: Public Transit. Support the evolution of public transit to meet the changing needs for local and regional access, including fixed route and demand responsive service.

Policy MO-5.3: County TDM Requirements. Seek alternatives that bring Atascadero closer to compliance with Transportation Demand Management program requirements of the San Luis Obispo County Clean Air Plan to reduce peak period trip generation.

Goal MO-6: Anticipating and addressing emerging mobility technology proactively to allow new systems and industries to operate in Atascadero on the City's terms.

Policy MO-6.1: Changing Mobile Technology. Encourage the use of mobile or other electronic devices with similar on-demand hailing functions, particularly for seniors, persons with disabilities, and other mobility challenged people.

Policy MO-6.2: Autonomous Vehicles. Update, when warranted, transportation systems and policies as autonomous and automated vehicles and their attendant facilities are developed locally and regionally.

Goal LU-2: Enhanced major corridors that serve regional focused, distinct, and economically viable nodes

Policy LU-2.3: Mid-block Infill. Promote flexible land use patterns in areas between activity nodes along El Camino Real and support increased residential densities adjacent to and along commercial corridors to support commercial business activity and growth

Policy LU-2.4: Mixed-Use Areas. Create mixed-use districts in locations that benefit from the synergy of commercial and residential uses.

Policy LU-2.5: Multi-Modal Corridors. Improve pedestrian and bicycle facilities along El Camino Real and Morro Road. Major corridors should be safe, comfortable, and enjoyable for pedestrians, bicyclists, and drivers alike.

Impacts and Mitigation Measures

Impact GHG-1:	***Would the General Plan generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? and***
Impact GHG-2:	***Would the General Plan conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?***

Annual operational emissions associated with the 2045 GPU/ZCU buildout conditions are summarized in Table 12. As noted in Table 12, estimated increases in GHG emissions attributable to the 2045 GPU/ZCU would total approximately 145,588 $MTCO_2e$/year, with the inclusion of natural gas use. On a service population basis, net increases in GHG emissions would be approximately 14.9 $MTCO_2e$/SP. Estimated increases in GHG emissions were predominantly associated with increases in motor vehicle use. To a lesser extent, energy consumption, waste generation, water use, and area sources also contribute to overall increases in projected future community-wide GHG emissions. It is important to note that estimated year 2045 GHG emissions are conservative and do not fully account for future GHG reductions associated with existing and future building standards and/or regulations related to motor vehicle emission standards. In addition, the recent rescission of the 2009 Greenhouse Gas Endangerment Finding by the U.S. EPA, which was issued on February 12, 2026, has resulted in significant increases in projected future-year mobile-source GHG emissions. As noted earlier in this report, the 2009 Greenhouse Gas Endangerment Finding

served as a prerequisite for regulating emissions from new motor vehicles and new motor vehicle engines; as well as, all subsequent federal GHG emissions standards promulgated pursuant to the Endangerment Finding. In response to the rescission 2009 Greenhouse Gas Endangerment Finding by the U.S. EPA, the ARB has released EMFAC adjustment factors that are to be applied to on-road mobiles sources, which taking into account various vehicle classifications and fuel sources (ARB 2025). To be conservative, EMFAC adjustment factors were based on the highest values noted for the various vehicle classifications and fuel sources. As a result, actual future year GHG emissions may be lower than estimated depending on future changes related to GHG-emission reduction efforts and associated state and federal regulatory requirements.

Table 12. Annual Operational GHG Emissions at Buildout

Source	Annual Emissions ($MTCO_2e$/Year)[1]
Mobile[3]	133,857.1
Energy Use[2,4]	8,746.6
Area[4]	1,213.8
Water[4,5]	582.3
Waste[4]	1,163.7
Refrigerants[4]	24.4
Total:	145,588
Service Population (Residents + Employees):	9,781
$MTCO_2e$/SP:	14.9

1. Emissions were quantified using the CalEEMod computer program based on projected future development associated with implementation of the General Plan Update.
2. Includes natural gas use. Excludes wood burning hearths per SLOAPCD Rule 4901.
3. Emissions quantified based on trip-generation rates derived from the traffic analysis prepared for this project (CCTC 2025). Includes EMFAC2021 off-model adjustment factors (ARB 2025).
4. Emissions associated with area sources, water use, energy use, refrigerants, and waste generation were quantified based on projected increases in future development, by land use type, and default usage/generation rates identified in the CalEEMod computer program for San Luis Obispo County.
5. Includes the use of low-flow water fixtures per current building standards.
Totals may not sum due to rounding. Refer to Appendix A for emissions modeling assumptions and results.

Consistency with ARB's 2022 Scoping Plan for Achieving Carbon Neutrality

The 2022 Climate Change Scoping Plan is the most comprehensive and far-reaching Scoping Plan developed to date. It identifies a technologically feasible and cost-effective path to achieve carbon neutrality by 2045 while also assessing the progress California is making toward meeting the State's year 2030 GHG-reduction goals. The 2030 target is an important but interim step toward achieving the State's future-year GHG-reduction and carbon-neutrality goals.

To achieve the State's future-year GHG-reduction goals, including carbon neutrality by 2045, the State will need to reduce emissions from carbon-based sources commonly associated with community development. The Scoping Plan identifies numerous action items in support of the State's future-year GHG-reduction goals. Such action items include, to the extent possible, the installation of all-electric appliances for new residential and commercial development, replacement of residential and commercial-use natural-gas appliances with electric appliances at end of life, prevention of conversion of natural land, provision of lower income affordable housing, and incorporation of smart-growth measures that would support reductions in VMT and associated mobile-source emissions.

The 2045 GPU/ZCU uses a designator system consisting of "Placetypes." Each Placetype category defines both the primary uses of land allowed and the character of those uses. For instance, the Mixed Use Placetype is intended to promote a flexible and compatible mix of residential and commercial uses in focused areas. The Downtown Mixed Use Placetype encourages an eclectic and complementary mix of uses, pedestrian-scale development, and locally owned retail and restaurant businesses with upper-story residential and office units. The 2045 GPU/ZCU is expected to result in reductions in vehicle trips/ trip lengths, improved accessibility to alternative means of transportation (e.g., transit), and overall reductions in VMT. In addition, the City's jobs-housing ratio would improve from 0.77 to 0.83. Numerous other goals and policies have been included in the 2045 GPU/ZCU that would support regional transportation planning efforts, including policies to improve accessibility to transit, bicycle and public transit improvements, park and ride lots, traffic flow improvements, and various other policies intended to reduce vehicle use and VMT. In addition, the 2045 GPU/ZCU includes policies that would encourage energy-efficient site planning and building design/construction and incorporation of onsite renewable energy systems.

However, even with implementation of the 2045 GPU/ZCU goals and policies, the 2045 GPU/ZCU would generate residential and employment-based VMT at levels that are above OPR's recommended thresholds. In addition, the 2045 GPU/ZCU does not include policies for encouraging all-electric development of future residential and commercial land uses. As a result, the 2045 GPU/ZCU would be inconsistent with the 2022 Scoping Plan for Achieving Carbon Neutrality.

Consistency with SLOCOG's RTP/SCS

The RTP includes the region's SCS, which outlines how the region will exceed its GHG reduction targets as required by SB 375 through the promotion of a variety of transportation demand management & system management tools and techniques to maximize the efficiency of the transportation network. Consistency with the requirement of SB 375 ensures consistency with the GHG-reduction targets set by ARB. The 2023 SCS was found to be consistent with the requirement of SB 375 and is also consistent with the existing general plans of the region's jurisdictions (SLOCOG 2023).

As noted above, the proposed 2045 GPU/ZCU is expected to result in reductions in vehicle trips/ trip lengths and improved accessibility to alternative means of transportation (e.g., transit). In addition, the 2045 GPU/ZCU would not be anticipated to result in a wasteful, inefficient, or unnecessary consumption of energy associated with future development. Although implementation of the 2045 General Plan and Zoning Code Update would result in increased development, population, and jobs, in excess of what is currently projected by SLOCOG, the jobs/housing ratio for the City would be projected to improve with implementation of the project. Therefore, the goals, policies, and actions included in the 2045 General Plan Update are generally consistent with the goals and policies established within SLOCOG's RTP/SCS.

Consistency with City of Atascadero Climate Action Plan

The City of Atascadero Climate Action Plan (CAP) is a long-range policy document intended to cost-effectively reduce GHG emissions from City government operations and community activities within Atascadero. Appendix C of the City's CAP contains a CAP Consistency Worksheet. The CAP worksheet includes various mandatory and voluntary GHG-reduction measures that projects can implement to demonstrate consistency with the City's CAP. These project-level mandatory measures include the following (City of Atascadero 2014):

- *Measure TL-1: Bicycle Network*.
    - Incorporation of bicycle lanes, routes, and/or shared use paths into street system, as currently required by the General Plan and Municipal Code, to provide a continuous network or routes, facilitated with markings, signage, and bicycle parking.
- *Measure TL-2: Pedestrian Network*.
    - Provide a pedestrian access network that internally links all uses and connects all existing or planned external streets and pedestrian facilities contiguous with the project site, as currently required by the General Plan and Municipal Code.
    - Minimize barriers to pedestrian access and interconnectivity, as currently required by the General Plan and Municipal Code.
    - Implement traffic calming improvements as appropriate (e.g., marked crosswalks, count-down signal timers, curb extensions, speed tables, raised crosswalks, median islands, mini-circles, tight corner radii, etc.), as currently required by the General Plan and Municipal Code.
- *Measure TL-3: Expand Transit Network*.
    - Provide safe and convenient access to public transit within and/or contiguous to the project area, as currently required by the General Plan and Municipal Code
- *Measure TL-8: Atascadero General Plan.*
    - Consistent with the City's land use and zoning code.
- *Measure S-1: Solid Waste Diversion Rate.*
    - If the project involves demolition, divert 70 percent of non-hazardous debris

The mandatory measures identified above must be incorporated as binding and enforceable components of a project for it to be found consistent with the CAP. If the project cannot meet one or more of the mandatory measures, voluntary or other City-approved measures may be substituted provided the measures would achieve equivalent GHG reductions. Additional voluntary measures include those related to reducing GHG emissions from the energy, transportation, and land use sectors.

The 2045 General Plan includes numerous goals and policies that would reduce GHG emissions, specifically those associated with the energy, transportation, and land use sectors, consistent with the CAP worksheet. As noted earlier in this report, these goals and policies include the promotion of emerging mobility technologies; promotion of alternative means of transportation; providing safe, functional, and appealing multi-modal mobility alternatives; promoting clean, renewable energy systems; and various measures to reduce regional and local VMT.

It is important to note that the City's CAP was developed to address the State's year 2020 GHG emissions-reduction target, as established under California Assembly Bill (AB) 32. The City's CAP has not been updated to address the State's more recent GHG-reduction targets for future years, including the 2030-2035 GHG-reduction targets and carbon-neutrality goals. The goals and policies contained in the 2045 GPU/ZCU would facilitate future project consistency with the City's current CAP, as well as, GHG reductions in support of the State's current GHG-reduction targets for future years, including the 2030-2035 GHG-reduction targets and carbon-neutrality goals. As a result, the 2045 GPU/ZCU would be considered consistent with the City's CAP.

Because the 2045 GPU/ZCU would conflict with CARB's 2022 Scoping Plan, this impact would be considered **potentially significant**.

Proposed GPU Policies that Provide Mitigation

The 2045 GPU/ZCU includes numerous goals and policies that would help to reduce criteria pollutant emissions, energy demands, and VMT. Some of the more relevant 2045 GPU/ZCU policies include Policy REC-7.1,a, PSI-6.1, PSI-6.2, MO-1.2 – MO-1.6, MO-4.1 – MO-4.5, MO-5.1 – MO-5.3, MO-6.1, MO-6.2, and LU-2.3 – LU-2.5.

Proposed Mitigation Measures

GHG-1: Update the City of Atascadero Climate Action Plan to identify ways to reduce GHG emissions and limit climate change impacts on the residents to the extent possible. The Climate Action Plan shall integrate the State's future GHG-reduction goals, such as the State's goal of attaining carbon neutrality by 2045.

GHG-2: Until the City adopts a qualified Climate Action Plan consistent with Mitigation Measure GHG-1 the City shall incorporate development standards into the Municipal Code for new development projects located along existing or planned public transit routes that require features that promote the use of public transit. Examples include the installation of sidewalks or pathways that facilitate ease of access from onsite locations to nearby transit stops, installation of transit improvements (e.g., benches, bus turn outs) for future planned transit stops located adjacent to the development site.

GHG-3: The City shall participate in SLOCOG's Sustainable Communities Strategy/Regional Blueprint Planning effort to ensure that local development plans and associated population and employment growth are consistent with the Regional Transportation Plan/Sustainable Communities Strategy.

Significance After Mitigation

Implementation of Mitigation Measure GHG-1 would require the update of the City's Climate Action Plan to identify ways to achieve GHG-reductions in support of the State's future GHG-reduction efforts. Mitigation Measure GHG-2 would require implementation of additional measures for land use development projects in support of the State's future year 2045 carbon-neutrality goal. Mitigation Measure GHG-3 would require that the City participate in SLOCOG's Sustainable Communities Strategy/Regional Blueprint Planning effort to ensure that local development plans and associated population and employment growth are consistent with the Regional Transportation Plan/Sustainable Communities Strategy. However, while policies contained in the GPU, proposed Mitigation Measures, and implementation of future regulatory requirements would reduce the GHG emissions at buildout, the extent of GHG reductions attributable to these measures cannot be accurately quantified at this time and projected future year GHG emissions could potentially exceed applicable thresholds given uncertainties in the timing and effectiveness of these measures. In addition, projected increases in VMT attributable to the 2045 GPU/ZCU would still exceed applicable OPR thresholds. Therefore, this impact would be considered **significant and unavoidable**.

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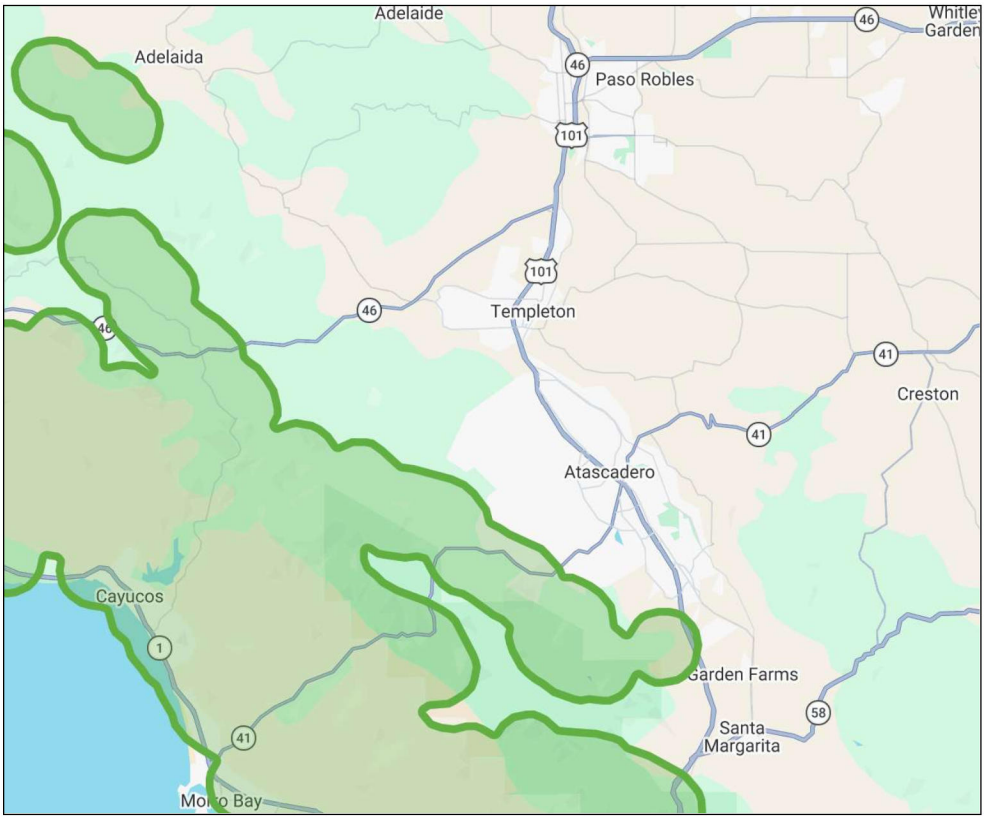
APPENDIX A

Emissions Modeling & Supportive Documentation

SLOAPCD NOA BUFFER AREAS



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2. Emissions Summary

2.5 Operations Emissions by Sector, Unmitigated

Sector	CO_2T	CH_4	N_2O	R	CO_2e	
Annual						
Mobile - Unadjusted	57702.371479	1.0236253744	1.7226151381	10.20	**58251.50**	
EmFac21 Adj Factors	2.29	2.43	2.70	0.00		
Mobile -Adjusted	132408.92	2.49	4.65	10.20	**133857.01**	
Area	1212.2292549	0.0252900985	0.0029807031	0.00	**1213.75**	
Energy	8699.1911577	1.0097190828	0.0744000290	0.00	**8746.61**	
Water	289.78605893	10.989116735	0.2639815364	0.00	**643.18**	
Waste	332.60546283	33.242721083	0	0.00	**1163.67**	
Refrig.	0.00	0.00	0.00	24.42	**24.42**	
Total	142942.74	47.76	4.99	34.62	**145624.22**	
						CO2e INCREASE WITH EMFAC ADJUSTMENT
Total Mobile-Adjusted:	**328008.94**	**116.23**	**13.48**	**34.62**	**334965.13**	276713.63

Total with Nat Gas

Mobile (Adjusted):	132408.92	2.49	4.65	10.20	133857.01	
Energy (Electricity & Nat Gas):	8699.1911577	1.0097190828	0.0744000290	0.00	8746.61	
Area	1212.2292549	0.0252900985	0.0029807031	0.00	1213.75	
Water (With Low Flow Fixtures):	263.10416991	9.9251980126	0.2384456819	0	582.2909334466693	GHG/SP WITHOUT EMFAC ADJUSTMENT
Waste:	332.60546283	33.242721083	0	0.00	1163.67	
Refrigerants:	0	0	0	24.42	24.42	
Total:	**142916.05**	**46.69**	**4.97**	**34.62**	**145587.75**	-131125.88
Based on MIG SP data			**Net Increase Service Population (SP):**		**9781**	
				GHG/SP:	**14.88475077**	

Service Population	**Existing**	**GPU 2045**	**Net Increase**
Residents	30683	37279	6596
Employees	9729	12914	3185
Total Net Increase			9781

AGPU Operational Yr 2045 - Net Increase Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	AGPU Operational Yr 2045 - Net Increase
Operational Year	2045
Lead Agency	—
Land Use Scale	Plan/community
Analysis Level for Defaults	County
Windspeed (m/s)	3.00000
Precipitation (days)	29.6000
Location	35.489982894823555, -120.66750601348814
County	San Luis Obispo
City	Atascadero
Air District	San Luis Obispo County APCD
Air Basin	South Central Coast
TAZ	3311
EDFZ	6
Electric Utility	Pacific Gas & Electric Company
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
Single Family Housing	205.000	Dwelling Unit	66.5584	399,750	2,401,136	—	492.000	—

Apartments Mid Rise	2,688.00	Dwelling Unit	70.7368	2,580,480	0.00000	—	6,451.00	—
Strip Mall	481.454	1000sqft	11.0527	481,454	0.00000	—	—	—
General Office Building	594.666	1000sqft	13.6517	594,666	0.00000	—	—	—
Industrial Park	467.501	1000sqft	10.7323	467,501	0.00000	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Water	W-4	Require Low-Flow Water Fixtures

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	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	160.381	126.460	1,228.14	3.91304	6.24729	409.534	415.781	6.11780	103.670	109.787	456,681	280.361	12.1016	290.118	467,587
Mit.	160.381	126.460	1,228.14	3.91304	6.24729	409.534	415.781	6.11780	103.670	109.787	456,520	273.935	11.9474	290.118	467,219
% Reduced	—	—	—	—	—	—	—	—	—	—	< 0.5%	2%	1%	—	< 0.5%
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	134.645	130.327	891.929	3.77711	6.05468	409.534	415.588	5.97210	103.670	109.642	443,342	280.155	12.5662	151.181	454,242
Mit.	134.645	130.327	891.929	3.77711	6.05468	409.534	415.588	5.97210	103.670	109.642	443,181	273.729	12.4120	151.181	453,874
% Reduced	—	—	—	—	—	—	—	—	—	—	< 0.5%	2%	1%	—	< 0.5%

Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	156.073	105.160	1,106.99	3.63725	4.06734	401.707	405.774	3.94235	101.713	105.655	412,150	279.597	12.4665	209.071	423,064
Mit.	156.073	105.160	1,106.99	3.63725	4.06734	401.707	405.774	3.94235	101.713	105.655	411,989	273.171	12.3123	209.071	422,697
% Reduced	—	—	—	—	—	—	—	—	—	—	< 0.5%	2%	1%	—	< 0.5%
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	28.4832	19.1918	202.026	0.66380	0.74229	73.3115	74.0538	0.71948	18.5626	19.2821	68,236.2	46.2905	2.06398	34.6141	70,043.1
Mit.	28.4832	19.1918	202.026	0.66380	0.74229	73.3115	74.0538	0.71948	18.5626	19.2821	68,209.5	45.2266	2.03844	34.6141	69,982.2
% Reduced	—	—	—	—	—	—	—	—	—	—	< 0.5%	2%	1%	—	< 0.5%

2.5. Operations Emissions by Sector, Unmitigated

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

Sector	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	34.8974	66.1337	968.272	3.53289	1.38041	409.534	410.914	1.29783	103.670	104.967	359,054	6.30530	9.97529	142.636	362,327
Area	123.973	34.0733	245.709	0.21534	2.77929	—	2.77929	2.73238	—	2.73238	41,324.7	0.79459	0.08248	—	41,369.1
Energy	1.51075	26.2532	14.1627	0.16481	2.08759	—	2.08759	2.08759	—	2.08759	52,543.6	6.09876	0.44938	—	52,830.0
Water	—	—	—	—	—	—	—	—	—	—	1,750.32	66.3749	1.59446	—	3,884.85
Waste	—	—	—	—	—	—	—	—	—	—	2,008.96	200.788	0.00000	—	7,028.65
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	147.482	147.482
Total	160.381	126.460	1,228.14	3.91304	6.24729	409.534	415.781	6.11780	103.670	109.787	456,681	280.361	12.1016	290.118	467,587
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	34.4515	72.0811	864.152	3.40809	1.38041	409.534	410.914	1.29783	103.670	104.967	346,429	6.12886	10.4459	3.69892	349,699

Area	98.6824	31.9932	13.6141	0.20421	2.58668	—	2.58668	2.58668	—	2.58668	40,609.8	0.76467	0.07647	—	40,651.7
Energy	1.51075	26.2532	14.1627	0.16481	2.08759	—	2.08759	2.08759	—	2.08759	52,543.6	6.09876	0.44938	—	52,830.0
Water	—	—	—	—	—	—	—	—	—	—	1,750.32	66.3749	1.59446	—	3,884.85
Waste	—	—	—	—	—	—	—	—	—	—	2,008.96	200.788	0.00000	—	7,028.65
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	147.482	147.482
Total	134.645	130.327	891.929	3.77711	6.05468	409.534	415.588	5.97210	103.670	109.642	443,342	280.155	12.5662	151.181	454,242
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	34.5781	71.7675	880.751	3.42881	1.38041	401.707	403.087	1.29783	101.713	103.011	348,525	6.18275	10.4047	61.5895	351,842
Area	119.984	7.13979	212.077	0.04363	0.59935	—	0.59935	0.55694	—	0.55694	7,321.93	0.15275	0.01800	—	7,331.12
Energy	1.51075	26.2532	14.1627	0.16481	2.08759	—	2.08759	2.08759	—	2.08759	52,543.6	6.09876	0.44938	—	52,830.0
Water	—	—	—	—	—	—	—	—	—	—	1,750.32	66.3749	1.59446	—	3,884.85
Waste	—	—	—	—	—	—	—	—	—	—	2,008.96	200.788	0.00000	—	7,028.65
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	147.482	147.482
Total	156.073	105.160	1,106.99	3.63725	4.06734	401.707	405.774	3.94235	101.713	105.655	412,150	279.597	12.4665	209.071	423,064
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	6.31050	13.0976	160.737	0.62576	0.25192	73.3115	73.5634	0.23685	18.5626	18.7995	57,702.4	1.02363	1.72262	10.1968	58,251.5
Area	21.8970	1.30301	38.7041	0.00796	0.10938	—	0.10938	0.10164	—	0.10164	1,212.23	0.02529	0.00298	—	1,213.75
Energy	0.27571	4.79120	2.58468	0.03008	0.38098	—	0.38098	0.38098	—	0.38098	8,699.19	1.00972	0.07440	—	8,746.61
Water	—	—	—	—	—	—	—	—	—	—	289.786	10.9891	0.26398	—	643.180
Waste	—	—	—	—	—	—	—	—	—	—	332.605	33.2427	0.00000	—	1,163.67
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	24.4173	24.4173
Total	28.4832	19.1918	202.026	0.66380	0.74229	73.3115	74.0538	0.71948	18.5626	19.2821	68,236.2	46.2905	2.06398	34.6141	70,043.1

2.6. Operations Emissions by Sector, Mitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	34.8974	66.1337	968.272	3.53289	1.38041	409.534	410.914	1.29783	103.670	104.967	359,054	6.30530	9.97529	142.636	362,327
Area	123.973	34.0733	245.709	0.21534	2.77929	—	2.77929	2.73238	—	2.73238	41,324.7	0.79459	0.08248	—	41,369.1
Energy	1.51075	26.2532	14.1627	0.16481	2.08759	—	2.08759	2.08759	—	2.08759	52,543.6	6.09876	0.44938	—	52,830.0
Water	—	—	—	—	—	—	—	—	—	—	1,589.16	59.9487	1.44022	—	3,517.07
Waste	—	—	—	—	—	—	—	—	—	—	2,008.96	200.788	0.00000	—	7,028.65
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	147.482	147.482
Total	160.381	126.460	1,228.14	3.91304	6.24729	409.534	415.781	6.11780	103.670	109.787	456,520	273.935	11.9474	290.118	467,219
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	34.4515	72.0811	864.152	3.40809	1.38041	409.534	410.914	1.29783	103.670	104.967	346,429	6.12886	10.4459	3.69892	349,699
Area	98.6824	31.9932	13.6141	0.20421	2.58668	—	2.58668	2.58668	—	2.58668	40,609.8	0.76467	0.07647	—	40,651.7
Energy	1.51075	26.2532	14.1627	0.16481	2.08759	—	2.08759	2.08759	—	2.08759	52,543.6	6.09876	0.44938	—	52,830.0
Water	—	—	—	—	—	—	—	—	—	—	1,589.16	59.9487	1.44022	—	3,517.07
Waste	—	—	—	—	—	—	—	—	—	—	2,008.96	200.788	0.00000	—	7,028.65
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	147.482	147.482
Total	134.645	130.327	891.929	3.77711	6.05468	409.534	415.588	5.97210	103.670	109.642	443,181	273.729	12.4120	151.181	453,874
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	34.5781	71.7675	880.751	3.42881	1.38041	401.707	403.087	1.29783	101.713	103.011	348,525	6.18275	10.4047	61.5895	351,842
Area	119.984	7.13979	212.077	0.04363	0.59935	—	0.59935	0.55694	—	0.55694	7,321.93	0.15275	0.01800	—	7,331.12
Energy	1.51075	26.2532	14.1627	0.16481	2.08759	—	2.08759	2.08759	—	2.08759	52,543.6	6.09876	0.44938	—	52,830.0
Water	—	—	—	—	—	—	—	—	—	—	1,589.16	59.9487	1.44022	—	3,517.07
Waste	—	—	—	—	—	—	—	—	—	—	2,008.96	200.788	0.00000	—	7,028.65
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	147.482	147.482
Total	156.073	105.160	1,106.99	3.63725	4.06734	401.707	405.774	3.94235	101.713	105.655	411,989	273.171	12.3123	209.071	422,697
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Mobile	6.31050	13.0976	160.737	0.62576	0.25192	73.3115	73.5634	0.23685	18.5626	18.7995	57,702.4	1.02363	1.72262	10.1968	58,251.5
Area	21.8970	1.30301	38.7041	0.00796	0.10938	—	0.10938	0.10164	—	0.10164	1,212.23	0.02529	0.00298	—	1,213.75
Energy	0.27571	4.79120	2.58468	0.03008	0.38098	—	0.38098	0.38098	—	0.38098	8,699.19	1.00972	0.07440	—	8,746.61
Water	—	—	—	—	—	—	—	—	—	—	263.104	9.92520	0.23845	—	582.291
Waste	—	—	—	—	—	—	—	—	—	—	332.605	33.2427	0.00000	—	1,163.67
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	24.4173	24.4173
Total	28.4832	19.1918	202.026	0.66380	0.74229	73.3115	74.0538	0.71948	18.5626	19.2821	68,209.5	45.2266	2.03844	34.6141	69,982.2

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.

4.1.2. Mitigated

Mobile source emissions results are presented in Sections 2.5. 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	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	694.653	0.11238	0.01362	—	701.522
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	4,458.40	0.72127	0.08743	—	4,502.49

Strip Mall	—	—	—	—	—	—	—	—	—	—	2,227.10	0.36030	0.04367	—	2,249.12
General Office Building	—	—	—	—	—	—	—	—	—	—	6,936.26	1.12214	0.13602	—	7,004.84
Industrial Park	—	—	—	—	—	—	—	—	—	—	5,452.99	0.88217	0.10693	—	5,506.91
Total	—	—	—	—	—	—	—	—	—	—	19,769.4	3.19826	0.38767	—	19,964.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	694.653	0.11238	0.01362	—	701.522
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	4,458.40	0.72127	0.08743	—	4,502.49
Strip Mall	—	—	—	—	—	—	—	—	—	—	2,227.10	0.36030	0.04367	—	2,249.12
General Office Building	—	—	—	—	—	—	—	—	—	—	6,936.26	1.12214	0.13602	—	7,004.84
Industrial Park	—	—	—	—	—	—	—	—	—	—	5,452.99	0.88217	0.10693	—	5,506.91
Total	—	—	—	—	—	—	—	—	—	—	19,769.4	3.19826	0.38767	—	19,964.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	115.008	0.01861	0.00226	—	116.145
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	738.139	0.11941	0.01447	—	745.438
Strip Mall	—	—	—	—	—	—	—	—	—	—	368.721	0.05965	0.00723	—	372.367
General Office Building	—	—	—	—	—	—	—	—	—	—	1,148.38	0.18578	0.02252	—	1,159.73

Industrial Park	—	—	—	—	—	—	—	—	—	—	902.805	0.14605	0.01770	—	911.732
Total	—	—	—	—	—	—	—	—	—	—	3,273.05	0.52951	0.06418	—	3,305.41

4.2.2. Electricity Emissions By Land Use - Mitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	694.653	0.11238	0.01362	—	701.522
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	4,458.40	0.72127	0.08743	—	4,502.49
Strip Mall	—	—	—	—	—	—	—	—	—	—	2,227.10	0.36030	0.04367	—	2,249.12
General Office Building	—	—	—	—	—	—	—	—	—	—	6,936.26	1.12214	0.13602	—	7,004.84
Industrial Park	—	—	—	—	—	—	—	—	—	—	5,452.99	0.88217	0.10693	—	5,506.91
Total	—	—	—	—	—	—	—	—	—	—	19,769.4	3.19826	0.38767	—	19,964.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	694.653	0.11238	0.01362	—	701.522
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	4,458.40	0.72127	0.08743	—	4,502.49
Strip Mall	—	—	—	—	—	—	—	—	—	—	2,227.10	0.36030	0.04367	—	2,249.12

General Office Building	—	—	—	—	—	—	—	—	—	—	6,936.26	1.12214	0.13602	—	7,004.84
Industrial Park	—	—	—	—	—	—	—	—	—	—	5,452.99	0.88217	0.10693	—	5,506.91
Total	—	—	—	—	—	—	—	—	—	—	19,769.4	3.19826	0.38767	—	19,964.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	115.008	0.01861	0.00226	—	116.145
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	738.139	0.11941	0.01447	—	745.438
Strip Mall	—	—	—	—	—	—	—	—	—	—	368.721	0.05965	0.00723	—	372.367
General Office Building	—	—	—	—	—	—	—	—	—	—	1,148.38	0.18578	0.02252	—	1,159.73
Industrial Park	—	—	—	—	—	—	—	—	—	—	902.805	0.14605	0.01770	—	911.732
Total	—	—	—	—	—	—	—	—	—	—	3,273.05	0.52951	0.06418	—	3,305.41

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	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.12084	2.06520	0.87881	0.01318	0.16697	—	0.16697	0.16697	—	0.16697	2,621.42	0.23199	0.00494	—	2,628.69
Apartments Mid Rise	0.99300	16.9712	7.22180	0.10833	1.37214	—	1.37214	1.37214	—	1.37214	21,542.0	1.90646	0.04056	—	21,601.8
Strip Mall	0.04248	0.77241	0.64882	0.00463	0.05870	—	0.05870	0.05870	—	0.05870	921.608	0.08156	0.00174	—	924.165

General Office Building	0.19844	3.60792	3.03065	0.02165	0.27420	—	0.27420	0.27420	—	0.27420	4,304.85	0.38098	0.00811	—	4,316.79
Industrial Park	0.15600	2.83639	2.38257	0.01702	0.21557	—	0.21557	0.21557	—	0.21557	3,384.29	0.29951	0.00637	—	3,393.68
Total	1.51075	26.2532	14.1627	0.16481	2.08759	—	2.08759	2.08759	—	2.08759	32,774.2	2.90050	0.06171	—	32,865.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.12084	2.06520	0.87881	0.01318	0.16697	—	0.16697	0.16697	—	0.16697	2,621.42	0.23199	0.00494	—	2,628.69
Apartments Mid Rise	0.99300	16.9712	7.22180	0.10833	1.37214	—	1.37214	1.37214	—	1.37214	21,542.0	1.90646	0.04056	—	21,601.8
Strip Mall	0.04248	0.77241	0.64882	0.00463	0.05870	—	0.05870	0.05870	—	0.05870	921.608	0.08156	0.00174	—	924.165
General Office Building	0.19844	3.60792	3.03065	0.02165	0.27420	—	0.27420	0.27420	—	0.27420	4,304.85	0.38098	0.00811	—	4,316.79
Industrial Park	0.15600	2.83639	2.38257	0.01702	0.21557	—	0.21557	0.21557	—	0.21557	3,384.29	0.29951	0.00637	—	3,393.68
Total	1.51075	26.2532	14.1627	0.16481	2.08759	—	2.08759	2.08759	—	2.08759	32,774.2	2.90050	0.06171	—	32,865.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.02205	0.37690	0.16038	0.00241	0.03047	—	0.03047	0.03047	—	0.03047	434.006	0.03841	0.00082	—	435.209
Apartments Mid Rise	0.18122	3.09725	1.31798	0.01977	0.25042	—	0.25042	0.25042	—	0.25042	3,566.53	0.31564	0.00672	—	3,576.42
Strip Mall	0.00775	0.14096	0.11841	0.00085	0.01071	—	0.01071	0.01071	—	0.01071	152.583	0.01350	0.00029	—	153.006
General Office Building	0.03621	0.65845	0.55309	0.00395	0.05004	—	0.05004	0.05004	—	0.05004	712.717	0.06308	0.00134	—	714.694
Industrial Park	0.02847	0.51764	0.43482	0.00311	0.03934	—	0.03934	0.03934	—	0.03934	560.308	0.04959	0.00106	—	561.862

Total	0.27571	4.79120	2.58468	0.03008	0.38098	—	0.38098	0.38098	—	0.38098	5,426.14	0.48021	0.01022	—	5,441.19

4.2.4. Natural Gas Emissions By Land Use - Mitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.12084	2.06520	0.87881	0.01318	0.16697	—	0.16697	0.16697	—	0.16697	2,621.42	0.23199	0.00494	—	2,628.69
Apartments Mid Rise	0.99300	16.9712	7.22180	0.10833	1.37214	—	1.37214	1.37214	—	1.37214	21,542.0	1.90646	0.04056	—	21,601.8
Strip Mall	0.04248	0.77241	0.64882	0.00463	0.05870	—	0.05870	0.05870	—	0.05870	921.608	0.08156	0.00174	—	924.165
General Office Building	0.19844	3.60792	3.03065	0.02165	0.27420	—	0.27420	0.27420	—	0.27420	4,304.85	0.38098	0.00811	—	4,316.79
Industrial Park	0.15600	2.83639	2.38257	0.01702	0.21557	—	0.21557	0.21557	—	0.21557	3,384.29	0.29951	0.00637	—	3,393.68
Total	1.51075	26.2532	14.1627	0.16481	2.08759	—	2.08759	2.08759	—	2.08759	32,774.2	2.90050	0.06171	—	32,865.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.12084	2.06520	0.87881	0.01318	0.16697	—	0.16697	0.16697	—	0.16697	2,621.42	0.23199	0.00494	—	2,628.69
Apartments Mid Rise	0.99300	16.9712	7.22180	0.10833	1.37214	—	1.37214	1.37214	—	1.37214	21,542.0	1.90646	0.04056	—	21,601.8
Strip Mall	0.04248	0.77241	0.64882	0.00463	0.05870	—	0.05870	0.05870	—	0.05870	921.608	0.08156	0.00174	—	924.165
General Office Building	0.19844	3.60792	3.03065	0.02165	0.27420	—	0.27420	0.27420	—	0.27420	4,304.85	0.38098	0.00811	—	4,316.79

Industrial Park	0.15600	2.83639	2.38257	0.01702	0.21557	—	0.21557	0.21557	—	0.21557	3,384.29	0.29951	0.00637	—	3,393.68
Total	1.51075	26.2532	14.1627	0.16481	2.08759	—	2.08759	2.08759	—	2.08759	32,774.2	2.90050	0.06171	—	32,865.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.02205	0.37690	0.16038	0.00241	0.03047	—	0.03047	0.03047	—	0.03047	434.006	0.03841	0.00082	—	435.209
Apartments Mid Rise	0.18122	3.09725	1.31798	0.01977	0.25042	—	0.25042	0.25042	—	0.25042	3,566.53	0.31564	0.00672	—	3,576.42
Strip Mall	0.00775	0.14096	0.11841	0.00085	0.01071	—	0.01071	0.01071	—	0.01071	152.583	0.01350	0.00029	—	153.006
General Office Building	0.03621	0.65845	0.55309	0.00395	0.05004	—	0.05004	0.05004	—	0.05004	712.717	0.06308	0.00134	—	714.694
Industrial Park	0.02847	0.51764	0.43482	0.00311	0.03934	—	0.03934	0.03934	—	0.03934	560.308	0.04959	0.00106	—	561.862
Total	0.27571	4.79120	2.58468	0.03008	0.38098	—	0.38098	0.38098	—	0.38098	5,426.14	0.48021	0.01022	—	5,441.19

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	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	1.87194	31.9932	13.6141	0.20421	2.58668	—	2.58668	2.58668	—	2.58668	40,609.8	0.76467	0.07647	—	40,651.7
Consumer Products	96.8104	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.00000	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landscape Equipmen	25.2907	2.08010	232.095	0.01112	0.19261	—	0.19261	0.14570	—	0.14570	714.903	0.02992	0.00601	—	717.442
Total	123.973	34.0733	245.709	0.21534	2.77929	—	2.77929	2.73238	—	2.73238	41,324.7	0.79459	0.08248	—	41,369.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	1.87194	31.9932	13.6141	0.20421	2.58668	—	2.58668	2.58668	—	2.58668	40,609.8	0.76467	0.07647	—	40,651.7
Consumer Products	96.8104	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.00000	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	98.6824	31.9932	13.6141	0.20421	2.58668	—	2.58668	2.58668	—	2.58668	40,609.8	0.76467	0.07647	—	40,651.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.05616	0.95980	0.40842	0.00613	0.07760	—	0.07760	0.07760	—	0.07760	1,105.22	0.02081	0.00208	—	1,106.36
Consumer Products	17.6679	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.00000	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	4.17297	0.34322	38.2957	0.00184	0.03178	—	0.03178	0.02404	—	0.02404	107.011	0.00448	0.00090	—	107.391
Total	21.8970	1.30301	38.7041	0.00796	0.10938	—	0.10938	0.10164	—	0.10164	1,212.23	0.02529	0.00298	—	1,213.75

4.3.2. Mitigated

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

Source	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	1.87194	31.9932	13.6141	0.20421	2.58668	—	2.58668	2.58668	—	2.58668	40,609.8	0.76467	0.07647	—	40,651.7

Consumer Products	96.8104	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.00000	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	25.2907	2.08010	232.095	0.01112	0.19261	—	0.19261	0.14570	—	0.14570	714.903	0.02992	0.00601	—	717.442
Total	123.973	34.0733	245.709	0.21534	2.77929	—	2.77929	2.73238	—	2.73238	41,324.7	0.79459	0.08248	—	41,369.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	1.87194	31.9932	13.6141	0.20421	2.58668	—	2.58668	2.58668	—	2.58668	40,609.8	0.76467	0.07647	—	40,651.7
Consumer Products	96.8104	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.00000	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	98.6824	31.9932	13.6141	0.20421	2.58668	—	2.58668	2.58668	—	2.58668	40,609.8	0.76467	0.07647	—	40,651.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.05616	0.95980	0.40842	0.00613	0.07760	—	0.07760	0.07760	—	0.07760	1,105.22	0.02081	0.00208	—	1,106.36
Consumer Products	17.6679	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.00000	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	4.17297	0.34322	38.2957	0.00184	0.03178	—	0.03178	0.02404	—	0.02404	107.011	0.00448	0.00090	—	107.391
Total	21.8970	1.30301	38.7041	0.00796	0.10938	—	0.10938	0.10164	—	0.10164	1,212.23	0.02529	0.00298	—	1,213.75

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	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	116.671	1.23430	0.03098	—	156.760
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	401.307	16.0018	0.38407	—	915.804
Strip Mall	—	—	—	—	—	—	—	—	—	—	176.172	7.02470	0.16860	—	402.033
General Office Building	—	—	—	—	—	—	—	—	—	—	522.116	20.8190	0.49969	—	1,191.50
Industrial Park	—	—	—	—	—	—	—	—	—	—	534.058	21.2951	0.51112	—	1,218.75
Total	—	—	—	—	—	—	—	—	—	—	1,750.32	66.3749	1.59446	—	3,884.85
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	116.671	1.23430	0.03098	—	156.760
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	401.307	16.0018	0.38407	—	915.804
Strip Mall	—	—	—	—	—	—	—	—	—	—	176.172	7.02470	0.16860	—	402.033
General Office Building	—	—	—	—	—	—	—	—	—	—	522.116	20.8190	0.49969	—	1,191.50
Industrial Park	—	—	—	—	—	—	—	—	—	—	534.058	21.2951	0.51112	—	1,218.75
Total	—	—	—	—	—	—	—	—	—	—	1,750.32	66.3749	1.59446	—	3,884.85

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	19.3162	0.20435	0.00513	—	25.9535
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	66.4409	2.64928	0.06359	—	151.622
Strip Mall	—	—	—	—	—	—	—	—	—	—	29.1672	1.16302	0.02791	—	66.5612
General Office Building	—	—	—	—	—	—	—	—	—	—	86.4423	3.44682	0.08273	—	197.266
Industrial Park	—	—	—	—	—	—	—	—	—	—	88.4194	3.52565	0.08462	—	201.778
Total	—	—	—	—	—	—	—	—	—	—	289.786	10.9891	0.26398	—	643.180

4.4.2. Mitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	113.834	1.12117	0.02826	—	150.286
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	364.106	14.5184	0.34847	—	830.909
Strip Mall	—	—	—	—	—	—	—	—	—	—	159.083	6.34331	0.15225	—	363.036
General Office Building	—	—	—	—	—	—	—	—	—	—	470.688	18.7683	0.45047	—	1,074.14
Industrial Park	—	—	—	—	—	—	—	—	—	—	481.453	19.1976	0.46077	—	1,098.70
Total	—	—	—	—	—	—	—	—	—	—	1,589.16	59.9487	1.44022	—	3,517.07

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	113.834	1.12117	0.02826	—	150.286
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	364.106	14.5184	0.34847	—	830.909
Strip Mall	—	—	—	—	—	—	—	—	—	—	159.083	6.34331	0.15225	—	363.036
General Office Building	—	—	—	—	—	—	—	—	—	—	470.688	18.7683	0.45047	—	1,074.14
Industrial Park	—	—	—	—	—	—	—	—	—	—	481.453	19.1976	0.46077	—	1,098.70
Total	—	—	—	—	—	—	—	—	—	—	1,589.16	59.9487	1.44022	—	3,517.07
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	18.8465	0.18562	0.00468	—	24.8815
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	60.2818	2.40369	0.05769	—	137.567
Strip Mall	—	—	—	—	—	—	—	—	—	—	26.3380	1.05021	0.02521	—	60.1048
General Office Building	—	—	—	—	—	—	—	—	—	—	77.9277	3.10730	0.07458	—	177.835
Industrial Park	—	—	—	—	—	—	—	—	—	—	79.7101	3.17837	0.07629	—	181.903
Total	—	—	—	—	—	—	—	—	—	—	263.104	9.92520	0.23845	—	582.291

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	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	54.7937	5.47644	0.00000	—	191.705
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	1,071.24	107.066	0.00000	—	3,747.89
Strip Mall	—	—	—	—	—	—	—	—	—	—	272.448	27.2302	0.00000	—	953.203
General Office Building	—	—	—	—	—	—	—	—	—	—	298.054	29.7895	0.00000	—	1,042.79
Industrial Park	—	—	—	—	—	—	—	—	—	—	312.423	31.2256	0.00000	—	1,093.06
Total	—	—	—	—	—	—	—	—	—	—	2,008.96	200.788	0.00000	—	7,028.65
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	54.7937	5.47644	0.00000	—	191.705
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	1,071.24	107.066	0.00000	—	3,747.89
Strip Mall	—	—	—	—	—	—	—	—	—	—	272.448	27.2302	0.00000	—	953.203
General Office Building	—	—	—	—	—	—	—	—	—	—	298.054	29.7895	0.00000	—	1,042.79
Industrial Park	—	—	—	—	—	—	—	—	—	—	312.423	31.2256	0.00000	—	1,093.06
Total	—	—	—	—	—	—	—	—	—	—	2,008.96	200.788	0.00000	—	7,028.65
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	—	—	—	—	—	—	—	—	—	—	9.07173	0.90669	0.00000	—	31.7389
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	177.355	17.7260	0.00000	—	620.506
Strip Mall	—	—	—	—	—	—	—	—	—	—	45.1069	4.50827	0.00000	—	157.814
General Office Building	—	—	—	—	—	—	—	—	—	—	49.3463	4.93199	0.00000	—	172.646
Industrial Park	—	—	—	—	—	—	—	—	—	—	51.7253	5.16976	0.00000	—	180.969
Total	—	—	—	—	—	—	—	—	—	—	332.605	33.2427	0.00000	—	1,163.67

4.5.2. Mitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	54.7937	5.47644	0.00000	—	191.705
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	1,071.24	107.066	0.00000	—	3,747.89
Strip Mall	—	—	—	—	—	—	—	—	—	—	272.448	27.2302	0.00000	—	953.203
General Office Building	—	—	—	—	—	—	—	—	—	—	298.054	29.7895	0.00000	—	1,042.79
Industrial Park	—	—	—	—	—	—	—	—	—	—	312.423	31.2256	0.00000	—	1,093.06
Total	—	—	—	—	—	—	—	—	—	—	2,008.96	200.788	0.00000	—	7,028.65

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	54.7937	5.47644	0.00000	—	191.705
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	1,071.24	107.066	0.00000	—	3,747.89
Strip Mall	—	—	—	—	—	—	—	—	—	—	272.448	27.2302	0.00000	—	953.203
General Office Building	—	—	—	—	—	—	—	—	—	—	298.054	29.7895	0.00000	—	1,042.79
Industrial Park	—	—	—	—	—	—	—	—	—	—	312.423	31.2256	0.00000	—	1,093.06
Total	—	—	—	—	—	—	—	—	—	—	2,008.96	200.788	0.00000	—	7,028.65
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	9.07173	0.90669	0.00000	—	31.7389
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	177.355	17.7260	0.00000	—	620.506
Strip Mall	—	—	—	—	—	—	—	—	—	—	45.1069	4.50827	0.00000	—	157.814
General Office Building	—	—	—	—	—	—	—	—	—	—	49.3463	4.93199	0.00000	—	172.646
Industrial Park	—	—	—	—	—	—	—	—	—	—	51.7253	5.16976	0.00000	—	180.969
Total	—	—	—	—	—	—	—	—	—	—	332.605	33.2427	0.00000	—	1,163.67

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	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	2.86301	2.86301
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	18.4814	18.4814
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	2.99861	2.99861
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	1.44623	1.44623
Industrial Park	—	—	—	—	—	—	—	—	—	—	—	—	—	121.693	121.693
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	147.482	147.482
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	2.86301	2.86301
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	18.4814	18.4814
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	2.99861	2.99861
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	1.44623	1.44623
Industrial Park	—	—	—	—	—	—	—	—	—	—	—	—	—	121.693	121.693
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	147.482	147.482
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	0.47400	0.47400
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	3.05981	3.05981
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	0.49645	0.49645
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	0.23944	0.23944
Industrial Park	—	—	—	—	—	—	—	—	—	—	—	—	—	20.1476	20.1476
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	24.4173	24.4173

4.6.2. Mitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	2.86301	2.86301
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	18.4814	18.4814
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	2.99861	2.99861
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	1.44623	1.44623
Industrial Park	—	—	—	—	—	—	—	—	—	—	—	—	—	121.693	121.693
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	147.482	147.482

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	2.86301	2.86301
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	18.4814	18.4814
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	2.99861	2.99861
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	1.44623	1.44623
Industrial Park	—	—	—	—	—	—	—	—	—	—	—	—	—	121.693	121.693
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	147.482	147.482
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	0.47400	0.47400
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	3.05981	3.05981
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	0.49645	0.49645
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	0.23944	0.23944
Industrial Park	—	—	—	—	—	—	—	—	—	—	—	—	—	20.1476	20.1476
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	24.4173	24.4173

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

4.7.2. Mitigated

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

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	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	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8.2. Mitigated

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

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	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	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9.2. Mitigated

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

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	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	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	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	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

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

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

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

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

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

Species	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequester	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.00000	0.00000	0.00000	0.00000	582,755	582,755	582,755	212,705,575

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Total all Land Uses	0.00000	0.00000	0.00000	0.00000	582,755	582,755	582,755	212,705,575

5.10. Operational Area Sources

5.10.1. Hearths

Land Use	Hearth Type	Unmitigated (number)	Mitigated (number)
Single Family Housing	Wood Fireplaces	0	0
Single Family Housing	Gas Fireplaces	205	205
Single Family Housing	Propane Fireplaces	0	0
Single Family Housing	Electric Fireplaces	0	0
Single Family Housing	No Fireplaces	0	0
Single Family Housing	Conventional Wood Stoves	0	0

Single Family Housing	Catalytic Wood Stoves	0	0
Single Family Housing	Non-Catalytic Wood Stoves	0	0
Single Family Housing	Pellet Wood Stoves	0	0
Apartments Mid Rise	Wood Fireplaces	0	0
Apartments Mid Rise	Gas Fireplaces	2,688	2,688
Apartments Mid Rise	Propane Fireplaces	0	0
Apartments Mid Rise	Electric Fireplaces	0	0
Apartments Mid Rise	No Fireplaces	0	0
Apartments Mid Rise	Conventional Wood Stoves	0	0
Apartments Mid Rise	Catalytic Wood Stoves	0	0
Apartments Mid Rise	Non-Catalytic Wood Stoves	0	0
Apartments Mid Rise	Pellet Wood Stoves	0	0
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
General Office Building	Wood Fireplaces	0	0
General Office Building	Gas Fireplaces	0	0
General Office Building	Propane Fireplaces	0	0
General Office Building	Electric Fireplaces	0	0
General Office Building	No Fireplaces	0	0
General Office Building	Conventional Wood Stoves	0	0
General Office Building	Catalytic Wood Stoves	0	0

General Office Building	Non-Catalytic Wood Stoves	0	0
General Office Building	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

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)
6,034,966	2,011,655	2,315,432	771,811	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00000
Summer Days	day/yr	330.000

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value
Snow Days	day/yr	0.00000
Summer Days	day/yr	330.000

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)
Single Family Housing	1,242,987	203.983	0.0330	0.0040	8,179,524
Apartments Mid Rise	7,977,704	203.983	0.0330	0.0040	67,216,897
Strip Mall	3,985,087	203.983	0.0330	0.0040	2,875,665
General Office Building	12,411,497	203.983	0.0330	0.0040	13,432,288
Industrial Park	9,757,388	203.983	0.0330	0.0040	10,559,891

5.11.2. Mitigated

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

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Single Family Housing	1,242,987	203.983	0.0330	0.0040	8,179,524
Apartments Mid Rise	7,977,704	203.983	0.0330	0.0040	67,216,897
Strip Mall	3,985,087	203.983	0.0330	0.0040	2,875,665
General Office Building	12,411,497	203.983	0.0330	0.0040	13,432,288
Industrial Park	9,757,388	203.983	0.0330	0.0040	10,559,891

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Single Family Housing	6,195,510	39,808,014
Apartments Mid Rise	81,236,736	0.00000
Strip Mall	35,662,512	0.00000
General Office Building	105,692,217	0.00000

Industrial Park	108,109,606	0.00000

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Single Family Housing	5,621,186	39,808,014
Apartments Mid Rise	73,706,091	0.00000
Strip Mall	32,203,248	0.00000
General Office Building	95,281,534	0.00000
Industrial Park	97,460,810	0.00000

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	101.670	0.00000
Apartments Mid Rise	1,987.68	0.00000
Strip Mall	505.527	0.00000
General Office Building	553.039	0.00000
Industrial Park	579.701	0.00000

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	101.670	0.00000
Apartments Mid Rise	1,987.68	0.00000
Strip Mall	505.527	0.00000
General Office Building	553.039	0.00000
Industrial Park	579.701	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
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088.00	0.00225	2.50000	2.50000	10.00000
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430.00	0.11538	0.60000	0.00000	1.000000
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
General Office Building	Household refrigerators and/or freezers	R-134a	1,430.00	0.01679	0.60000	0.00000	1.000000
General Office Building	Other commercial A/C and heat pumps	R-410A	2,088.00	0.00180	4.00000	4.00000	18.0000
Industrial Park	Other commercial A/C and heat pumps	R-410A	2,088.00	0.30000	4.00000	4.00000	18.0000

5.14.2. Mitigated

Land Use	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced

Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088.00	0.00225	2.50000	2.50000	10.00000
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430.00	0.11538	0.60000	0.00000	1.000000
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
General Office Building	Household refrigerators and/or freezers	R-134a	1,430.00	0.01679	0.60000	0.00000	1.000000
General Office Building	Other commercial A/C and heat pumps	R-410A	2,088.00	0.00180	4.00000	4.00000	18.0000
Industrial Park	Other commercial A/C and heat pumps	R-410A	2,088.00	0.30000	4.00000	4.00000	18.0000

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

5.15.2. Mitigated

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

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

5.18.2.2. Mitigated

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

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	21.2000	annual days of extreme heat
Extreme Precipitation	9.85000	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	34.1100	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	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	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	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	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	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 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	32.1469
AQ-PM	2.93715
AQ-DPM	12.6696
Drinking Water	31.2851
Lead Risk Housing	44.5117
Pesticides	45.0000
Toxic Releases	12.4531
Traffic	30.6125
Effect Indicators	—
CleanUp Sites	0.00000
Groundwater	0.00000
Haz Waste Facilities/Generators	50.1390
Impaired Water Bodies	51.2180
Solid Waste	75.6701
Sensitive Population	—
Asthma	39.7183
Cardio-vascular	16.4756
Low Birth Weights	15.8712
Socioeconomic Factor Indicators	—
Education	30.4100
Housing	30.2028
Linguistic	29.5304
Poverty	48.9196
Unemployment	28.2015

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	50.94315411
Employed	57.44899269
Median HI	43.46208136
Education	—
Bachelor's or higher	34.96727833
High school enrollment	5.787244963
Preschool enrollment	60.90080842
Transportation	—
Auto Access	47.37585012
Active commuting	46.70858463
Social	—
2-parent households	13.1271654
Voting	69.79340434
Neighborhood	—
Alcohol availability	65.10971385
Park access	9.033748236
Retail density	39.11202361
Supermarket access	35.78852817
Tree canopy	90.65828307
Housing	—
Homeownership	38.44475812
Housing habitability	68.77967407
Low-inc homeowner severe housing cost burden	57.70563326
Low-inc renter severe housing cost burden	71.42307199

Uncrowded housing	65.16104196
Health Outcomes	—
Insured adults	62.95393302
Arthritis	0.0
Asthma ER Admissions	58.7
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	17.9
Cognitively Disabled	32.0
Physically Disabled	55.6
Heart Attack ER Admissions	71.4
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	52.2
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	8.3
SLR Inundation Area	0.0

Children	22.0
Elderly	63.3
English Speaking	87.4
Foreign-born	2.3
Outdoor Workers	24.5
Climate Change Adaptive Capacity	—
Impervious Surface Cover	90.1
Traffic Density	24.3
Traffic Access	0.0
Other Indices	—
Hardship	44.5
Other Decision Support	—
2016 Voting	74.0

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	15.0000
Healthy Places Index Score for Project Location (b)	45.0000
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
Operations: Hearths	Excludes wood-burning fireplaces. To be conservative, assumes all new residential units would include gas-fired fireplaces. Assumes an average of 2 hrs/day, 60 days/yr based on model defaults.

8.5. Operations

8.5.2. Area Sources

8.5.2.1. Hearths

Land Use	Model Parameter	Default Value	New Value
Single Family Housing	Gas Fireplaces	0	205
Single Family Housing	No Fireplaces	205	0
Single Family Housing	Hours/Day	0	2
Single Family Housing	Days/Year	0	60
Apartments Mid Rise	Gas Fireplaces	0	2,688
Apartments Mid Rise	No Fireplaces	2,688	0
Apartments Mid Rise	Hours/Day	0	2
Apartments Mid Rise	Days/Year	0	60

Calendar Year	EMFAC2021 Vehicle Category	Fuel Type	Exhaust CO2	Exhaust CH4	Exhaust N2O
2045	All Other Buses	DSL	1	1	1
2045	All Other Buses	NG	1	1	1
2045	All Other Buses	ELEC	0	0	0
2045	LDA	GAS	1	1	1
2045	LDA	DSL	1	1	1
2045	LDA	ELEC	1	1	1
2045	LDA	PHE	1	1	1
2045	LDT1	GAS	1	1	1
2045	LDT1	DSL	1	1	1
2045	LDT1	ELEC	1	1	1
2045	LDT1	PHE	1	1	1
2045	LDT2	GAS	1	1	1
2045	LDT2	DSL	1	1	1
2045	LDT2	ELEC	1	1	1
2045	LDT2	PHE	1	1	1
2045	LHD1	GAS	1.625233765	1.566391721	1.612440372
2045	LHD1	DSL	1.586890542	1.606223669	1.586890542
2045	LHD1	ELEC	0	0	0
2045	LHD2	GAS	1.594353597	1.519354002	1.573976909
2045	LHD2	DSL	1.556295501	1.541099403	1.556295501
2045	LHD2	ELEC	0	0	0
2045	MCY	GAS	1	1	1
2045	MDV	GAS	1	1	1
2045	MDV	DSL	1	1	1
2045	MDV	ELEC	1	1	1
2045	MDV	PHE	1	1	1
2045	MH	GAS	1	1	1
2045	MH	DSL	1	1	1
2045	MH	ELEC	0	0	0
2045	Motor Coach	DSL	1	1	1
2045	Motor Coach	ELEC	0	0	0
2045	OBUS	GAS	1.908523492	1.535626665	2.543996189
2045	OBUS	ELEC	0	0	0
2045	PTO	DSL	1.803485583	1.786556153	1.803485583
2045	PTO	ELEC	0	0	0
2045	SBUS	GAS	1.333174415	1.436540079	1.52836209
2045	SBUS	DSL	1.583661815	1.534945941	1.583661815
2045	SBUS	NG	1.537550324	1.625388497	1.537550324
2045	SBUS	ELEC	0	0	0
2045	T6 CAIRP Class 4	DSL	2.260146672	2.342620402	2.260146672
2045	T6 CAIRP Class 4	ELEC	0	0	0
2045	T6 CAIRP Class 5	DSL	2.256103779	2.336573798	2.256103779
2045	T6 CAIRP Class 5	ELEC	0	0	0
2045	T6 CAIRP Class 6	DSL	2.267324628	2.351788051	2.267324628
2045	T6 CAIRP Class 6	ELEC	0	0	0
2045	T6 CAIRP Class 7	DSL	1.260104459	1.298702965	1.260104459
2045	T6 CAIRP Class 7	NG	1.206948773	1.316145571	1.206948773
2045	T6 CAIRP Class 7	ELEC	0	0	0
2045	T6 Instate Delivery Class 4	DSL	1.928272398	1.982620091	1.928272398
2045	T6 Instate Delivery Class 4	NG	1.876732831	2.080599564	1.876732831
2045	T6 Instate Delivery Class 4	ELEC	0	0	0
2045	T6 Instate Delivery Class 5	DSL	1.927081738	1.981968488	1.927081738
2045	T6 Instate Delivery Class 5	NG	1.891400552	2.097049707	1.891400552
2045	T6 Instate Delivery Class 5	ELEC	0	0	0
2045	T6 Instate Delivery Class 6	DSL	1.930831639	1.985426629	1.930831639
2045	T6 Instate Delivery Class 6	NG	1.893725174	2.099698829	1.893725174
2045	T6 Instate Delivery Class 6	ELEC	0	0	0
2045	T6 Instate Delivery Class 7	DSL	1.499589013	1.476006978	1.499589013
2045	T6 Instate Delivery Class 7	NG	1.401444907	1.526829508	1.401444907
2045	T6 Instate Delivery Class 7	ELEC	0	0	0
2045	T6 Instate Other Class 4	DSL	1.986592759	2.02130179	1.986592759

2045 T6 Instate Other Class 4	NG	1.909961541	2.108734188	1.909961541
2045 T6 Instate Other Class 4	ELEC	0	0	0
2045 T6 Instate Other Class 5	DSL	1.987989581	2.02102998	1.987989581
2045 T6 Instate Other Class 5	NG	1.918461452	2.116924594	1.918461452
2045 T6 Instate Other Class 5	ELEC	0	0	0
2045 T6 Instate Other Class 6	DSL	1.986969621	2.020625577	1.986969621
2045 T6 Instate Other Class 6	NG	1.91065848	2.108010116	1.91065848
2045 T6 Instate Other Class 6	ELEC	0	0	0
2045 T6 Instate Other Class 7	DSL	1.620248979	1.528126657	1.620248979
2045 T6 Instate Other Class 7	NG	1.51109084	1.614799674	1.51109084
2045 T6 Instate Other Class 7	ELEC	0	0	0
2045 T6 Instate Tractor Class 6	DSL	2.0384636	2.050485047	2.0384636
2045 T6 Instate Tractor Class 6	NG	1.962738637	2.159181999	1.962738637
2045 T6 Instate Tractor Class 6	ELEC	0	0	0
2045 T6 Instate Tractor Class 7	DSL	1.176736256	1.180771669	1.176736256
2045 T6 Instate Tractor Class 7	NG	1.138259876	1.2151928	1.138259876
2045 T6 Instate Tractor Class 7	ELEC	0	0	0
2045 T6 OOS Class 4	DSL	1	1	1
2045 T6 OOS Class 4	ELEC	0	0	0
2045 T6 OOS Class 5	DSL	1	1	1
2045 T6 OOS Class 5	ELEC	0	0	0
2045 T6 OOS Class 6	DSL	1	1	1
2045 T6 OOS Class 6	ELEC	0	0	0
2045 T6 OOS Class 7	DSL	1	1	1
2045 T6 OOS Class 7	ELEC	0	0	0
2045 T6 Public Class 4	DSL	1.705462353	1.522944343	1.705462353
2045 T6 Public Class 4	NG	1.660789344	1.808261815	1.660789344
2045 T6 Public Class 4	ELEC	0	0	0
2045 T6 Public Class 5	DSL	1.703186046	1.546634975	1.703186046
2045 T6 Public Class 5	NG	1.625287755	1.7561386	1.625287755
2045 T6 Public Class 5	ELEC	0	0	0
2045 T6 Public Class 6	DSL	1.704442022	1.585678166	1.704442022
2045 T6 Public Class 6	NG	1.636916979	1.781260372	1.636916979
2045 T6 Public Class 6	ELEC	0	0	0
2045 T6 Public Class 7	DSL	1.575874108	1.483825001	1.575874108
2045 T6 Public Class 7	NG	1.50053842	1.637967823	1.50053842
2045 T6 Public Class 7	ELEC	0	0	0
2045 T6 Utility Class 5	DSL	2.261598693	2.366768041	2.261598693
2045 T6 Utility Class 5	NG	2.150256725	2.402390224	2.150256725
2045 T6 Utility Class 5	ELEC	0	0	0
2045 T6 Utility Class 6	DSL	2.260663191	2.365503668	2.260663191
2045 T6 Utility Class 6	NG	2.149528695	2.401491252	2.149528695
2045 T6 Utility Class 6	ELEC	0	0	0
2045 T6 Utility Class 7	DSL	2.294687728	2.389912934	2.294687728
2045 T6 Utility Class 7	NG	2.181976653	2.433821293	2.181976653
2045 T6 Utility Class 7	ELEC	0	0	0
2045 T6TS	GAS	1.948665831	1.812150386	2.646232773
2045 T6TS	ELEC	0	0	0
2045 T7 CAIRP Class 8	DSL	1.23266703	1.276945037	1.23266703
2045 T7 CAIRP Class 8	NG	1.168325027	1.285576147	1.168325027
2045 T7 CAIRP Class 8	ELEC	0	0	0
2045 T7 NNOOS Class 8	DSL	1	1	1
2045 T7 NNOOS Class 8	ELEC	0	0	0
2045 T7 NOOS Class 8	DSL	1	1	1
2045 T7 NOOS Class 8	ELEC	0	0	0
2045 T7 Other Port Class 8	DSL	1.204990253	1.234317082	1.204990253
2045 T7 Other Port Class 8	ELEC	0	0	0
2045 T7 POAK Class 8	DSL	1.186097079	1.22780555	1.186097079
2045 T7 POAK Class 8	NG	1.114049348	1.229386418	1.114049348
2045 T7 POAK Class 8	ELEC	0	0	0
2045 T7 POLA Class 8	DSL	1.138385562	1.172797263	1.138385562
2045 T7 POLA Class 8	NG	1.076405653	1.182094195	1.076405653

2045 T7 POLA Class 8	ELEC	0	0	0
2045 T7 Public Class 8	DSL	1.502391447	1.391370266	1.502391447
2045 T7 Public Class 8	NG	1.556514394	1.714004358	1.556514394
2045 T7 Public Class 8	ELEC	0	0	0
2045 T7 Single Concrete/Transit Mix Class 8	DSL	2.160092575	2.214678366	2.160092575
2045 T7 Single Concrete/Transit Mix Class 8	NG	2.026275116	2.275349847	2.026275116
2045 T7 Single Concrete/Transit Mix Class 8	ELEC	0	0	0
2045 T7 Single Dump Class 8	DSL	1.704055109	1.644961143	1.704055109
2045 T7 Single Dump Class 8	NG	1.605675448	1.752536314	1.605675448
2045 T7 Single Dump Class 8	ELEC	0	0	0
2045 T7 Single Other Class 8	DSL	1.789275157	1.741557433	1.789275157
2045 T7 Single Other Class 8	NG	1.696931821	1.856843867	1.696931821
2045 T7 Single Other Class 8	ELEC	0	0	0
2045 T7 SWCV Class 8	DSL	1.26695296	1.361450416	1.26695296
2045 T7 SWCV Class 8	NG	1.507835231	1.105684997	1.507835231
2045 T7 SWCV Class 8	ELEC	0	0	0
2045 T7 Tractor Class 8	DSL	1.153835943	1.17706537	1.153835943
2045 T7 Tractor Class 8	NG	1.086951942	1.181896804	1.086951942
2045 T7 Tractor Class 8	ELEC	0	0	0
2045 T7 Utility Class 8	DSL	1.629301501	1.647109549	1.629301501
2045 T7 Utility Class 8	ELEC	0	0	0
2045 T7IS	GAS	1.897138164	1.926772857	2.699580817
2045 T7IS	ELEC	0	0	0
2045 UBUS	ELEC	1	1	1
2045 UBUS	NG	0.90399137	1	0.90399137
2045 UBUS	GAS	0.904166491	1	1
2045 UBUS	DSL	0.90399137	1	0.90399137
2045 UBUS	ELEC	0	0	0
HIGHEST VALUE ALL VEHICLE CATEGORIES:		**2.294687728**	**2.433821293**	**2.699580817**

APPENDIX D

Energy Impact Analysis

ENERGY IMPACT ANALYSIS

FOR

CITY OF ATASCADERO 2045 GENERAL PLAN UPDATE

FEBRUARY 2026

PREPARED BY:

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Appendix A: Energy Modeling

LIST OF COMMON TERMS & ACRONYMS

AFV	Alternative Fuel Vehicles
CalEEMod	California Emissions Estimator Model
ARB	California Air Resource Board
CEC	California Energy Commission
CEQA	California Environmental Quality Act
EMFAC	Emissions Factor
EO	Executive Order
EPA	Environmental Protection Agency
EPACT	Energy Policy Act
GHG	Greenhouse Gas
GPU	General Plan Update
kBTU	Kilo British Thermal Units
kW	Kilowatt
kWh	Kilowatt Hour
MMBTU	Million Metric British Thermal Units
MW	Megawatt
PG&E	Pacific Gas and Electric
PV	Photovoltaic
RTP	Regional Transpotation Plan
SCS	Sustainable Communities Strategy
SLOCOG	San Luis Obispo Council of Governments
SoCalGas	Southern California Gas Company
VMT	Vehicle Mile Traveled

INTRODUCTION

This report provides an overview of existing energy providers and usage within the City of Atascadero and surrounding regions; a summary of the applicable regulatory framework and an analysis of energy impacts associated with implementation of the City of Atascadero 2045 General Plan Update (2045 GPU). The findings of this analysis are intended to help inform the development of goals and policies in the City's 2045 GPU.

PROPOSED CITY OF ATASCADERO GENERAL PLAN UPDATE

The 2045 GPU is a long-range policy document that provides context and establishes guidance for decision-making, design and development of new projects, conservation of natural resources, promotion of economic development, improvements to mobility and infrastructure systems, expansion of public services, and enhancement of community amenities. The 2045 GPU identifies year 2045 as a horizon year; however, the City recognizes that not all initiatives and goals in the 2045 GPU may be achieved by 2045.

ENERGY FUNDAMENTALS

Energy use is typically associated with transportation, construction, and the operation of land uses. Transportation energy use is generally categorized as direct and indirect energy. Direct energy relates to energy consumption by vehicle propulsion. Indirect energy relates to the long-term energy consumption of equipment, such as maintenance activities. Energy is also consumed by construction, routine operation and, maintenance of land use. Construction energy relates to a direct one-time energy expenditure primarily associated with the consumption of fuel to operate construction equipment. Energy consumption related to land use is normally associated with direct energy consumption for heating, ventilation, and air conditioning of buildings.

EXISTING SETTING

Physical Setting

The City of Atascadero is located within San Luis Obispo County. Energy use, including the consumption of electricity, natural gas, and petroleum-based fuels, can directly impact local and regional air quality and generate greenhouse gas (GHG) emissions that contribute to climate change. The City is served primarily by Pacific Gas & Electric (PG&E) for electrical service and Southern California Gas Company (SoCalGas) for natural gas service.

Energy Resources

Electricity

State of California

In 2024, total system electric generation (TSEG) for California was 278,338 gigawatt-hours (GWh), down 1 percent (2,802 GWh) from 2023. TSEG is the sum of all utility-scale in-state generation plus net electricity imports from power plants with a nameplate capacity of at least one megawatt (MW). Clean energy resources accounted for 62 percent of California's power mix, a 4 percent increase from 58 percent in 2023. In-state generation was 216,181 GWh in 2024, virtually unchanged from the 2023 value of 216,047 GWh. Imported energy decreased to 62,157 GWh, down 5 percent (3,361 GWh) from 2023 (CEC 2026a).

City of Atascadero

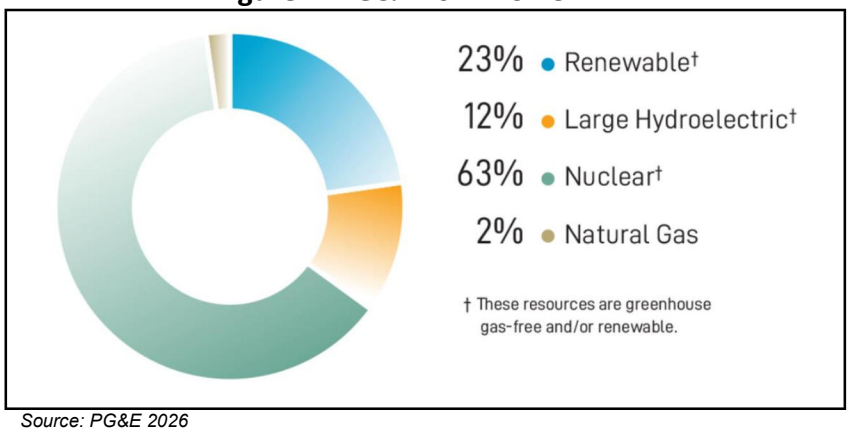
Electric services within the City of Atascadero are provided through a partnership between PG&E and Central Coast Community Energy (3CE). 3CE is committed to providing energy from 100-percent renewable sources. Participation in the 3CE program is voluntary and PG&E continues to provide electrical service and maintains electrical infrastructure (3CE 2026).

In 2024, PG&E supplied 98% greenhouse gas-free electricity to residential and business customers to whom we directly sell power, including from renewables, nuclear and large hydroelectric power. The power mix delivered to PG&E's bundled-service customers in 2024 included the following greenhouse gas-free technologies. The breakdown of PG&E's power mix is shown in Figure 1 (PG&E 2026):

- Eligible renewable resources, such as wind, geothermal, biomass, solar and small hydro (23%)
- Non-emitting nuclear generation (63%)
- Large hydroelectric facilities (12%)
- Natural gas fueled facilities (2%)

Electricity usage rates for the City of Atascadero are not currently available. However, in 2024, San Luis Obispo County consumed a total of 1,681.4 GWh of electricity (CEC 2026e).

Figure 1. PG&E 2021 Power Mix



Source: PG&E 2026

Natural Gas

California

Natural gas continues to play an important and varied role in California. Nearly 45 percent of the natural gas burned in California was used for electricity generation, and much of the remainder consumed in the residential (21 percent), industrial (25 percent), and commercial (9 percent) sectors. California continues to depend upon out-of-state imports for nearly 90 percent of its natural gas supply, underscoring the importance of monitoring and evaluating ongoing market trends and outlook. Natural gas has become an increasingly important source of energy since the state's power plants rely on this fuel (CEC 2026b).

City of Atascadero

Natural gas services in the City of Atascadero are provided by Southern California Gas Company (SoCalGas). SoCalGas's natural gas system encompasses approximately 20,000 square miles in Southern

California. Natural gas throughput provided by SoCalGas totals approximately 2.8 billion cubic feet per day (SoCalGas 2026).

Natural gas usage rates for the City of Atascadero are not currently available. However, in 2024, San Luis Obispo County consumed a total of 84.2 millions of therms of natural gas (CEC 2026f).

Petroleum Fuels

Gasoline

Gasoline is the most used transportation fuel in California, with ninety seven percent of all gasoline being consumed by light-duty cars, pickup trucks, and sport utility vehicles. In 2024, 11.681 billion gallons of gasoline were sold.

Existing and historical gasoline consumption rates for the City of Atascadero are not available. However, in 2024, the County of San Luis Obispo consumed an estimated 118 million gallons of gasoline (CEC 2026d).

Diesel

Diesel is the second largest transportation fuel used in California, representing 17 percent of total fuel sales behind gasoline. In 2024, 2.968 billion gallons of diesel were sold (CEC 2026c).

Existing and historical diesel consumption rates for the City of Atascadero are not available. However, in 2024, the County of San Luis Obispo consumed an estimated 21 million gallons of diesel (CEC 2026d).

Regulatory Framework

Federal

Energy Policy and Conservation Act

The Energy Policy and Conservation Act of 1975 sought to ensure that all vehicles sold in the United States would meet certain fuel economy goals. Through this Act, Congress established the first fuel economy standards for on-road motor vehicles in the U.S. Pursuant to the Act, the NHSTA, which is part of the U.S. DOT, is responsible for establishing additional vehicle standards and for revising existing standards. Since 1990, the fuel economy standard for new passenger cars has been 27.5 mpg. Since 1996, the fuel economy standard for new light trucks (gross vehicle weight of 8,500 pounds or less) has been 20.7 miles per gallon (mpg). Heavy-duty vehicles (i.e., vehicles and trucks over 8,500 pounds gross vehicle weight) are not currently subject to fuel economy standards. Compliance with federal fuel economy standards is determined based on each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the U.S. The CAFE program, administered by U.S. EPA, was created to determine vehicle manufacturers' compliance with the fuel economy standards. U.S. EPA calculates a CAFE value for each manufacturer based on city and highway fuel economy test results and vehicle sales. Based on the information generated under the CAFE program, the U.S. DOT is authorized to assess penalties for noncompliance.

Energy Policy Act of 1992

The Energy Policy Act of 1992 (EPAct) was passed to reduce the country's dependence on foreign petroleum and improve air quality. EPAct includes several parts intended to build an inventory of

alternative fuel vehicles (AFVs) in large, centrally fueled fleets in metropolitan areas. EPAct requires certain federal, state, and local government and private fleets to purchase a percentage of light-duty AFVs capable of running on alternative fuels each year. In addition, financial incentives are included in EPAct. Federal tax deductions will be allowed for businesses and individuals to cover the incremental cost of AFVs. States are also required by the act to consider a variety of incentive programs to help promote AFVs.

Energy Policy Act of 2005

The Energy Policy Act of 2005 was signed into law on August 8, 2005. Generally, the Act provides for renewed and expanded tax credits for electricity generated by qualified energy sources, such as landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for clean renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy.

Energy Independence and Security Act of 2007

The Energy Independence and Security Act of 2007 is intended to improve vehicle fuel economy and help reduce the United States' dependence on foreign oil. The Energy Independence and Security Act of 2007 also set energy efficiency standards for lighting and appliances.

State

Warren-Alquist Act

The 1975 Warren-Alquist Act established the California Energy Resources Conservation and Development Commission, now known as the California Energy Commission (CEC). The Act established a state policy to reduce wasteful, uneconomical, and unnecessary uses of energy by employing a range of measures. The California Public Utilities Commission (CPUC) regulates privately-owned utilities in the energy, rail, telecommunications, and water fields.

Assembly Bill 32: Climate Change Scoping Plan and Update

In 2006, the Legislature passed the California Global Warming Solutions Act of 2006 [Assembly Bill 32 (AB 32)], which created a comprehensive, multi-year program to reduce greenhouse gas emissions in California. In October 2008, ARB published its first Climate Change Scoping Plan (2008 Scoping Plan). The 2008 Scoping Plan contained the main strategies to be implemented to achieve the year 2020 target emission levels identified in AB 32. The 2008 Scoping Plan included ARB-recommended GHG reductions for each emissions sector of the state's GHG inventory. The largest proposed GHG reduction recommendations were associated with improving emissions standards for light-duty vehicles, implementing the Low Carbon Fuel Standard program, implementation of energy efficiency measures in buildings and appliances, the widespread development of combined heat and power systems, and developing a renewable portfolio standard for electricity production (ARB 2008).

The ARB's Scoping Plan is updated every five years. The First Update to the Climate Change Scoping Plan was approved by the ARB on May 22, 2014, which looked past the year 2020 targets to set mid-term goals (2030-2035) on the road to reaching the 2050 goals (ARB 2013). The 2017 Scoping Plan identified how the State established a path to reduce GHG emissions by 40 percent from 1990 levels by 2030, and substantially advance toward the 2050 climate goal of reducing GHG emissions by 80 percent below 1990 levels (ARB 2017). The most recent Scoping Plan update is the 2022 Scoping Plan for Achieving Carbon Neutrality (2022 Scoping Plan). The 2022 Scoping Plan lays out a path to achieve targets for carbon

neutrality and reduce anthropogenic greenhouse gas emissions by 85 percent below 1990 levels no later than 2045, as directed by Assembly Bill 1279 (ARB 2026).

Assembly Bill 1007: State Alternative Fuels Plan

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

Assembly Bill 2076: Reducing Dependence on Petroleum

Pursuant to Assembly Bill (AB) 2076 (Chapter 936, Statutes of 2000), the CEC and the ARB prepared and adopted a joint agency report in 2003, Reducing California's Petroleum Dependence. Included in this report are recommendations to increase the use of alternative fuels to 20 percent of on-road transportation fuel use by 2020 and 30 percent by 2030, significantly increase the efficiency of motor vehicles, and reduce per capita vehicle miles traveled (VMT) (ARB 2003). Further, a performance-based goal of AB 2076 was to reduce petroleum demand to 15 percent below 2003 demand by 2020.

Senate Bill SB 100

SB 100 The 100 Percent Clean Energy Act of 2018, which sets a state policy that eligible renewable energy and zero-carbon resources supply 100 percent (%) of all retail sales of electricity in California by 2045.

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

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

Senate Bill 375

SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a sustainable communities strategy (SCS) or alternative planning strategy (APS) that will address land use allocation in that MPOs regional transportation plan (RTP). ARB, in consultation with MPOs, establishes regional reduction targets for GHGs emitted by passenger cars and light trucks for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. ARB is also charged with reviewing each MPO's SCS or APS for consistency with its assigned targets. If MPOs do not meet the GHG reduction targets, funding for transportation projects may be withheld.

Senate Bill 1078: California Renewables Portfolio Standard Program

Senate Bill (SB) 1078 (Public Utilities Code Sections 387, 390.1, 399.25, and Article 16) addresses electricity supply and requires that retail sellers of electricity, including investor-owned utilities and community choice aggregators, provide a minimum of 20 percent of their supply from renewable sources by 2017. This SB will affect statewide GHG emissions associated with electricity generation. In 2008, Governor Schwarzenegger signed Executive Order (EO) S-14-08, which set the Renewables Portfolio Standard (RPS) target to 33 percent by 2020. It directed state government agencies and retail sellers of electricity to take all appropriate actions to implement this target. EO S-14-08 was later superseded by EO S-21-09 on September 15, 2009. EO S-21-09 directed the ARB to adopt regulations requiring 33 percent of electricity sold in the State to come from renewable energy by 2020. Statute SB X1-2 superseded this EO in 2011, which obligated all California electricity providers, including investor-owned utilities and publicly owned utilities, to obtain at least 33 percent of their energy from renewable electrical generation facilities by 2020.

Senate Bill 32 and Assembly Bill 197 of 2016

SB 32 was signed by Governor Brown on September 8, 2016. SB 32 effectively extends California's GHG emission-reduction goals from the year 2020 to the year 2030. This new emission-reduction target of 40 percent below 1990 levels by 2030 is intended to promote further GHG reductions in support of the State's ultimate goal of reducing GHG emissions by 80 percent below 1990 levels by 2050. SB 32 also directs the ARB to update the Climate Change Scoping Plan to address this interim 2030 emission-reduction target. Achievement of these goals will have the co-benefit of increasing energy efficiency and reducing California's dependency on fossil fuels.

Executive Order S-06-06

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

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

In 2019, 2.87 percent of the total electrical system power in California was derived from biomass (CEC 2020).

Executive Order B-48-18: Zero-Emission Vehicles

In January 2018, Governor Brown signed EO B-48-18 which required all State entities to work with the private sector to put at least 5 million zero-emission vehicles on the road by 2030, as well as install 200 hydrogen fueling stations and 250,000 zero-emissions chargers by 2025. In addition, State entities are also required to continue to partner with local and regional governments to streamline the installation of zero-emission vehicle infrastructure. Additionally, all State entities are to support and recommend policies and actions to expand infrastructure in homes, through the Low-Carbon Fuel Standard.

Executive Order B-55-18

Establishes a new statewide goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter.

Energy Action Plan

The first Energy Action Plan (EAP) emerged in 2003 from a crisis atmosphere in California's energy markets. The State's three major energy policy agencies (CEC, CPUC, and the Consumer Power and Conservation Financing Authority [established under deregulation and now defunct]) came together to develop one high-level, coherent approach to meeting California's electricity and natural gas needs. It was the first time that energy policy agencies formally collaborated to define a common vision and set of strategies to address California's future energy needs and emphasize the importance of the impacts of energy policy on the California environment.

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

California Building Code

The California Building Code (CBC) contains standards that regulate the method of use, properties, performance, or types of materials used in the construction, alteration, improvement, repair, or rehabilitation of a building or other improvements to real property. The CBC is adopted every three years by the State's Building Standards Commission (BSC). In the interim, the BSC also adopts annual updates to make necessary mid-term corrections. The CBC standards apply statewide; however, a local jurisdiction may amend a CBC standard if it makes a finding that the amendment is reasonably necessary due to local climatic, geological, or topographical conditions.

Green Building Standards

In essence, green building standards are indistinguishable from any other building standards, are contained in the CBC, and regulate the construction of new buildings and improvements. Whereas the focus of traditional building standards has been protecting public health and safety, the focus of green building standards is to improve environmental performance.

The 2019 Building Energy Efficiency Standards (2019 Standards), adopted in May 2018, addressed four key areas: smart residential photovoltaic systems, updated thermal envelope standards (preventing heat transfer from the interior to the exterior and vice versa), residential and nonresidential ventilation

requirements, and non-residential lighting requirements. The 2019 Standards required new residential and non-residential construction; as well as major alterations to existing structures, to include electric vehicle (EV)-capable parking spaces which have electrical panel capacity and conduit to accommodate the future installation. In addition, the 2019 Standards also required the installation of solar photovoltaic (PV) systems for low-rise residential dwellings, defined as single-family dwellings and multi-family dwellings up to three stories in height. These requirements are based on various factors, including the floor area of the home, sun exposure, and climate zone. Under the 2019 standards, nonresidential buildings will use about 30 percent less energy due mainly to lighting upgrades (CEC 2019).

The 2022 Building Energy Efficiency Standards (2022 Standards), which were approved in December 2021, encourage efficient electric heat pumps, establish electric-ready requirements when natural gas is installed, support the future installation of battery storage, further expand solar photovoltaic and battery storage standards. The 2022 Standards extend solar PV system requirements, as well as battery storage capabilities for select land uses, including high-rise multi-family and non-residential land uses, such as office buildings, schools, restaurants, warehouses, theaters, grocery stores, and more. Depending on the land use and other factors, solar systems should be sized to meet targets of up to 60 percent of the structure's loads. These solar requirements became effective on January 1, 2023, and contribute to California's goal of reaching a net-zero carbon footprint by 2045 (CEC 2022).

The most current standards are the 2025 Standards, which became effective January 1, 2026. The 2025 Standards build upon the previous standards by expanding the use of heat pumps in newly constructed residential buildings, encouraging electric-readiness, strengthens ventilation standards, and more (CEC 2026g).

Advanced Clean Cars Program

In January 2012, ARB approved the Advanced Clean Cars program which combines the control of GHG emissions and criteria air pollutants, as well as requirements for greater numbers of zero-emission vehicles, into a single package of standards for vehicle model years 2017 through 2025. The new rules strengthen the GHG standard for 2017 models and beyond. This will be achieved through existing technologies, the use of stronger and lighter materials, and more efficient drivetrains and engines. The program's zero-emission vehicle regulation requires a battery, fuel cell, and/or plug-in hybrid electric vehicles to account for up to 15 percent of California's new vehicle sales by 2025. The program also includes a clean fuels outlet regulation designed to support the commercialization of zero-emission hydrogen fuel cell vehicles planned by vehicle manufacturers by 2015 by requiring increased numbers of hydrogen fueling stations throughout the state. The number of stations will grow as vehicle manufacturers sell more fuel cell vehicles. By 2025, when the rules will be fully implemented, the statewide fleet of new cars and light trucks will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions than the statewide fleet in 2016 (ARB 2016).

Advanced Clean Cars II

In August 2022, ARB approved the Advanced Clean Cars II program. The rule establishes a year-by-year roadmap so that by 2035 100% of new cars and light trucks sold in California will be zero-emission vehicles, including plug-in hybrid electric vehicles. Beginning in model year 2026 automakers sales of new vehicles will be required to be made up of 35% ZEVs and PHEVs. The regulation applies to automakers and covers only new vehicle sales. It does not impact existing vehicles on the road today, which will still be legal to own and drive (ARB 2022).

Small Off-Road Engines

In December 2021, ARB approved the Small Off-Road Engines regulation. This will require most newly manufactured small off-road engines such as those found in leaf blowers, lawn mowers and other equipment be zero emission starting in 2024. Portable generators, including those in recreational vehicles, would be required to meet more stringent standards in 2024 and meet zero-emission standards starting in 2028. Despite their small size, these engines are highly polluting. The volume of smog-forming emissions from this type of equipment has surpassed emissions from light-duty passenger cars and is projected to be nearly twice those of passenger cars by 2031. Older equipment can continue to be used and resold as this rule only impacts new equipment (ARB 2021).

San Luis Obispo County Regional Transportation Plan and Sustainable Communities Strategy

The San Luis Obispo Council of Governments (SLOCOGs) Regional Transportation Plan (RTP) and Sustainable Communities Strategy (SCS) provides a comprehensive assessment of various forms of transportation available within San Luis Obispo County (County), as well as, projected travel and goods movement needs through future years. The most current version of the RTP is the 2023 RTP/SCS. The RTP/SCS provides a collective vision for the region's future, while balancing transportation and housing needs with social, economic, and environmental goals. The RTP/SCS helps guide future planning efforts and policy decisions that affect transportation, including its relationship with housing and land use that will reduce greenhouse gas emissions in the County and local jurisdictions. The 2023 RTP/SCS also provides recommendations for the County and local jurisdictions in making decisions about transportation, housing, and land-use. The RTP/SCS is updated every four years (SLOCOG 2026).

ENVIRONMENTAL IMPACTS

Significance Threshold Criteria

According to Appendix G of the California Environmental Quality Act (CEQA) Guidelines, a project would normally have a significant effect on the environment if the project would:

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

The CEQA Guidelines, Appendix F, require environmental analyses to include a discussion of potential energy impacts associated with a proposed project. Where necessary, CEQA requires that mitigation measures be incorporated to reduce the inefficient, wasteful, or unnecessary consumption of energy. The State CEQA Guidelines, however, do not establish criteria that define inefficient, wasteful, or unnecessary consumption. Compliance with the State's building standards for energy efficiency would result in decreased energy consumption for proposed buildings. However, compliance with building codes may not adequately address all potential energy impacts associated with a project. As a result, this analysis includes an evaluation of electricity and natural gas usage requirements associated with future development, as well as fuel usage associated with the operation of on-road and off-road vehicles. The degree to which the proposed project would comply with existing energy standards, as well as applicable regulatory requirements and policies related to energy conservation, was also taken into consideration for the evaluation of project-related energy impacts.

Methodology

Energy consumption is categorized in terms of "operational" and "construction" energy. Operational energy accounts for energy consumed by mobile sources and land use scenarios envisioned under the 2045 GPU, such as fuel consumed by vehicles, natural gas consumed for heating and/or power, and electricity consumed for power. Construction energy is the energy needed for construction and maintenance of the transportation system and land use scenario facilitated by the 2045 GPU. The analysis of operational energy involves the quantification of anticipated net increases of transportation fuel, natural gas, and electricity consumption under the 2045 GPU and a qualitative discussion of the efficiency, necessity, and wastefulness of the energy consumption. The analysis of construction energy involves a qualitative discussion of construction and maintenance energy requirements anticipated under buildout of the 2045 GPU.

Construction-Related Energy Consumption

Development facilitated by the 2045 GPU would involve the use of energy during construction and operation. Energy use during construction would be primarily in the form of fuel consumption to operate heavy equipment, light-duty vehicles, machinery, and generators for lighting. Much of this information for specific future development projects is unknown at this time. As a result, construction-related impacts were qualitatively discussed.

Operational Energy Consumption

The long-term operation of the proposed 2045 GPU would require electricity usage for lighting, space and water heating, appliances, water conveyance, and landscaping maintenance equipment. Indirect energy use would include wastewater treatment and solid waste removal.

Projections for the 2045 GPU transportation fuel were calculated based on the VMT Impact Assessment conducted by Central Coast Transportation Consultants (CCTC 2025) and ARB's Emission Factors 2025 (EMFAC2025) database. Fuel usage rates for gasoline and diesel fuels were quantified based on County-wide fleet average VMT and fuel usage rates derived from EMFAC2025. For comparison purposes, fuel usage rates were converted to million metric British thermal units (MMBTU) per service population. Service population was calculated based on the total population and employee estimates for the County and net increases attributable to the 2045 GPU. Net increases of natural gas and electricity consumption under buildout of the land use scenario envisioned by the 2045 GPU were calculated based on consumption rates derived from the California Emissions Estimator Model (CalEEMod) Version 2022.1.1.37. Existing and historical fuel consumption rates for the City of Atascadero are not available. For comparison purposes, electricity and natural gas usage rates for the County and net increases attributable to the 2045 GPU, were calculated based on usage per service population, which is defined as the total population plus employees. Modeling assumptions are included in Appendix A.

Relevant Proposed 2045 GPU Goals and Policies

The 2045 GPU includes numerous goals and policies related to energy use. Some of the more relevant goals and policies include the following:

Goal PSI-6: Increased development and use of clean, renewable energy systems.

> *Policy PSI-6.1: Onsite Renewable Energy.* Facilitate the installation of onsite renewable energy systems for residences and places of business.

Policy PSI-6.2: Energy Efficient Planning and Building Design. Encourage energy-efficient site planning and building design/construction.

Goal MO-1: A safe, multimodal, interconnected, and efficient circulation system that serves all community members

Policy MO-1.2: Multimodal Options. Increase pedestrian and bicycle connections and safety between residential areas and commercial areas along major corridors, parks and recreation opportunities, and neighboring communities.

Policy MO-1.4: Congestion Management and Trip Reduction. Encourage mixed-use and jobs focused infill development that is served by multi-modal facilities to support reductions in regional and local vehicle miles traveled (VMT).

Goal MO-4: Safe, functional, and appealing bicycle, pedestrian, and equestrian (in rural areas) facilities that allow convenient multi-modal mobility

Policy MO-4.1: Coordination and Planning. Provide "backbone" pedestrian, bicycle, and equestrian systems that link residential, commercial, recreational, and regional areas.

Policy MO-4.2: Pedestrian Mobility. Ensure pedestrian safety, enhance pedestrian comfort, and promote walking as an alternative to vehicle travel, with priority in retail districts and multi-family neighborhoods.

Policy MO-4.3: Bicycle Mobility. Promote bicycle mobility and increase bicyclist safety with new/upgraded facilities and amenities.

Policy MO-4.4: Rural Trails. Provide for walkways, bikeways, and horse trails without curbs and sidewalks in rural areas.

Policy MO-4.5: School and Park Connections. Provide a comprehensive system of routes to schools and parks.

Goal MO-5: Reliable alternative travel modes that reduce traffic congestion and improve air quality.

Policy MO-5.1: Single-Occupancy Vehicle Alternatives. Promote alternatives to single-occupancy vehicle travel, particularly for commute trips.

Policy MO-5.2: Public Transit. Support the evolution of public transit to meet the changing needs for local and regional access, including fixed route and demand responsive service.

Policy MO-5.3: County TDM Requirements. Seek alternatives that bring Atascadero closer to compliance with Transportation Demand Management program requirements of the San Luis Obispo County Clean Air Plan to reduce peak period trip generation.

Goal MO-6: Anticipating and addressing emerging mobility technology proactively to allow new systems and industries to operate in Atascadero on the City's terms.

Policy MO-6.1: Changing Mobile Technology. Encourage the use of mobile or other electronic devices with similar on-demand hailing functions, particularly for seniors, persons with disabilities, and other mobility challenged people.

Policy MO-6.2: Autonomous Vehicles. Update, when warranted, transportation systems and policies as autonomous and automated vehicles and their attendant facilities are developed locally and regionally.

Impacts and Mitigation Measures

Impact E-1: Would the project result in the wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?

Implementation of the proposed project would increase electricity, diesel, gasoline, and natural gas consumption associated with construction activities, as well as long-term operational activities.

Construction-Related Energy Consumption

Energy consumption associated with construction of the proposed 2045 GPU would including fuel use associated with the on-site operation of off-road equipment and vehicles traveling to and from the construction site. The CBC includes specific requirements related to recycling, construction materials, and energy efficiency standards that would apply to construction of future development envisioned by the 2045 GPU and would minimize wasteful, inefficient, and unnecessary energy consumption. Construction and operation of projects facilitated by the 2045 GPU would be required to comply with relevant provisions of CBC and Title 24 of the California Energy Code, which would avoid wasteful, inefficient, and unnecessary energy consumption. As a result, the construction of proposed facilities and improvements would not result in an inefficient, wasteful, or unnecessary consumption of energy.

Operational Mobile-Source Energy Consumption

Operational mobile-source energy consumption would be primarily associated with fuel use associated with vehicle trips attributable to the proposed land uses. Table 1 summarizes annual fuel use for the County; as well as, net increases in fuel use associated with the proposed 2045 GPU. As noted in Table 1, the County consumed an estimated 14,943,147 MMBTU of gasoline fuel and 10,420,451 MMBTU of diesel fuel in 2024. Net increases in fuel use associated with the 2045 GPU would total approximately 147,833 MMBTU of gasoline and 103,090 MMBTU of diesel fuel. On a service population (SP) basis, the County's fuel usage equates to 36.6 MMBTU/SP for gasoline and 25.5 MMBTU/SP for diesel. By comparison, fuel usage associated with the 2045 GPU would be 15.1 MMBTU/SP for gasoline and 10.5 MMBTU/SP for diesel fuel. While the overall fuel consumption would increase with the adoption of the proposed 2045 GPU the efficiency of the fuel usage would improve when compared to the County average. The development of increasingly efficient automobile engines would further increase energy efficiency and energy conservation.

Table 1. Operational Fuel Consumption

	Gasoline (MMBTU/Year)	Diesel (MMBTU/Year)
San Luis Obispo County (Year 2024)	14,943,147	10,420,451
2045 General Plan Update	147,833	103,090
	Annual Usage Rates/Service Population (SP)	
San Luis Obispo County (Year 2024)	36.6	25.5
2045 General Plan Update	15.1	10.5

Based on County of San Luis Obispo year 2024 population of 281,843 individuals and 126,927 employees (U.S. Census 2024).
Based on City of Atascadero 2045 GPU net increase in population of 6,596 individuals and 3,185 employees.
Totals may not sum due to rounding.
MMBTU= million metric British thermal units
SP=Service Population (population+employees)
Refer to Appendix A for modeling assumptions and results.

Operational Building-Use Energy Consumption

The proposed 2045 GPU would result in increased electricity and natural gas consumption associated with the long-term operation of the proposed land uses. It is important to note that buildings included in the 2045 GPU would be required to comply with Title 24 standards for energy efficiency, which would include increased building insulation and energy-efficiency requirements, including the use of energy-efficient lighting, energy-efficient appliances, and use of low-flow water fixtures.

Table 2 summarizes annual electricity and natural gas use for the County; as well as, net increases in energy use attributable to the proposed 2045 GPU. As noted in Table 2, the County consumed an estimated 1,681,400,000 kWh/year of electricity and 84,200,000 therms/year of natural gas in 2024. Net increases in energy use associated with the 2045 GPU would total approximately 35,374,663 kWh/year of electricity and 1,022,265 therms/year of natural gas. On a service population (SP) basis, the County's energy usage equates to 4,113 kWh/SP for electricity use and 206 therms/SP for natural gas use. By comparison, energy use associated with the 2045 GPU would be 3,617 kWh/SP for electricity use and 105 therms/SP for natural gas. While the overall energy consumption would increase with the adoption of the proposed 2045 GPU the efficiency of energy usage on a service-population basis would improve when compared to the County average. However, at this time, most projects incorporated in the 2045 GPU do not have sufficient detail to allow project-level analysis and thus it would be speculative to analyze project-level impacts on energy consumption. Given that specific projects have the potential to be wasteful, inefficient, or unnecessarily consume energy resources, this impact would be considered **potentially significant**.

Table 2. Operational Electricity & Natural Gas Consumption

	Electricity (kWh/Year)	Natural Gas (Therms/Year)
San Luis Obispo County (Year 2024)	1,681,400,000	84,200,000
2045 General Plan Update	35,374,663	1,022,265
	Annual Usage Rates/Service Population (SP)	
San Luis Obispo County (Year 2024)	4,113 kWh/SP	206 therms/SP
2045 General Plan Update	3,617 kWh/SP	105 therms/SP

Based on County of San Luis Obispo year 2024 population of 281,843 individuals and 126,927 employees (U.S. Census 2024).
Based on City of Atascadero 2045 GPU net increase in population of 6,596 individuals and 3,185 employees.
MMBTU= million metric British thermal units
SP=Service Population (population+employees)
Refer to Appendix A for modeling assumptions and results.

Proposed 2045 GPU Policies that Provide Mitigation

As noted above, the 2045 GPU includes various goals and policies that would reduce energy consumption attributable to new land uses; as well as, goals and policies that would promote the use of alternative means of transportation and reductions in VMT. However, no policies have been proposed that specifically require existing or future land uses to evaluate and mitigate potential energy impacts.

Proposed Mitigation Measures

MM E-1: The following measures shall be implemented to further reduce energy use associated with existing and future land uses:

a. Incorporate renewable energy efficiency into public facilities capital improvements.
b. Encourage public lighting with energy-efficient lighting that meets or exceeds the State's building standards at the time of development.
c. Implement large-scale energy storage in commercial and industrial buildings to control peak loads that exceed the State's building standards at the time of development.
d. Encourage future development to incorporate on-site renewable energy generation (e.g., solar photovoltaic systems), that exceed the State's building standards at the time of development.
e. Encourage future residential and commercial development to use all-electric appliances and end uses as opposed to natural gas-fueled appliances and end uses.

Significance After Mitigation

Mitigation measures have been included to reduce overall operational energy consumption, including those associated with long-term operational building energy use. Implementation of Mitigation Measures E-1a through E-1e would help to ensure consistency with applicable regulatory requirements related to energy use and would also help to promote the use of energy from renewable sources (e.g., solar). Mitigation Measure E-1e would encourage future residential and commercial development to use all-electric appliances and end uses. Using electric instead of natural gas-powered appliances and end uses replaces a more emissions-intensive fossil fuel source of energy with a less emissions-intensive and largely renewable source of energy. With mitigation, this impact would be considered **less than significant.**

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

Proposed land uses associated with the 2045 GPU would be required to be in full compliance with the California Building Code, including applicable green building standards and building energy efficiency standards. In addition to complying with federal and state regulations, the 2045 GPU itself provides policies that are designed specifically to reduce energy consumption or to reduce other types of pollutants that have the co-benefit of reducing energy consumption. Furthermore, implementation of Mitigation Measures E-1a through E-1e would help to ensure consistency with applicable regulatory requirements related to energy use and would also help to promote the use of energy from renewable sources. For these reasons, implementation of the proposed 2045 GPU would not be anticipated to conflict with or obstruct state or local plans for renewable energy or energy efficiency. This impact would be considered **less than significant**.

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APPENDIX A

Energy Use Modeling

Source: EMFAC2025 (v2.0.0) Emissions Inventory
Region Type: County
Region: San Luis Obispo
Calendar Year: 2045
Season: Annual
Vehicle Classification: EMFAC202Y Categories
Units: miles/year, 1000 gallons/year for Gasoline and Diesel Fuel Consumption

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Total VMT	CVMT	Fuel Consumption
San Luis Obis	2045	LDA	Aggregate	Aggregate	Diesel	247573.274	247573.274	6.36570967
San Luis Obis	2045	LDT1	Aggregate	Aggregate	Diesel	13.523242	13.523242	0.00075253
San Luis Obis	2045	LDT2	Aggregate	Aggregate	Diesel	357370.102	357370.102	9.37290826
San Luis Obis	2045	LHD1 Other	Aggregate	Aggregate	Diesel	15461660.7	15461660.7	963.556057
San Luis Obis	2045	LHD1 Public	Aggregate	Aggregate	Diesel	139952.068	139952.068	8.72168035
San Luis Obis	2045	LHD2 Other	Aggregate	Aggregate	Diesel	12590455	12590455	850.984961
San Luis Obis	2045	LHD2 Public	Aggregate	Aggregate	Diesel	257332.329	257332.329	17.3930125
San Luis Obis	2045	MDV	Aggregate	Aggregate	Diesel	7478000.89	7478000.89	294.282916
San Luis Obis	2045	MH	Aggregate	Aggregate	Diesel	928279.353	928279.353	99.4994211
San Luis Obis	2045	Motor Coach	Aggregate	Aggregate	Diesel	490226.795	490226.795	77.415244
San Luis Obis	2045	OBUS	Aggregate	Aggregate	Diesel	633122.031	633122.031	76.0467577
San Luis Obis	2045	PTO	Aggregate	Aggregate	Diesel	679865.46	679865.46	122.002486
San Luis Obis	2045	SBUS	Aggregate	Aggregate	Diesel	383889.776	383889.776	45.5202549
San Luis Obis	2045	T6 CAIRP Clas	Aggregate	Aggregate	Diesel	1234.6026	1234.6026	0.12516682
San Luis Obis	2045	T6 CAIRP Clas	Aggregate	Aggregate	Diesel	2230.89757	2230.89757	0.22616947
San Luis Obis	2045	T6 CAIRP Clas	Aggregate	Aggregate	Diesel	6602.52013	6602.52013	0.65888163
San Luis Obis	2045	T6 CAIRP Clas	Aggregate	Aggregate	Diesel	54544.1005	54544.1005	4.75534475
San Luis Obis	2045	T6 Instate Del	Aggregate	Aggregate	Diesel	224641.362	224641.362	25.1837995
San Luis Obis	2045	T6 Instate Del	Aggregate	Aggregate	Diesel	181378.805	181378.805	20.1670013
San Luis Obis	2045	T6 Instate Del	Aggregate	Aggregate	Diesel	678492.087	678492.087	74.7446716
San Luis Obis	2045	T6 Instate Del	Aggregate	Aggregate	Diesel	192862.951	192862.951	20.5854797
San Luis Obis	2045	T6 Instate Oth	Aggregate	Aggregate	Diesel	943650.296	943650.296	103.600956
San Luis Obis	2045	T6 Instate Oth	Aggregate	Aggregate	Diesel	4374212.47	4374212.47	481.764074
San Luis Obis	2045	T6 Instate Oth	Aggregate	Aggregate	Diesel	2053817.41	2053817.41	222.09511
San Luis Obis	2045	T6 Instate Oth	Aggregate	Aggregate	Diesel	1924646.05	1924646.05	203.259693
San Luis Obis	2045	T6 Instate Trac	Aggregate	Aggregate	Diesel	35748.7226	35748.7226	3.57843379
San Luis Obis	2045	T6 Instate Trac	Aggregate	Aggregate	Diesel	350830.646	350830.646	31.03654
San Luis Obis	2045	T6 OOS Class	Aggregate	Aggregate	Diesel	8105.29313	8105.29313	0.76812944
San Luis Obis	2045	T6 OOS Class	Aggregate	Aggregate	Diesel	14676.1197	14676.1197	1.39043459
San Luis Obis	2045	T6 OOS Class	Aggregate	Aggregate	Diesel	33256.0671	33256.0671	3.15219493
San Luis Obis	2045	T6 OOS Class	Aggregate	Aggregate	Diesel	192335.553	192335.553	16.2892888
San Luis Obis	2045	T6 Public Clas	Aggregate	Aggregate	Diesel	1871.76074	1871.76074	0.24212641
San Luis Obis	2045	T6 Public Clas	Aggregate	Aggregate	Diesel	16271.6422	16271.6422	2.00550758
San Luis Obis	2045	T6 Public Clas	Aggregate	Aggregate	Diesel	3602.41283	3602.41283	0.4508513
San Luis Obis	2045	T6 Public Clas	Aggregate	Aggregate	Diesel	12858.3873	12858.3873	1.59565737
San Luis Obis	2045	T6 Utility Clas	Aggregate	Aggregate	Diesel	25191.1644	25191.1644	2.55459779
San Luis Obis	2045	T6 Utility Clas	Aggregate	Aggregate	Diesel	5385.3512	5385.3512	0.55607771
San Luis Obis	2045	T6 Utility Clas	Aggregate	Aggregate	Diesel	7592.22191	7592.22191	0.76270881
San Luis Obis	2045	T7 CAIRP Clas	Aggregate	Aggregate	Diesel	6336950.21	6336950.21	862.907879
San Luis Obis	2045	T7 NNOOS Cl	Aggregate	Aggregate	Diesel	27467428.4	27467428.4	3589.00068
San Luis Obis	2045	T7 NOOS Clas	Aggregate	Aggregate	Diesel	9723938.07	9723938.07	1278.30251
San Luis Obis	2045	T7 Other Port	Aggregate	Aggregate	Diesel	522962.55	522962.55	69.7398545
San Luis Obis	2045	T7 Public Clas	Aggregate	Aggregate	Diesel	45393.2407	45393.2407	7.99470242
San Luis Obis	2045	T7 Single Con	Aggregate	Aggregate	Diesel	1145524.21	1145524.21	195.455737
San Luis Obis	2045	T7 Single Dum	Aggregate	Aggregate	Diesel	714461.805	714461.805	107.761765
San Luis Obis	2045	T7 Single Othe	Aggregate	Aggregate	Diesel	1510967.52	1510967.52	225.510761
San Luis Obis	2045	T7 SWCV Clas	Aggregate	Aggregate	Diesel	292698.95	292698.95	91.7863316
San Luis Obis	2045	T7 Tractor Cla	Aggregate	Aggregate	Diesel	3114298.05	3114298.05	406.041887
San Luis Obis	2045	T7 Utility Clas	Aggregate	Aggregate	Diesel	23130.6477	23130.6477	3.39621006
						101891534	101891534	10630.6094
					CONSUMPTIONS RATE:		0.10433261	G/MI

San Luis Obis	2045	LDA	Aggregate	Aggregate	Gasoline	104542762	104542762	3686.73095
San Luis Obis	2045	LDT1	Aggregate	Aggregate	Gasoline	54626810.2	54626810.2	2443.87021
San Luis Obis	2045	LDT2	Aggregate	Aggregate	Gasoline	141582186	141582186	5639.04425
San Luis Obis	2045	LHD1 Other	Aggregate	Aggregate	Gasoline	14955862.6	14955862.6	1464.29178
San Luis Obis	2045	LHD1 Public	Aggregate	Aggregate	Gasoline	1283104.69	1283104.69	125.625629
San Luis Obis	2045	LHD2 Other	Aggregate	Aggregate	Gasoline	2942456.06	2942456.06	306.264356
San Luis Obis	2045	LHD2 Public	Aggregate	Aggregate	Gasoline	539350.399	539350.399	56.1380695

San Luis Obis	2045	MCY	Aggregate	Aggregate	Gasoline	11386641.5	11386641.5	281.768804
San Luis Obis	2045	MDV	Aggregate	Aggregate	Gasoline	118419756	118419756	5825.40141
San Luis Obis	2045	MH	Aggregate	Aggregate	Gasoline	1894196.58	1894196.58	428.881174
San Luis Obis	2045	OBUS	Aggregate	Aggregate	Gasoline	195653.55	195653.55	39.9132221
San Luis Obis	2045	SBUS	Aggregate	Aggregate	Gasoline	386147.243	386147.243	36.248538
San Luis Obis	2045	T6TS	Aggregate	Aggregate	Gasoline	2136593.82	2136593.82	398.358483
San Luis Obis	2045	T7IS	Aggregate	Aggregate	Gasoline	8490.30632	8490.30632	2.53634567
						454900011	454900011	20735.0732
				CONSUMPTIONS RATE:			0.04558161	G/MI

TOTAL ALL:	556791545	556791545	31365.6826
PERCENT GAS:	81.70%	81.70%	66.11%
PERCENT DIESEL:	22.40%	22.40%	51.27%

ATASCADERO GPU - NET INCREASE IN VMT 87028 DAILY

ANNUAL VMT - TOTAL 31765220 ANNUAL

	VMT	CONSUMPTIC	TOTAL CONSU	MMBTU	SP	MMBTU/SP	VMT/SP
ANNUAL -GAS	25952260	0.04558161	1182945.7	147832.724	9781	15.114275	2653.33401
ANNUAL - DIESEL	7114985.51	0.10433261	742324.988	103089.64	9781	10.5397853	727.429252

BASELINE DAILY VMT 8796917

BASELINE ANNUAL VMT 3210874705

	VMT	CONSUMPTIC	TOTAL CONSU	MMBTU	SP	MMBTU/SP	VMT/SP
ANNUAL -GAS	2623292240	0.04558161	119573874	14943147	408,770	36.5563692	6417.52633
ANNUAL - DIESEL	719193099	0.10433261	75035291	10420451	408,770	25.4922108	1759.40773

COUNTY SERVICE POPULATION (SP)	
POP (JUL 2024 US CENSUS)	281843
EMPLOYMENT	126927
TOTAL	408770

With Natural-gas

5.11. Operational Energy Consumption

5.11.1. Unmitigated

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

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Single Family Housing	1,242,987	203.983	0.0330	0.0040	8,179,524
Apartments Mid Rise	7,977,704	203.983	0.0330	0.0040	67,216,897
Strip Mall	3,985,087	203.983	0.0330	0.0040	2,875,665
General Office Building	12,411,497	203.983	0.0330	0.0040	13,432,288
Industrial Park	9,757,388	203.983	0.0330	0.0040	10,559,891

MODELING ASSUMPTIONS & CALCULATIONS

LAND USE - NET CHANGE

No. of Units		Sq. Ft.			
du_sf	**du_mf**	**bldg_retail**	**bldg_office**	**bldg_public**	**bldg_industrial**
205	2,688	481,454	594,666	0	467,501

Existing Year:	2024
Future Year:	2045
Employment:	3,185
Population:	6,596
TOTAL SP	9,781

ELECTRICITY AND NAT GAS USE - NET INCREASE

Land Use	Electricity (kWh/y	Natural Gas (kBTU/yr)		
Single Family Housing	1,242,987	8,179,524		
Apartments Mid Rise	7,977,704	67,216,897		
Strip Mall	3,985,087	2,875,665		
General Office Building	12,411,497	13,432,288		
Industrial	9,757,388	10,559,891		
Total	35,374,663	102,264,265	1022642.65	therms
Derived from CalEEMod modeling.				
net inc/sp	5363.364875		155.0489871	

EXISTING COUNTY USAGE RATES

			2024 SP		
ELECTRICITY	1681.4	GWh	408770	0.004113316 Gwh/SP	4113.3156 kWh/sp/yr
NATURAL GAS	84200000	therms	408770	205.9838051 Therms/SP	

	ELECTRICITY	NAT GAS			ELECTRICITY	NAT GAS
General Plan Update	35,374,663	1,022,265	San Luis Obispo County (Year 2024)		1,681,400,000	84,200,000
General Plan Update SP	9,781	9,781		SP	408770	408770
General Plan Update TOTAL/SP	3616.696836	104.5161219		TOTAL/SP	4113.32	205.98

COUNTY SP	
POP (JUL 2024 US CENSUS)	281843
EMPLOYMENT	126927
TOTAL	408770

APPENDIX E

2045 General Plan Existing Conditions Report | Chapter 5: Biological Resources

2045 General Plan Existing Conditions Report

Chapter 5: Biological Resources

Biological Resources Findings

Oak Woodlands

1. Atascadero contains a diversity of oak woodlands, including Blue Oak Woodlands, Coast Live Oak Woodlands, Valley Oak Woodlands, and Blue Oak-Foothill Pine. Oak woodlands provide important wildlife habitat and are an integral part of the aesthetic appeal for living in the city. Approximately 10,822 acres of oak woodlands have been mapped within the urban reserve area by the California Department of Forestry.

Waterways

1. Atascadero contains approximately 27 miles of creeks and rivers, including Atascadero Creek, Boulder Creek, Graves Creek, Paloma Creek, and the Salinas River. These waterways provide important wildlife corridors connecting the Salinas River to the Santa Lucia Mountains and are designated critical habitat areas for South-Central California Coast Steelhead Trout. They also provide recreational opportunities for many residents.

2. The creeks have been highly impacted by problems with trash, illegal dumping, off-road vehicle use, and urban pollution that has significantly degraded the quality of the habitat. Protecting and enhancing these areas can better support the local ecosystem, help improve water flow (and reduce localized flooding risks), and increase the quality of life for residents. In addition, the Salinas River has been identified as a key natural resource that should be protected and bolstered as a regional attraction for tourism, recreation, and education.

3. All waterways in the study area contain identified barriers to fish passage as mapped by California's Fish Passage Assessment Database (California Department of Fish and Wildlife [CDFW] 2022c); however, Atascadero Creek contains the highest number with 10 barriers. These barriers range from only partial barriers to total barriers.

Special-Status Species

1. Based on an analysis of California Natural Diversity Database (CNDDB) occurrence records and suitable vegetation and habitats within the study area, it was determined that populations of eight special-status plant species occur in the study area. There are suitable habitat conditions for four additional special-status plant species and marginal conditions present to potentially support habitat for 13 additional special-status plant species.

2. There are CNDDB occurrence records for nine special-status animal species in the study area. These are the obscure bumble bee (*Bombus caliginosus*), crotch bumble bee (*Bombus crotchii*), Atascadero June beetle (*Polyphylla nubile*), coast range newt (*Taricha torosa*), California red-legged frog, northern California legless lizard (*Anniella pulchra*), western pond turtle (*Emys marmorata*), purple martin (*Progne subis*), and golden eagle (*Aquila chrysaetos*).

3. There are suitable habitat conditions present, and the study area is within the range of 16 additional special-status animal species. Four additional special-status animal

species have historically occurred in the study area, but their populations have been extirpated.

Critical Habitat

1. Graves Creek, Atascadero Creek, and the Salinas River are designated as Critical Habitat for South-Central California Coast steelhead DPS. These creeks fall within the Paso Robles Hydrologic Subarea 330981, which is part of the larger Salinas Hydrologic Unit 3309 (National Oceanic and Atmospheric Administration National Marine Fisheries Service [NOAA Fisheries] 2005).
2. Anthropogenic threats to steelhead in the Salinas River watershed include: 1) barriers to upstream and downstream migration (roads, dams, groundwater extraction, sand and gravel mining); 2) agricultural conversion of floodplain habitats; 3) recreational facilities and activities; and 4) water management activities, including dam operations, diversions, and groundwater extractions (NOAA Fisheries 2013).
3. The study area contains a small portion, approximately 3,000 acres, of critical habitat for California red-legged frogs, Critical Habitat Unit SLO-3. Critical habitat areas include the upper watershed areas of Morro and Atascadero Creeks, a small portion of the Santa Margarita Creek watershed that falls in the study area, and a small corner of the Paloma Creek watershed but does not include Paloma Creek itself.
4. The key threats to the physical and biological features essential to the conservation of California red-legged frog in Critical Habitat Unit SLO-3 include predation by nonnative species, water diversion, overgrazing, and urbanization (U.S. Fish and Wildlife Service [USFWS] 2010).

Minerals

1. The California Geological Survey maps Mineral Resource Zones (MRZ) to identify the potential for the production of geologic resources such as metals, minerals, and construction aggregate. There are several MRZ-1 zones (areas of no mineral resource significance) located along the southwestern city limit and within the central and eastern portions of the city. There is an MRZ-2 zone (areas that contain identified mineral resources; Portland cement concrete-grade) surrounding the Salinas River, along the eastern city limit.
2. There are no active mines located in the city.

Groundwater Basin

1. The city is in the Atascadero Area Groundwater Subbasin. The projected future groundwater budget period (2020–2042) shows an average annual increase in groundwater in storage of 800 acre-feet per year (AFY).

Wildfire

1. The city is at an increased risk of wildfire occurrence, with the majority of land within the city of Atascadero being considered a Very High Fire Hazard Severity Zone (FHSZ) in a local responsibility area (LRA).

Major Pollutants

1. Atascadero Creek is listed on the Central Coast Regional Water Quality Control Board (RWQCB) Section 303(d) List of Impaired Waters for dissolved oxygen and pathogens (e.g., fecal coliform, *E. coli*) and the Salinas River is listed on the Section 303(d) List of Impaired Waters for turbidity (RWQCB 2018).
2. Based on a query of the California Department of Toxic Substances Control (DTSC) EnviroStor and State Water Resources Control Board (SWRCB) GeoTracker databases, there are no open hazardous materials sites located within the city. There are 34 closed Leaking Underground Storage Tank (LUST) cleanup sites, two closed school investigation sites, and one closed school cleanup site within the city (DTSC 2022; SWRCB 2022).

5.1 Introduction

This chapter examines the existing biological resources present within Atascadero. The purpose of this analysis is to provide planning and environmental context for the General Plan Update project. The information presented in this chapter will be used by the City to develop Open Space Element policies and objectives and define programs that implement those policies.

The intent of this chapter is to identify and evaluate existing biological resources within the study area, identify which ones are protected by Federal or State laws, and to provide guidance to protect and avoid those resources that legally require protection while developing compatible land use policies, avoiding incompatibility problems in the future. The chapter addresses existing physical and biological conditions and focuses on sensitive resources. This information will serve as the basis for developing guidelines for identifying compatible land uses, identifying the proper distribution of land uses, and establishing proper development standards. A discussion of Federal, State, and local regulations protecting biological resources is also included.

This chapter is organized into the following sections:

Section 5.1: Introduction
Section 5.2: Regulatory Setting
Section 5.3: Methods
Section 5.4: Existing Physical and Biological Conditions
Section 5.5: Special-Status Species
Section 5.6: Critical Habitat
Section 5.7: Oak Woodland Resources
Section 5.8: Minerals
Section 5.9: Groundwater Basin(s)
Section 5.10: Wildfires
Section 5.11: Major Pollutants
Section 5.12: Sources
Section 5.13: Acronyms and Key Terms

5.2 Regulatory Setting

Federal

Federal Endangered Species Act

The Federal Endangered Species Act (FESA) of 1973 is administered by the U.S. Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration National Marine Fisheries Service (NOAA Fisheries). Overall, NOAA Fisheries is responsible for the protection of FESA-listed marine species and anadromous fish species, while other listed species fall under USFWS jurisdiction.

Federal Clean Water Act

The Federal Clean Water Act (CWA) of 1972 provides guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters. CWA requirements pertaining to the proposed project are described below.

Section 401 requires that an applicant for a Federal license or permit that allows activities resulting in a discharge to waters of the United States (WOTUS), must obtain State certification that the discharge complies with other provisions of CWA. The nine Regional Water Quality Control Boards (RWQCBs) administer the certification program in California.

Section 404 establishes U.S. Army Corps of Engineers (USACE) jurisdiction over fill materials in essentially all waterbodies, including wetlands. All Federal agencies are to avoid impacts on wetlands whenever there is a practicable alternative. Section 404 established a permit program administered by USACE regulating the discharge of dredged or fill material into WOTUS (including wetlands).

Section 404 guidelines allow the discharge of dredged or fill material into the aquatic system only if there is no practicable alternative that would have less adverse impacts.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918 with Canada, Mexico, and Japan makes it unlawful to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter, any migratory bird, or the parts, nests, or eggs of such a bird except under the terms of a valid Federal permit. The Federal MBTA applies to the removal of nests (such as swallow nests on bridges) occupied by migratory birds during the breeding season.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act of 1940 (as amended) provides for the protection of bald and golden eagles by prohibiting the take, possession, sale, purchase, barter, offer to sell, purchase or barter, transport, export or import, of any bald or golden eagle, alive or dead, including any part, nest, or egg, unless allowed by permit (16 United States Code [USC] 668(a); 50 Code of Federal Regulations [CFR] 22). The USFWS may authorize take of bald and golden eagles for activities where the take is associated with, but not the purpose of, the activity and cannot practicably be avoided (50 CFR 22.26).

State

California Environmental Quality Act

Guidance for determining California Environmental Quality Act (CEQA) significance thresholds is based on Appendix G of the State CEQA Guidelines. Using these guidelines, activities requiring CEQA review within the study area would have a significant impact on biological resources if they would:

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 USFWS or California Department of Fish and Wildlife (CDFW);

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 USFWS or CDFW;

Have a substantial adverse effect on Federally protected wetlands as defined by CWA Section 404;

Interfere substantially with the movement of any resident or migratory species of wildlife, wildlife corridors, or wildlife nursery sites;

Conflict with any local policies or ordinances protecting biological resources; or

Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved State, regional, or local habitat conservation plan.

California Endangered Species Act

The California Endangered Species Act (CESA) of 1970 generally parallels the main provisions of the FESA but also extends the take prohibitions to species proposed for listing. Sections 2080 and 2081 of the California Fish and Game Code (CFGC) prohibit the take (defined as hunting, pursuing, catching, capturing, or killing) of endangered, threatened, or candidate species unless otherwise authorized by permit. The CDFW regulates activities that may result in the "take" of such species. The CESA has a much less inclusive definition of "take" (limited to direct take such as hunting, shooting, capturing, etc.) that does not include the broad "harm" and "harassment" definitions in Federal law.

Take of State-listed species would require a Section 2081 Incidental Take Permit from the CDFW. This process requires the submittal of a sensitive species study and permit application package, and is similar to the FESA Section 10 process, except that the CDFW is the regulatory and decision-making agency. As no State-listed species are anticipated to be subjected to take for this proposed project, a Section 2081 Incidental Take Permit from the CDFW will not be required.

Native Plant Protection Act

The legal protection afforded to listed plants under the Native Plant Protection Act (NPPA) of 1977 (CFGC Sections 1 900–1913) includes provisions that prohibit the taking and possession of plants from the wild and a salvage requirement for landowners and project proponents that may encounter rare plants during implementing a project that may impact those species. If a

landowner has been informed of a listed plant species on their property, the CDFW must be notified at least 10 days in advance of any land use change that might affect the species or its habitat, thereby affording CDFW an opportunity to conduct a salvage operation. Candidate species are also protected from taking by the NPPA.

The CDFW has demonstrated a general policy of regarding many of the plants on the California Native Plant Society (CNPS) California Rare Plant Ranks (CRPRs) 1 and 2 as meeting the definitions of Chapter 10, Section 1901 of the NPPA. As such, those plants also qualify for protection under CEQA.

California Fish and Game Code Sections 3503, 3511, 4700, 5050, and 5515

Section 3503 of the CFGC includes provisions to protect the nests and eggs of birds. Sections 3511, 4700, 5050, and 5515 include provisions to protect Fully Protected species, such as: (1) prohibiting take or possession "at any time" of the species listed in the statute, with few exceptions; (2) stating that "no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to 'take' the species;" and (3) stating that no previously issued permits or licenses for take of the species "shall have any force or effect" for authorizing take or possession. The CDFW is unable to authorize incidental take of "fully protected" species when activities are proposed in areas inhabited by those species; therefore, project-related activities must avoid take of Fully Protected species.

California Fish and Game Code Section 1602

Section 1602 of the CFGC requires any person, State, or local government agency or public utility proposing a project that may affect a river, stream, or lake to notify the CDFW before beginning the project. If activities will result in the diversion or obstruction of the natural flow of a stream; substantially alter its bed, channel, or bank; impact riparian vegetation; or adversely affect existing fish and wildlife resources, a Streambed Alteration Agreement (SAA) is required. An SAA lists the CDFW conditions of approval relative to the proposed project and serves as an agreement between an applicant and the CDFW for a term of not more than 5 years (for standard agreements) for the performance of activities subject to this section. Implementation of the proposed project may require a Section 1602 SAA for any impacts within the banks of drainages and extending to the outer edge of riparian vegetation (whichever is greater) if these areas are determined to be jurisdictional by CDFW.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) serves as the primary water quality law in California and addresses two primary functions: water quality control planning and waste discharge regulation. The various RWQCBs are charged with protecting all waters of California, defined as "any surface water or groundwater, including saline waters, within the boundaries of the State." This encompasses all waters of the State (WOTS), including those not under Federal jurisdiction. The Porter-Cologne Act defines WOTS very broadly, with no physical descriptors, and no interstate commerce limitation. In regulating discharges of dredged or fill material, the RWQCB jurisdiction is broader than Federal jurisdiction. The discharge of dredged or fill material may constitute a discharge of waste that could affect the quality of WOTS.

In 2019, the State Water Resources Control Board (SWRCB) adopted a *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State*, for inclusion in the forthcoming *Water Quality Control Plan for Inland Surface Waters and*

Enclosed Bays and Estuaries and Ocean Waters of California (SWRCB 2019). Applicants must file an application with the California Water Boards (defined as the SWRCB and nine RWQCBs, collectively) for any activity that could result in the discharge of dredged or fill material to WOTS in accordance with Title 23 California Code of Regulations (CCR) Section 3855. The SWRCB procedures became effective on May 28, 2020.

For the purposes of this chapter, RWQCB jurisdiction (i.e., WOTS) has been interpreted conservatively as including natural streambeds, areas extending from the streambed/thalweg to the outer edge of adjacent riparian vegetation, isolated wetlands or waters that may not be under USACE jurisdiction, artificial ditches (non-agricultural) that could be relocated WOTS and have become relatively permanent features of the natural landscape, and excavated ponds or other artificial features that collect and/or convey surface water. Based on previous experience with the Central Coast RWQCB, their interpretation of State jurisdiction includes streambanks and riparian areas, despite the lack of a statewide definition and methodology for limits of WOTS.

If there is no CWA Section 404/401 nexus (such as in instances where WOTS that are not considered WOTUS could be impacted), compliance with the Porter-Cologne Act for impacts to WOTS could be regulated by the RWQCB through the Waste Discharge Requirement (WDR) program, which could require obtaining a WDR permit instead of CWA Section 404/401 permits. If the project does not qualify for an existing General Order WDR, in many situations, the new dredge/fill procedures would be followed to obtain an Individual WDR, which can be an extensive process.

Local

Native Tree Protection Ordinance (Title 9, Chapter 11)

Preservation of natural flora and fauna is a basic community goal of the *City of Atascadero General Plan* (City of Atascadero 2016) and native trees are valued community assets. Recognizing the trees of Atascadero as a valuable natural resource, a Native Tree Ordinance was adopted and was later revised to incorporate more stringent mitigation and follow-up requirements. The Native Tree Ordinance applies to all native trees; 2 inches diameter at breast height (DBH) or greater deciduous native oaks, California sycamore (*Platanus 9acemose*), and madrones (*Arbutus menziesii*); and 4 inches dbh or greater for all other protected native trees. Based on the ordinance, intentional harm, damage, death, or decline of a native tree or removal of a native tree requires a City-issued tree removal permit, unless exempt by the ordinance. Mitigation includes planting replacement trees, payment of fees into a tree fund, and/or establishment of an open space easement. A higher mitigation fee is required for the removal of deciduous native trees than for evergreen trees and a higher fee is required for commercial and multi-family properties versus single-family homes.

Existing General Plan Policies

General Plan Policy 6.1 states: "Ensure that development does not degrade scenic and sensitive areas, including historic sites, creeks, riparian corridors, wetlands, woodlands, hillsides and other valuable habitats." The programs associated with this policy include:

1. Encourage use of planned developments to cluster projects around open space easements, parks, and open space dedications and minimize impacts to natural resources.

2. Seek funding to purchase or require dedication of areas of unique habitats or scenic value, especially in areas lacking adequate park facilities and open space.
3. Require native trees and plant species to be incorporated into landscaping plans.
4. Scenic and sensitive lands, including creeks, riparian corridors, wetlands, and other areas of significant habitat value, shall be protected from destruction, overuse, and misuse by the use of zoning, tax incentives, easements, or fee acquisition.
5. Public and private development in close proximity to scenic and sensitive lands, including creek reservations, wooded areas, flood plains, prominent viewsheds, and historic sites, shall be designed to minimize impacts.
6. Scenic and open space easements, parklands, and open space dedications shall be required as mitigation for subdivisions and development projects that impact, floodplains, creek reservations, wooded areas, scenic backdrops, sensitive areas, historic sites, cultural sites, and similar areas.
7. The City shall carefully evaluate both public and private projects to require the preservation of trees, watersheds, natural slopes, and other natural features.
8. Subdivisions shall be reviewed in accordance with the Appearance Review Manual and the principle of maintaining the rural and natural character of the community.
9. Attention shall be paid to the aesthetic result of land division. Building sites shall minimize disruption of natural slopes, native vegetation, and watersheds by the careful selection of building sites, leach fields, and driveways. Building designs inappropriate for hillside locations shall not be approved.

General Plan Policy 7.1 states: "Ensure that the native trees of Atascadero are protected from new development in order to retain the natural character of the community." The programs associated with this policy include:

1. Enforce all provisions of the Atascadero Native Tree Ordinance as a high priority.
2. Maintain a current geographic information system (GIS)-based inventory map of all native woodlands, plant communities, sensitive habitats, connective habitat, and wildlife corridors. Require lot line adjustments, subdivision maps, and development permits to minimize impacts on mapped resources that are identified as sensitive and provide mitigation as requirement by the Native Tree Ordinance.
3. Update and maintain the Appearance Review Manual to include standards requiring building siting, mass, and scale to be compatible with surrounding natural features.
4. Require lot line adjustments and tentative subdivision maps on sites with 25 percent or greater native tree canopy cover to establish locations of building sites, driveways, and leach fields that will minimize native tree impacts.

General Plan Policy 7.2 states: "Protect and replenish native tree populations, including saplings." The programs associated with this policy include:

1. Continue to implement and enforce the Native Tree Ordinance to protect and replenish native tree species within the city. Construction permits for both residential and non-residential development shall be required to preserve as many native trees

as possible. Buildings shall be designed to utilize existing trees in the landscaping pattern. Any trees removed shall either (1) be replaced with like species, (2) in-lieu contributions made to the City's tree replacement fund or (3) have Planning Commission approved conservation easements created depending on the characteristics of the affected site.

2. Augment the City Geographic Information System to include a native tree GIS database to assist decision-makers with analyzing development proposals.
3. The City shall implement a comprehensive program for street tree planting and maintenance within the Urban Core and all major routes and approaches to the community.
4. Require planting of large canopy shade trees in new projects, in part to provide shading adjacent to buildings to conserve energy use.

General Plan Policy 8.1 states: "Ensure that development along Atascadero Creek, Graves Creeks, the Salinas River, blue line creeks, and natural springs, lakes, or other riparian areas does not interrupt natural flows or adversely impact riparian ecosystems and water quality." The programs associated with this policy include:

1. Work with other agencies to implement the Erosion Control Assistance Program for review of development proposals to minimize sedimentation of creeks and the Salinas River.
2. Update the Appearance Review Manual to include provisions for preserving, reclaiming and incorporating riparian features in conjunction with new development.
3. The waterways in the city shall be maintained in a natural state and concrete channelization creeks shall be prohibited.
4. The City shall strongly discourage underground piping, and unnecessary disturbance of creeks and streams, and encourage use of bridges and arched culverts. Any alterations required for public safety will be guided by this policy.
5. Allow flood protection measures (such as selective brush cleaning), low-impact trail development, streambed maintenance and bank protection along streams where appropriate with necessary permits.
6. Prohibit new structures or disturbance of riparian habitat along creek banks except for restoration purposes.
7. Maintain a current GIS-based map of the riparian areas within Atascadero.
8. Prior to permit approval, refer projects along blue-line creeks to the Corps of Engineers, Department of Fish and Game, Regional Water Quality Control, and Upper Salinas-Las Tablas Resource Conservation District.
9. Creek reservations and the Salinas River shall be preserved for open space and recreational use, with appropriate areas left in their natural state for public enjoyment and habitat purposes. Any recreational use of the River and creeks shall minimize its impact on the habitat value and open space qualities of the creeks.

10. Land disturbance shall be minimized in proximity to watercourses including necessary flood protection measures, such as selective brush clearing, and low-impact trail development.

11. Areas subject to flooding, as identified through flood hazard overlay zoning and flood maps, shall be protected from unsound development consistent with the City's flood hazard ordinance requirements.

12. Wellhead and Aquifer Recharge Area Protection Zones: The City shall adopt and maintain an ordinance that identifies existing and potential well sites and aquifer recharge areas, including sufficient buffers to protect them from contamination. The ordinance shall define restricted and prohibited land uses within the wellhead/recharge protection zones and provide for the review and approval by both the City and the Atascadero Mutual Water Company of any project or development within the specified zones. The ordinance will establish a policy to provide for the monitoring of activities within these protection zones.

13. Support the establishment and protection of floodable terraces, wetlands, and revegetation along creeks and streams.

General Plan Policy 8.2 states: "Establish and maintain setbacks and development standards for creek side development." The programs associated with this policy include:

1. Adopt and maintain a creek setback ordinance that will establish building setbacks and development standards along the banks of Atascadero Creek, Graves Creek, blue line creeks and the Salinas River to ensure the uninterrupted natural flow of the streams and protection of the riparian ecosystem with flexible standards for the downtown area. Responsibility: CDD, Planning Commission, City Council Timeframe: Adopt Ordinance in 2005.

2. Prior to adoption of a creek setback ordinance an interim 35-foot creek setback shall be in effect along Atascadero Creek and Graves Creek until March 1, 2005. All other 7.5 min USGS quadrangle blue line creeks shall have an interim 20-foot setback. The interim setbacks shall be subject to the following:

    a) On Atascadero Creek and Graves Creek setbacks shall be measured from the edge of the creek reservation.

    b) All other blue line creek setbacks shall be measured from ordinary high-water mark.

    c) The Planning Commission may approve exceptions to the interim creek setbacks in the form of a Conditional Use Permit if the finding can be made that creeks, riparian areas and site improvement will not be negatively impacted by the exception.

General Plan Policy 8.3 states: "Preserve public creek reserves for public access and ensure that recreational use does not impact habitat value and open space qualities." The programs associated with this policy include:

1. Develop park, trail, and recreational amenities where appropriate in public creek reserves.

2. Require the dedication of trail easements and access points as part of subdivision maps or development permits consistent with the Circulation Element.

5.3 Methods

Study Area

The study area consists of the city limits and sphere of influence boundary (see **Figure 2-2: Planning Area**). The study area encompasses 20,266 acres, or roughly 32 square miles.

Literature Review

SWCA Environmental Consultants compiled and reviewed available biological resources data within the study area. The desktop review included existing environmental literature and other pertinent information, including but not limited to:

Special-Status Species

CDFW California Natural Diversity Database (CNDDB) (CNDDB 2022) search that focused on the following 12 USGS 7.5-minute quadrangles: Atascadero, Templeton, Creston, Santa Margarita, Lopez Mountain, San Luis Obispo, Morro Bay South, Morro Bay North, York Mountain, Adelaida, Paso Robles, and Estrella.
CNPS Inventory of Rare and Endangered Plants of California (CNPS 2022b) query for the same 12 quadrangles searched for the CNDDB.
USFWS Information for Planning and Consultation (IPaC) website (USFWS 2022b) query for the study area.
USFWS Critical Habitat (and relevant published shapefiles) (USFWS 2022a) query.

Wetlands and Waterways

Biogeographic Information and Observation System (BIOS) (CDFW 2022a)
USFWS National Wetland Inventory (NWI) Wetlands Mapper (USFWS 2022c)
U.S. Geological Survey (USGS) National Hydrography Dataset (NHD) (USGS 2022)
California's Fish Passage Assessment Database (FishPAD)(CDFW 2022c)

Soils

U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey (NRCS 2022b)

Vegetation and Land Cover

USGS National Land Cover Database (NLCD) (Dewitz and USGS 2021)
Vegetation (fveg) - California Department of Forestry Fire Protection (CAL FIRE) Fire and Resource Assessment Program (FRAP) [ds1327] (CAL FIRE 2020)

5.4 Existing Physical and Biological Conditions

Atascadero is in the upper watershed of the Salinas River and is bordered by the Salinas River to the east and the Santa Lucia Mountain Range to the west. Elevations within the study area range from 760 to 2,305 feet. The city is located within the Interior Santa Lucia Range of the Central California Foothills and Coastal Mountains Ecoregion (Griffith et al. 2016). The Interior Santa Lucia Range stretches southeast from near Greenfield in the Salinas Valley, to near the

Sisquoc River, east of the Santa Maria Valley. The primary distinguishing characteristic of this ecoregion is its Mediterranean climate of hot dry summers and cool moist winters. Dominant vegetation types include oak woodlands, mixed chaparral shrublands, and annual grasslands.

Climate

The climate can be characterized as a typical Mediterranean climate of hot dry summers and cool moist winters. The average amount of annual precipitation is 15.3 inches (NOAA 2021). Most of the precipitation occurs between November and March, with January being on average the wettest month with 3.44 inches of precipitation (NOAA 2021). Maximum average summer (May through September) temperatures range between 86 degrees Fahrenheit (°F) to 92°F, but there are often multiple days with temperatures reaching over 100°F. Minimum average summer temperatures range between 49°F and 52°F. Maximum average winter (October–April) temperatures range between 61°F and 80°F, with minimum average winter temperatures ranging between 32°F and 41°F. The coastal microclimates in San Luis Obispo County differ greatly from the inland climates of Atascadero.

Soils

The geology of the region is mostly Cretaceous sedimentary rocks and Miocene marine sediments. There are 49 soil types within the study area, encompassing five taxonomic orders: Alfisols, Entisols, Inceptisols, Mollisols, and Vertisols (**Table 5-1; Figure 5-1**). Only one—Clear Lake clay, drained—is classified as hydric. The soil types are listed below by taxonomic order, including their total area and percentage of the study area. The Mollisols dominate (52%) the study area and are mostly centered along U.S. Route (US) 101 and El Camino Real running north to south. Their associations range from alluvial fans, flats, and plains, to terraces and mountains and hillslopes and are characterized as soft, deep, dark fertile soil formed in grasslands. Inceptisols, young soils, comprise the second largest group (25%) of soils in the study area. These are primarily located along the western edge of the study area and comprise the foothills of the Santa Lucia Mountain Range, where they are mainly associated with hills and mountains. The Entisols primarily occur in alluvial fans, floodplains, stream terraces, and valleys or on the terraces of hills and mountains. Entisols are recently formed soils that lack well-developed horizons and commonly found on river and beach sediments of sand and clay or volcanic ash. One of the main soil types in this group are the Corducci and Typic Xerofluvents, which primarily occur in the streambed of the Salinas River. The Alfisols, soils with aluminum and iron, primarily occur on terraces adjacent to the Salinas River. The smallest group (only 1.1%) are the Vertisols, which are clay-rich and contain the only hydric soil in the study area—Clear Lake clay, drained—which occurs in a small pocket along Morro Road west of State Route (SR) 1.

Table 5-1: Soil Types within the Study Area

Soil Type	Total Acres	% of Study Area	Hydric
Alfisols	1,294	6.4%	
Arbuckle fine sandy loam	184	0.9%	No
Arbuckle-Positas complex	362	1.8%	No
Arbuckle-San Ysidro complex	367	1.8%	No
Dibble clay loam	84	0.4%	No

Table 5-1: Soil Types within the Study Area

Soil Type	Total Acres	% of Study Area	Hydric
Rincon clay loam	234	1.2%	--
Ryer clay loam	63	0.3%	No
Entisols	2,494	12%	
Arnold loamy sand	486	2.0%	No
Arnold-San Andreas complex	218	1.1%	No
Corducci and Typic Xerofluvents occasionally flooded	483	2.4%	No
Gaviota-Rock outcrop complex	108	0.5%	No
Hanford and Greenfield gravelly sandy loams	68	0.3%	No
Hanford and Greenfield soils	658	3.3%	No
Metz loamy sand	10	<0.1%	No
Metz-Tujunga complex occasionally flooded	28	0.1%	No
Oceano loamy sand	435	2.2%	No
Inceptisols	5,008	25%	
Balcom-Calleguas complex	20	0.1%	No
Balcom-Nacimiento association	87	0.4%	No
Millsholm-Dibble complex	4,340	21.5%	No
Millsholm-Rock outcrop complex	562	2.8%	No
Mollisols	10,582	52%	
Botella sandy loam	254	1.3%	No
Concepcion sandy loam	20	0.1%	No
Elder loam	183	0.8%	No
Elder loam flooded	60	0.2%	No
Gazos shaly clay loam	817	4%	No
Linne-Calodo complex	1,491	7.4%	No
Linne-Diablo complex	39	0.2%	No
Linne-Zakme complex	705	3.5%	No
Lockwood shaly loam	106	0.5%	No
Lockwood-Concepcion complex	199	1%	No
Lompico loam	595	2.9%	No
Lompico-McMullin complex	369	1.8%	No
Los Osos-Rock outcrop complex	816	4.0%	No
McMullin-Rock outcrop complex	544	2.7%	No

Table 5-1: Soil Types within the Study Area

Soil Type	Total Acres	% of Study Area	Hydric
Mocho clay loam	84	0.4%	No
Nacimiento silty clay loam	34	0.2%	No
Nacimiento-Los Osos complex	242	1.2%	No
Pico fine sandy loam	19	0.1%	No
San Andreas sandy loam	10	0.1%	No
San Andreas-Arujo complex	1,480	7.3%	No
Santa Lucia-Gazos complex	147	0.6%	No
Santa Lucia-Lopez complex	1,052	5.2%	No
Shimmon-Dibble association	43	0.2%	No
Sorrento clay loam	105	0.5%	No
Still clay loam	1,013	5.0%	No
Still gravelly loam	141	0.7%	No
Vertisols	216	1.1%	
Ayar and Diablo soils	94	0.5%	No
Clear Lake clay drained	68	0.3%	Yes
Cropley clay	53	0.2%	No
Unclassified	611	3.0%	
PITS	66	0.3%	No
Rock outcrop-Gaviota complex	505	2.5%	No
Water	40	0.2%	NA

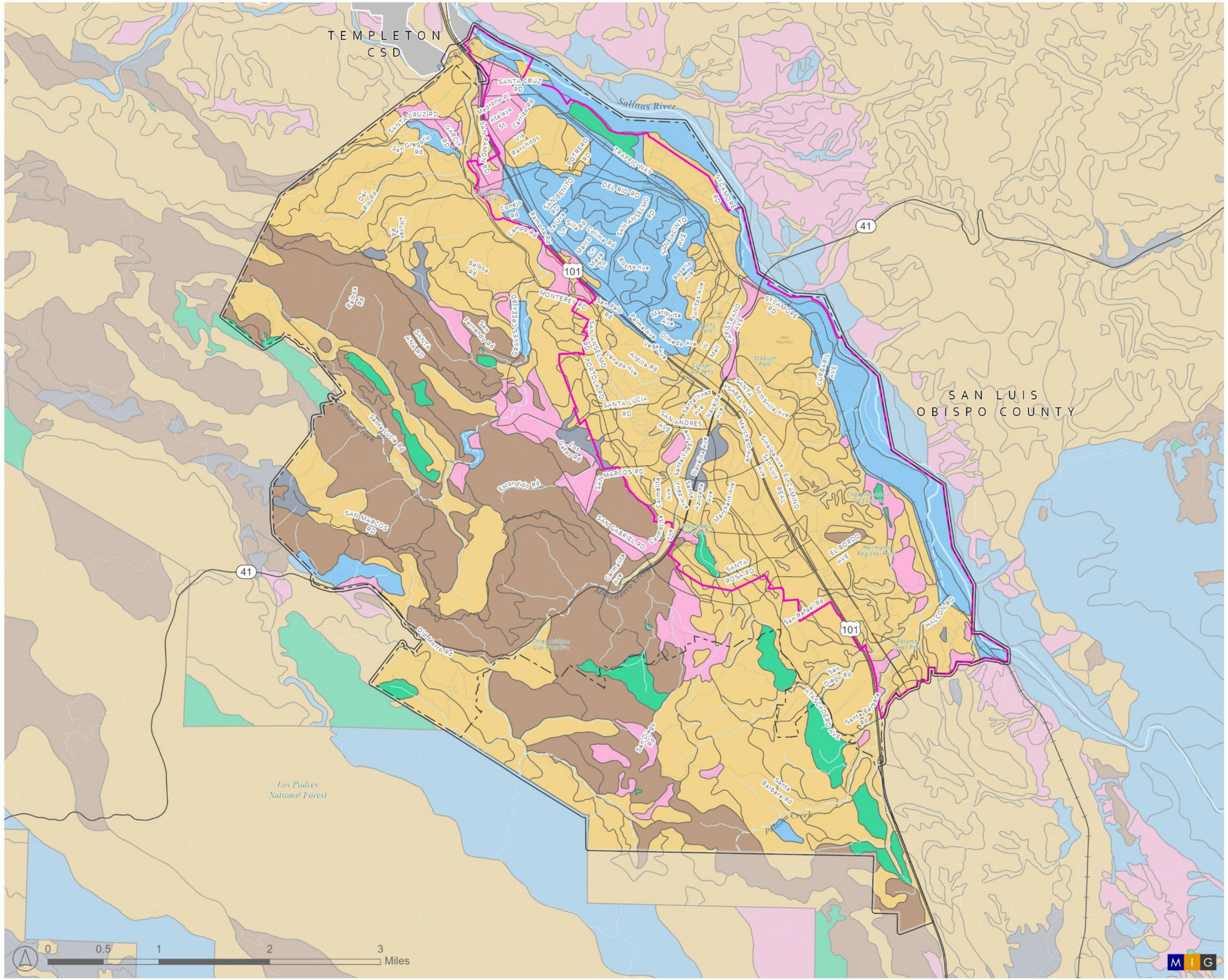
Source: NRCS (2022a, 2022b)

Watersheds

The majority (98%) of the study area falls within the Salinas River Hydrologic Unit Code (HUC)-8 No. 18060005, with less than 2% falling within the Central Coast (HUC-8 No. 18060006) (**Figure 5-2**). **Table 5-2** lists the watersheds that fall within the study area; however, the main watersheds are the Graves Creek (HUC-12 No. 180600050403) watershed (42%), Atascadero Creek (HUC-12 No. 180600050204) watershed (32%), and Paloma Creek (HUC-12 No. 180600050205) watershed (24%). Graves, Atascadero, and Paloma Creeks all flow into the Salinas River, which parallels the eastern edge of the study area. A significant number of watercourses throughout the city contribute to the overall health of the watersheds and support the City's major creeks. Each of these watercourses and watersheds play a role in water quality and can be affected by flooding, contamination, increased turbidity, litter and debris, and other land use changes.

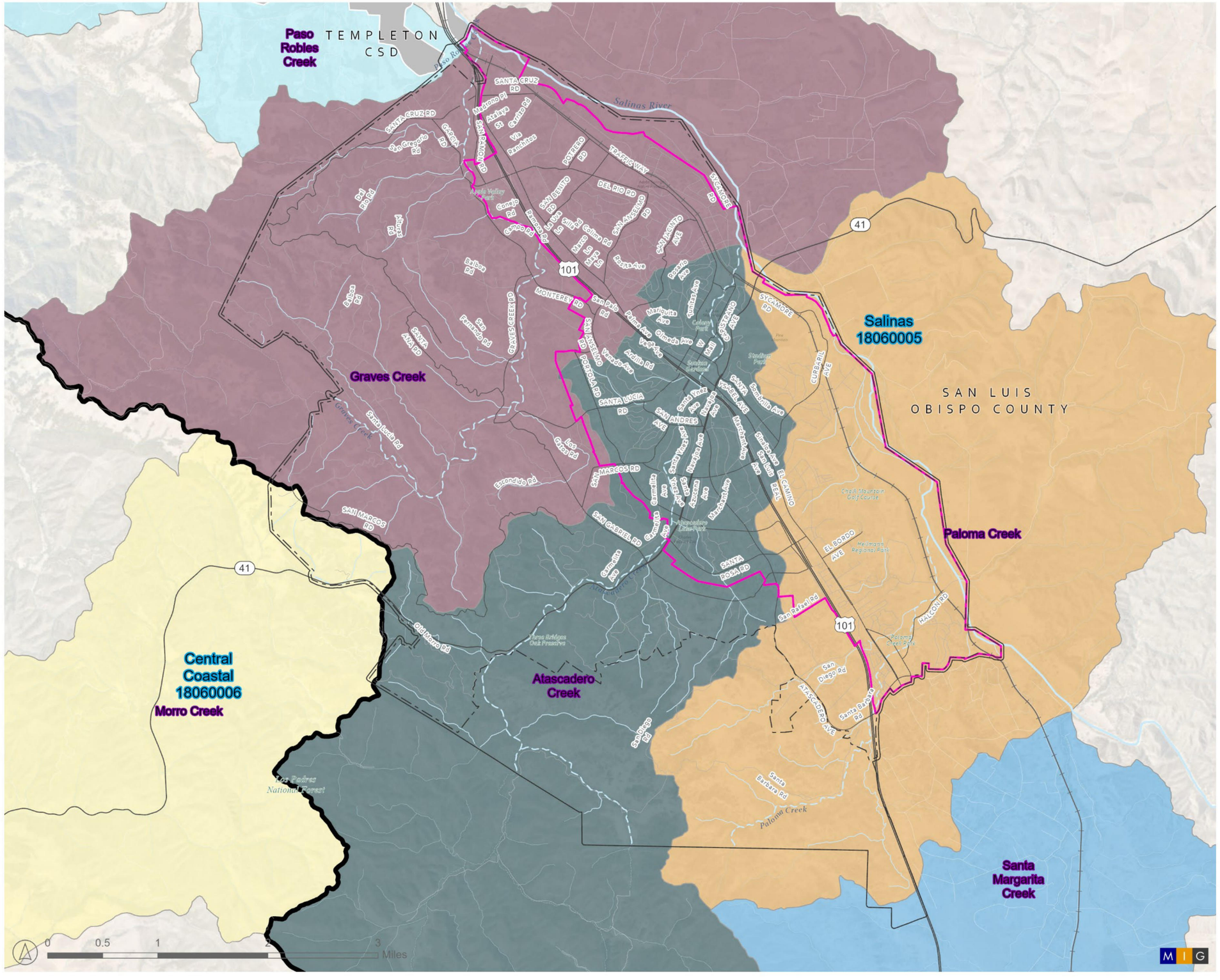
Table 5-2: Major Watersheds within the Study Area

Watershed	Area (acres)	% of Study Area
Watersheds (USGS 8-digit HU)		
Salinas River (HUC-8 No. 18060005)	19,920	>98%
Central Coastal (HUC-8 No. 18060006)	346	<2%
Subwatersheds (USGS 12-digit HU)		
Graves Creek (HUC-12 No. 180600050403)	8,497	42%
Atascadero Creek (HUC-12 No. 180600050204)	6,466	32%
Paloma Creek (HUC-12 No. 180600050205)	4,901	24%
Santa Margarita Creek (HUC-12 No. 180600050204)	36	<1%
Paso Robles Creek (HUC-12 No. 180600050402)	20	<1%
Morro Creek (HUC-12 No. 180600060412)	346	<2%


TEMPLETON CSD
SAN LUIS OBISPO COUNTY
Salinas River
Los Padres National Forest
Three Bridges Oak Preserve
Heilmann Regional Park
Paloma Creek Park
Stadium Park
Sunken Gardens
Pine Mountain
Chalk Mountain Golf Course
SANTA CRUZ RD
SAN MARCOS RD
SAN GABRIEL RD
SANTA ROSA RD
MONTEREY RD
SAN ANDRES AVE
SANTA LUCIA RD
SAN ANSELMO RD
DEL RIO RD
TRAFFIC WAY
SYCAMORE RD
CURBART AVE
EL BORDO AVE
HALCOMB
SAN RAFAEL RD
SAN DIEGO RD
SAN BARBARA RD
SANTA BARBARA RD
ARROYO CEDRO AVE
ARROYO DE LA CRUZ
ARROYO DE LA CIENEGA
Graves Creek
Santa Ysabel Creek
Paloma Creek
Old Horno Rd
Los Osos Rd
Escondido Rd
Balboa Rd
Alturas Rd
Del Rio Rd
San Gregorio Rd
Gaboto Rd
Marono Pl
Atalaya Pl
Carlton Rd
Via Panchitos
Rotpero Rd
San Benito Rd
La Gilla Rd
Colima Rd
Marco Rd
La Mesa Dr
Rosita Ave
Rosario Ave
Marigold Ave
Olmeda Ave
Vega Ave
Ardilla Rd
Venado Ave
Palma Ave
San Pablo Rd
Portola Rd
Graves Creek Rd
Santa Ana Rd
San Fernando Rd
Santa Ysabel Rd
Camino Real
Consejo Rd
Camino Rd
Pamela Rd
Santa Ynez Ave
Azucena Ave
Magnolia Ave
Marchant Ave
Sinaloa Ave
San Luis Rey Ave
Camelia Ave
Carmelita Ave
Cypress Ave
Santa Clara Ave
Rosa Ave
Sombrilla Ave
Santa Inez Ave
Mall
Sycamore Ave
Stadium Dr
Rosario Ave
Tomas Ave
Mariquita Ave
Palma Ave
Vega Ave
Ardilla Rd
Venado Ave
Portola Rd
Santa Lucia Rd
San Andres Ave
Santa Ynez Ave
Azucena Ave
Magnolia Ave
Marchant Ave
Sinaloa Ave
San Luis Rey Ave
El Camino Real

AUTHENTIC Atascadero OUR CITY, OUR PLAN

Figure 5-2
Watersheds



Basemap Features
- Atascadero City Limits
- Atascadero Planning Area
- Urban Services Line
- Rivers + Waterbodies
- Major Roads + Freeways

HUC8
- Central Coastal
- Salinas

HUC12
- Graves Creek
- Atascadero Creek
- Paloma Creek
- Paso Robles Creek
- Santa Margarita Creek
- Morro Creek

Source(s):
Esri, CA State Open Data, County of San Luis Obispo, City of Atascadero 2023.

Vegetation and Landcover Types

The vegetation and landcover categories used for the study area are from the CAL FIRE FRAP [ds1327] (**Figure 5-3**) (CAL FIRE 2020). This database is the result of a multi-agency collaboration to compile the "best available" land cover data available for California into a single comprehensive statewide data set. The classification scheme follows the California Wildlife Habitat Relationships (CWHR) system. Although these categories do not follow CNPS vegetation classification, there is a crosswalk reference created by CDFW available online (CDFW 2005).

Table 5-3: Vegetation and Landcover Types within the Study Area

Cover Type	Area (acres)	% of Study Area
Annual Grassland	4,919	24%
Barren	1,145	6%
Blue Oak Woodland	2,025	10%
Blue Oak-Foothill Pine	3,186	16%
Coastal Oak Woodland	4,786	24%
Coastal Scrub	381	2%
Cropland	26	0.13%
Deciduous Orchard	59	0.29%
Dryland Grain Crops	11	0.05%
Evergreen Orchard	8	0.04%
Irrigated Hayfield	24	0.12%
Lacustrine	31	0.15%
Mixed Chaparral	875	4%
Pasture	53	0.26%
Riverine	335	2%
Urban	1,482	7%
Valley Foothill Riparian	26	0.13%
Valley Oak Woodland	825	4%
Vineyard	68	0.34%

Vegetation Types

Blue Oak Woodland

Blue Oak Woodlands have an overstory dominated by blue oak (*Quercus douglasii*), comprising 85% to 100%. The canopy is comprised of scattered trees but can be closed. More often the canopy forms open, savanna-like stands on rolling ridges, hills, and slopes. The dominant tree species is blue oak, but common associates in the canopy include coast live live oak (*Quercus agrifolia*) and foothill pine (*Pinus sabiniana*). Shrubs are rarely present, but can include poison-oak (*Toxicodendron diversilobum*), California coffeeberry (*Frangula californica*), ceanothus (*Ceanothus* spp.), California buckeye (*Aesculus californica*), and manzanita (*Arctostaphylos* spp.) However, more commonly, the understory is an extension of the Annual Grassland vegetation, comprising mainly of annuals, such as brome grass (*Bromus* spp.), wild oats (*Avena* spp.), foxtail (*Alopecurus* spp.), barley (*Hordeum* spp.), filaree (*Erodium* spp.), and others.

Within the study area, this community occurs as patches in a mosaic with Annual Grasslands, Mixed Chaparral, Coastal Oak Woodland, Valley Oak Woodlands, Coastal Oak woodland and Blue Oak-Foothill Pine Woodlands. It typically occurs where soils are shallow, rocky, infertile, and well drained; and on dry, hot, hilly terrain where the water table is often inaccessible. The impressive spring wildflower displays within the study area are often found within Blue Oak Woodlands. It is an important wildlife habitat, used by birds, mammals, amphibians, and reptiles for nearly all stages of their life. Blue Oak Woodlands comprise roughly 10%, or 2,025 acres, of the study area.

Coastal Oak Woodland

Coastal Oak Woodlands represent a highly diverse and variable community, based on the interacting factors of slope, soil, precipitation, moisture availability, and air temperature. The overstory is dominated by deciduous and evergreen hardwoods (mostly oaks) but can have some scattered conifers. The trees can be dense and form a closed canopy, or they can be scattered and form an open woodland. The understory can contain shrubs and annual grasses and forbs. In dense coast live oak woodlands understory, plants may include more shade-tolerant shrubs such as California blackberry (*Rubus ursinus*) and poison oak, which typically occurs along riparian corridors. Significant litter accumulation is typical. The dominant tree species within the study area is coast live oak, but may include blue oak, valley oak (*Quercus lobata*), California bay (*Umbellularia californica*), big leaf maple (*Acer macrophyllum*), or toyon (*Heteromeles arbutifolia*).

Coastal Oak Woodlands is abundant throughout the study area, with most stands occurring on steeper slopes west of US 101 and the urban core. Here, it is in a mosaic with Annual Grassland, Mixed Chaparral, Blue Oak Woodland, Valley Oak Woodland, and Coastal Scrub. On the eastern side of the freeway the stands form a mosaic with Blue Oak Woodlands and urban development. It occurs on rolling ridges, slopes, and hills with well-drained soils. Coastal Oak Woodlands comprise roughly 24%, or 4,786 acres, of the study area.

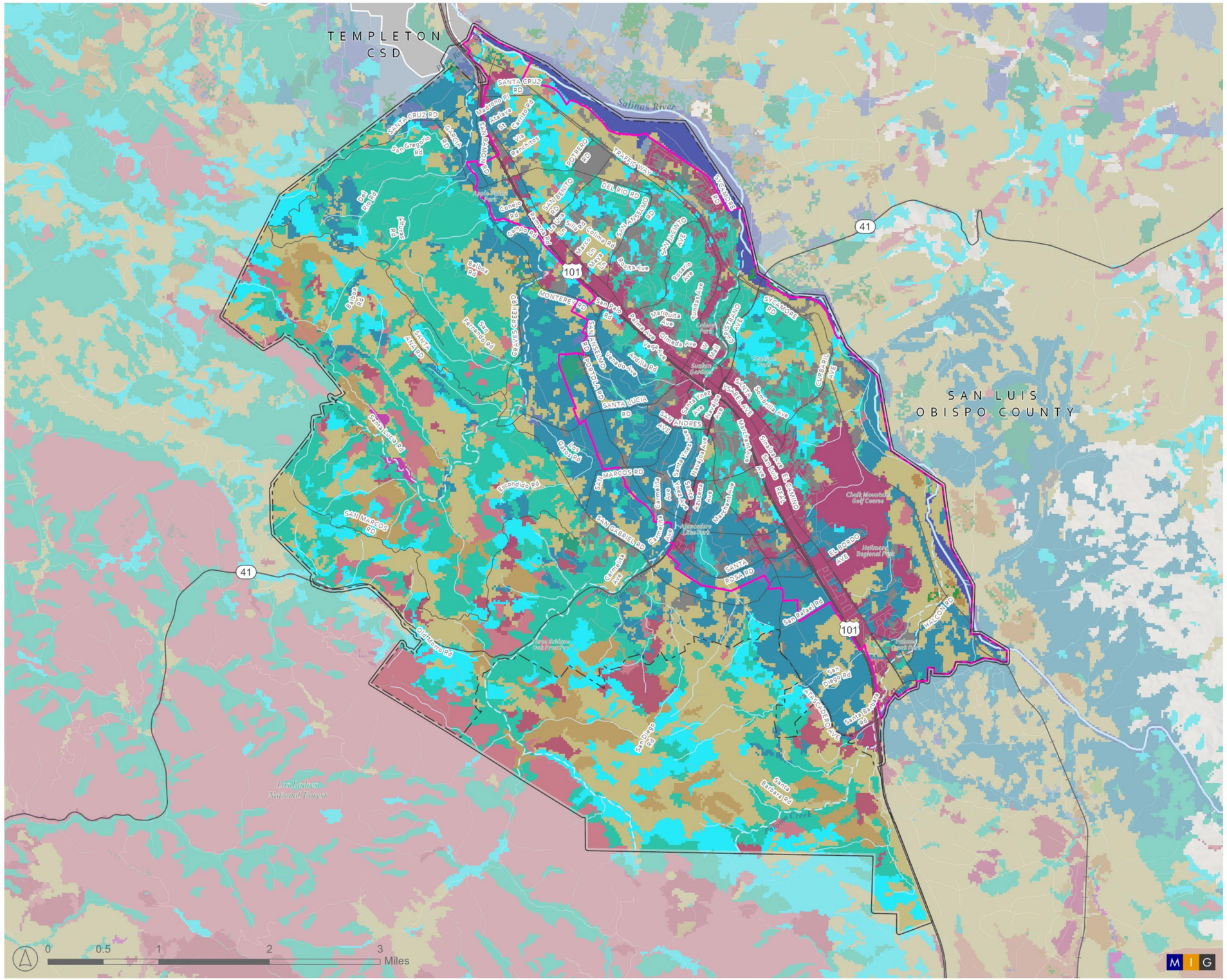


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Figure 5-3
California Vegetation

Basemap Features

- Atascadero City Limits
- Atascadero Planning Area
- Urban Services Line
- Rivers + Waterbodies
- Major Roads + Freeways

California Vegetation

- Annual Grassland
- Barren
- Blue Oak Woodland
- Blue Oak-Foothill Pine
- Coastal Oak Woodland
- Coastal Scrub
- Cropland
- Deciduous Orchard
- Dryland Grain Crops
- Evergreen Orchard
- Irrigated Hayfield
- Lacustrine
- Mixed Chaparral
- Pasture
- Riverine
- Urban
- Valley Foothill Riparian
- Valley Oak Woodland
- Vineyard

Source(s):
Esri, CA State Open Data, County of San Luis Obispo, City of Atascadero 2023.

Blue Oak-Foothill Pine

Blue Oak-Foothill Pine Woodlands stands are characterized by an overstory of blue oak and foothill pine, with blue oak typically dominating. Other tree species can be found within this community, including coast live oak, valley oak, and California buckeye. Canopy cover typically ranges from 10 to 59% and there is usually some component of standing dead wood (snags). The understory can contain shrubs and annual grasses and forbs. This community occurs in a mosaic with other communities, typically Annual Grasslands, Blue Oak Woodlands, and Valley Oak Woodlands. Within the study area, the relative proportion of blue oak to foothill pine is variable, but blue oak tends to dominate throughout. The understory has few shrubs and is dominated by annual grasses and forbs.

Blue Oak-Foothill Pine Woodlands is a valuable breeding habitat for a large variety of wildlife species. However, this community is most abundant west of US 101 between the urban core and San Gabriel Road in areas zoned rural estates. Blue Oak-Foothill Pine Woodlands comprises roughly 16% or 3,186 acres of the study area.

Valley Oak Woodland

Valley Oak Woodlands have an overstory dominated nearly exclusively by valley oak but can have foothill pine and coast live oak components on the margins of stands where communities begin to intergrade. The canopy can be open, with a savanna-like structure, or closed, with a forest-like structure. Tree density is dependent on water and soil, with denser stands occurring in valley soils along natural drainages. There can be a shrub component, typically poison oak, toyon, and coffeeberry, particularly in undisturbed/ungrazed stands. The understory is dominated by annual grasses and forbs.

Within the study area this community occurs nearly exclusively along the western edge, in a mosaic with Blue Oak Woodland, Mixed Chaparral, Coastal Oak Woodland, and Annual Grassland. It is found in valley bottoms and low areas where the soils are deep, well developed, and alluvial. Valley Oak Woodland comprises roughly 4%, or 825 acres, of the study area.

Annual Grassland

Annual Grasslands are open grasslands composed of annual herbaceous plant species, with many of the species occurring as understory components in woodland and shrub community types. The dominant species are introduced annual grasses, including wild oats, soft chess (*Bromus hordeaceus*), ripgut brome (*Bromus diandrus*), red brome (*Bromus rubens*), foxtail barley (*Hordeum murinum*), and foxtail fescue (*Vulpia myuros*). Common forbs in this community are a mixture of introduced and native species, including filaree (*Erodium* spp.), true clovers (*Trifolium* spp.), bur clover (*Medicago polymorpha*), popcorn flower (*Plagiobothrys*), fiddleneck (*Amsinckia* spp.), miniature lupine (*Lupinus bicolor*), and sky lupine (*Lupinus nanus*). Native perennial grasses are occasionally found in less disturbed areas, including purple needlegrass (*Stipa pulchra*) and one-sided bluegrass (*Poa secunda*).

This community is abundant throughout the study area and is found in a mosaic with all community types. Annual Grassland comprises approximately 4,919 acres, or roughly 24%, of the study area.

Mixed Chaparral

Mixed Chaparral is a shrub community dominated by shrubs with thick, stiff leaves adapted to hot, dry summers and limited winter precipitation. It is dense and forms a nearly impenetrable stand with greater than 80% absolute shrub cover. The dominant shrub species are several species of ceanothus (*Ceanothus* spp.) and manzanita (*Arctostaphylos* spp.), as well as scrub oak (*Quercus dumosa*), toyon, hollyleaf cherry (*Prunus ilicifolia*), and chamise (*Adenostoma fasciculatum*). Within the study area, mixed chapparal occurs in the western portion of the study area on mid-slopes below woodland and forest types. It is bounded on its lower end by coastal scrub and begins to merge with woodland and forest types on its upper edge. It is on steep slopes and ridges. Mixed Chaparral comprises 875 acres, or roughly 4%, of the study area.

Coastal Scrub

Coastal Scrub is a shrub community dominated by shrubs well adapted to hot, dry summers and limited winter precipitation. Typically, shrubs have sclerophyllous leaves or are drought deciduous, and have flexible branches and semi-woody stems. The shrub layer can be up to 7 feet and canopy cover can approach 100%. The dominant shrub species are black sage (*Salvia mellifera*), California buckwheat (*Eriogonum fasciculatum*), sticky monkeyflower (*Diplacus aurantiacus*), and coastal sagebrush (*Artemisia californica*). This community occurs in the western portion of the study area, in a mosaic with the tree communities (Coastal Oak Woodland, Blue Oak Woodland, and Valley Oak Woodland) and mixed chaparral. It is strictly in the western portion of the study area, at higher elevations on steep, dry, south-facing slopes. Coastal Scrub comprises approximately 381 acres, or roughly 2%, of the study area.

Valley Foothill Riparian

Valley Foothill Riparian is a habitat type restricted to areas adjacent to rivers and streams. Dominant species in the canopy layer include cottonwood, California sycamore, and valley oak. Subcanopy trees can include white alder (*Alnus rhombifolia*) and boxelder (*Acer negundo*). Typical understory shrub layer plants include California blackberry, poison oak, wild rose (*Rosa californica*), elderberry (*Sambucus* sp.), and willows (*Salix* spp.). The herbaceous layer consists of sedges, rushes, grasses, miner's lettuce (*Claytonia perfoliata*), poison hemlock (*Conium maculatum*), and hoary nettle (*Urtica dioica*). There are only two small pockets of this vegetation type mapped within the study area in the northwestern side along Graves Creek, but likely occurs in other areas along the riparian corridors. Valley Foothill Riparian comprises approximately 26 acres, or roughly 0.13%, of the study area.

Riverine

The areas mapped as Riverine within the study area encompass the large, braided channel of the Salinas River, which borders the eastern edge of the study area. While much of this area may also contain similar species as those found in the Valley Foothill Riparian community, the Salinas River Riparian corridor is a mature, multi-layered woodland habitat with sycamore, cottonwood (*Populus fremontii*), and willow (*Salix* spp.). The central part of the channel can be characterized by large washes and braided channels, and open water habitat characteristic of a larger river. Riverine comprises approximately 335 acres, or roughly 2%, of the study area.

Landcover Types

Agriculture

The main agricultural landcover types mapped by the CAL FIRE FRAP vegetation database are vineyard, deciduous orchard, pasture, cropland, irrigated hayfield, dryland grain crops, and evergreen orchard (see **Figure 5-4**). Much of the orchard, cropland, and pasture is located within parcels zoned rural estates. However, vineyards were equally popular on parcels zoned rural estates and larger (1.5–2.5 acre) single-family residential parcels.

Urban/Developed

The CAL FIRE FRAP vegetation database only identifies 1,482 acres of land within the study area as urban, which is considerably smaller than the approximately 2,650 acres of development (low, medium, and high intensity) mapped by the USGS NLCD. The majority of this landcover type falls within areas zoned general commercial, downtown, residential, public facilities, and public recreation.

Barren

The CAL FIRE FRAP vegetation database includes a barren category. The CWHR system defines barren habitats by the absence of vegetation. More specifically, any habitat with less than 2% total vegetation cover by herbaceous, desert, or non-wildland species and less than 10% cover by tree or shrub species. Within the study area, this category appears to correlate with non-vegetated infill areas interspersed between lower-density residential areas. It is also associated with public facilities, such as the fields around Atascadero High School. The largest areas mapped barren are situated between US 101 and the Salinas River. Within the study area there are 1,145 acres or roughly 6% of the study area.

Aquatic Resources

As mentioned above, three main creeks and several tributaries run through the City of Atascadero: Graves, Atascadero, and Paloma Creeks. All three drain into the Salinas River, which runs along the eastern boundary of the city. The other main aquatic feature that plays a vital role in the community is Atascadero Lake.

Salinas River

The Salinas River defines the eastern boundary of Atascadero. It is the principal river system on the Central Coast of California. It flows northward approximately 170 miles from San Luis Obispo County, through Monterey County, and emptying into Monterey Bay near the City of Marina (Upper Salinas-Las Tablas Resource Conservation District [US-LTRCD] 2012, 2014). The central part of the channel can be characterized by large washes, braided channels, and open water habitat characteristic of a larger river, as shown in the photographs below. The Salinas River Riparian corridor consists of mature, multi-layered woodland habitat with sycamore, cottonwood, and willow (*Salix* spp.) that provide habitat for many species of songbirds and raptors. However, urban and agricultural practices have caused habitat degradation and alteration over time. For example, illegal off-road use of the Salinas River causes displacement of the riverbed, pollution of the river, and destruction of riparian vegetation (US-LTRCD 2018).



Salinas River: Photo taken from Halcon Road, facing north (downstream) and south (upstream).

Graves Creek

Graves Creek is a tributary of the Salinas River. It flows northeast and joins the Salinas River approximately 0.25 miles south of Paso Robles Creek. Almost the entire watershed of Graves Creek falls within the study area boundary (8,498 acres) There are approximately 60 linear miles of tributaries within the watershed that eventually drain into Graves Creek and the Salinas River. Graves Creek itself stretches approximately 7.5 linear miles in a northeasterly direction across the study area. The headwaters start in the northwestern portion of the study area and meander eastward through rural estate and rural residential parcels. The riparian canopy in the upper reaches is dominated by oaks and California bay trees. The riparian canopy in the middle reach is dominated by oaks, willows, black walnut, and California sycamore trees. The creek abruptly turns north at Ramona Road and US 101 where it parallels the highway before flowing underneath it and eventually flowing into the Salinas River. The creek opens into a wider channel east of US 101 where it parallels the Juan Bautista de Anza Trail (de Anza trail) at the confluence with the Salinas River. In this area t,he riparian vegetation is dominated by arroyo willows and California sycamore, and the banks are dominated by coyote brush.

Graves Creek provides important wildlife habitat but is heavily impacted by residential development. Historically (prior to the 1950s) Graves creek supported an abundant population of steelhead (*Oncorhynchus mykiss irideus*) (US-LTRCD 2002) and likely supported populations of foothill yellow-legged frog (*Rana boylii*) and California red-legged frog (*Rana draytonii*), but most of these species were extirpated from this area in the late 1970s. Nevertheless, Graves Creek still provides an important wildlife movement corridor connecting the Santa Lucia Mountain Range to the Salinas River Valley. There are historic accounts that steelhead runs would start in January and end in March, and depending on the rains, could bring steelhead upstream through May (US-LTRCD 2002). Based on historical occurrence data the entirety of Graves Creek has been designated as critical habitat for steelhead.

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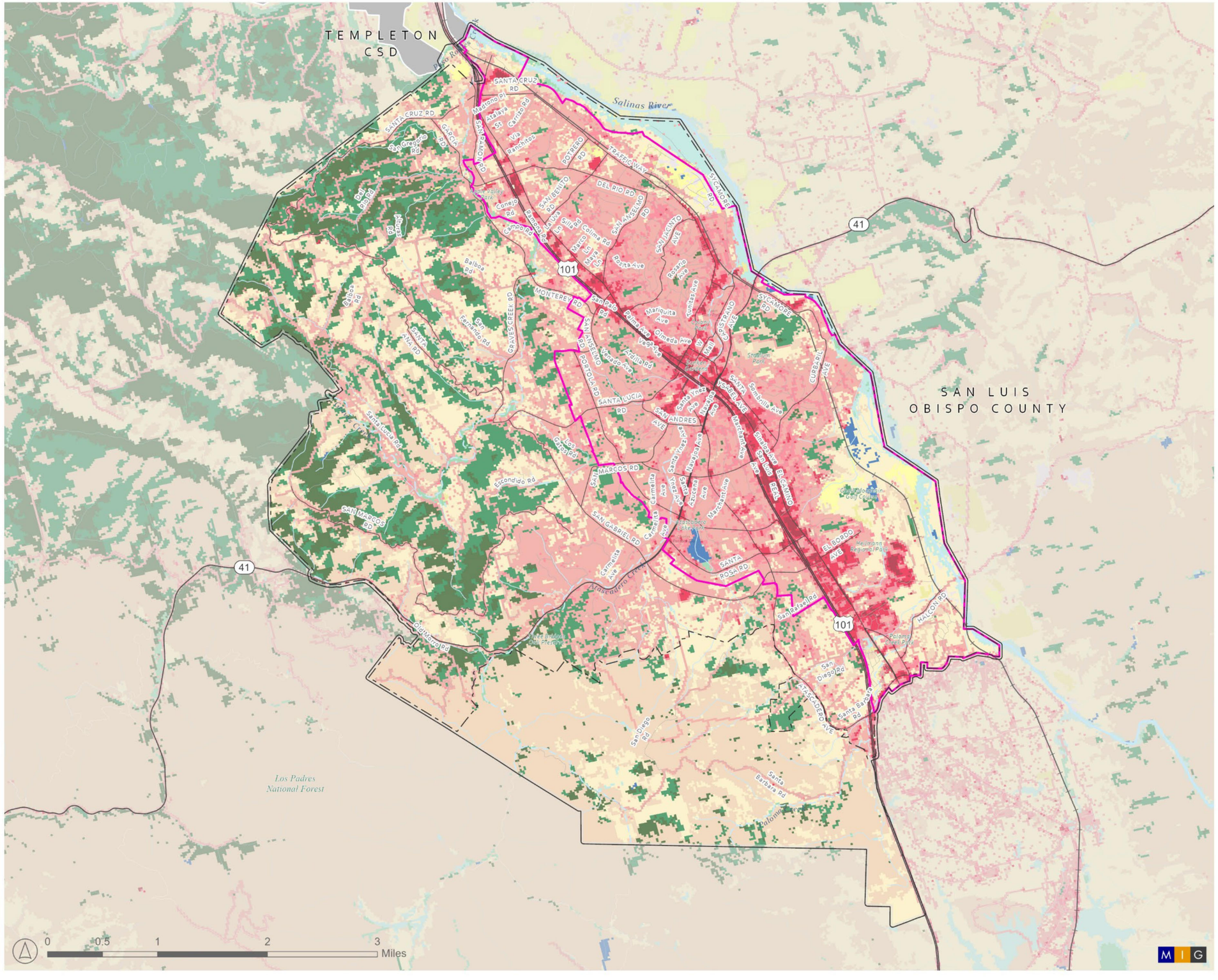
Figure 5-4
NLCD Land Cover



Basemap Features
- Atascadero City Limits
- Atascadero Planning Area
- Urban Services Line
- Rivers + Waterbodies
- Major Roads + Freeways

NLCD Land Cover
- Open Water
- Developed Open Space
- Developed Low Intensity
- Developed Medium Intensity
- Developed High Intensity
- Barren Land
- Deciduous Forest
- Evergreen Forest
- Mixed Forest
- Shrub/Scrub
- Grassland/Herbaceous
- Pasture/Hay
- Cultivated Crops
- Woody Wetlands
- Emergent Herbaceous Wetlands

Source(s):
Esri, CA State Open Data, County of San Luis Obispo, City of Atascadero 2023.

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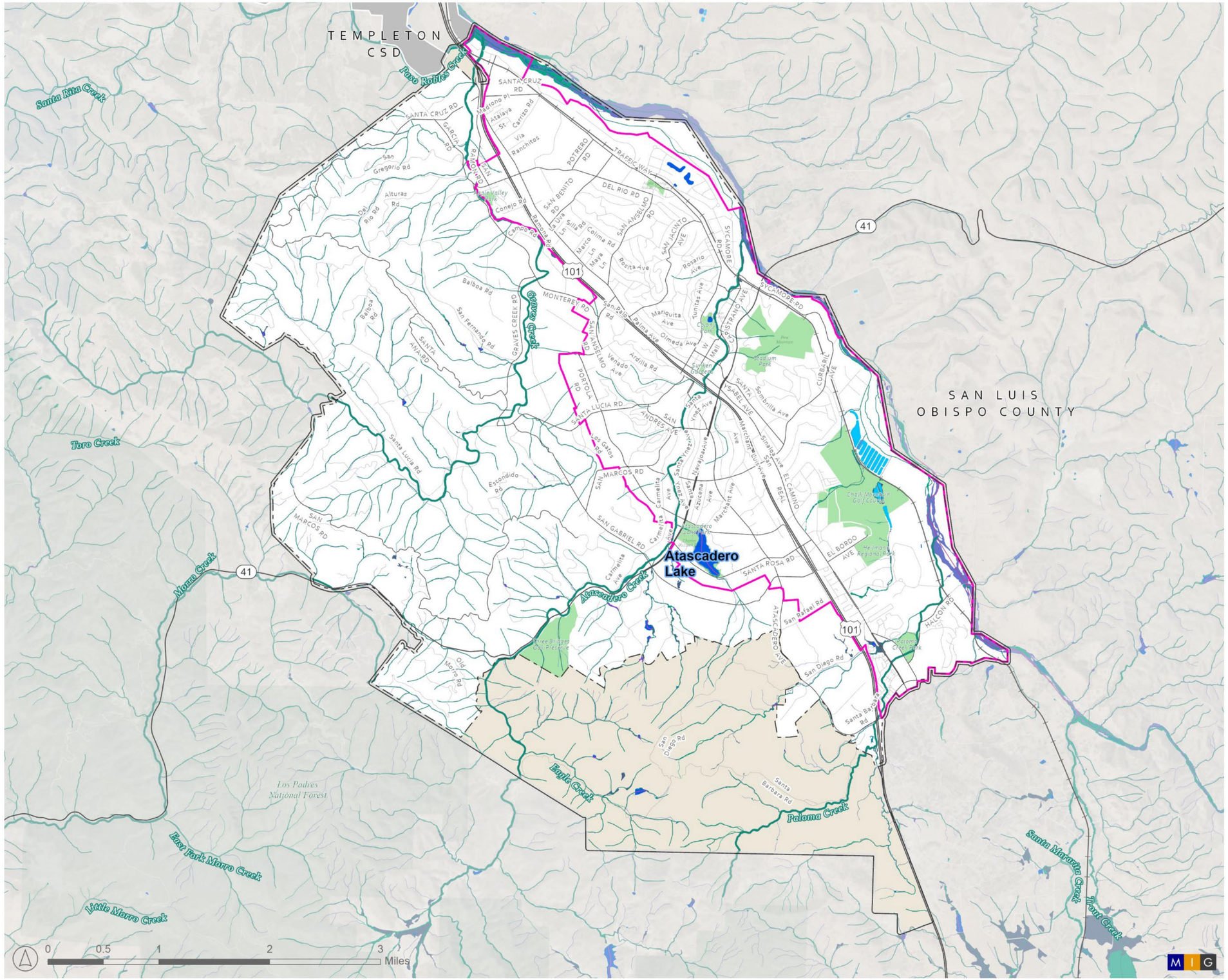
Figure 5-5
Aquatic Resources



Basemap Features
- Atascadero City Limits
- Atascadero Planning Area
- Atascadero Sphere of Influence
- Urban Services Line
- Parks + Open Space
- Major Roads + Freeways

National Hydrology Dataset (NHD)
- Stream/River
- Artificial Path
- Lake/Pond
- Reservoir

National Wetland Inventory (NWI)
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Riverine

Source(s):
Esri, CA State Open Data, County of San Luis Obispo, City of Atascadero 2023.



Graves Creek: Left photo taken on North Ferrocarril Road bridge, facing east (downstream). Right photo taken on Santa Lucia Road bridge, facing north (downstream).

Atascadero Creek

Atascadero Creek is a tributary of the Salinas River that flows eastward, parallel to SR 41. Its two main tributaries are Eagle and Hale Creeks. The study area includes approximately 6,427 acres of the Atascadero Creek watershed. There are approximately 42 linear miles of tributaries within the watershed that eventually drain into Atascadero Creek and the Salinas River. Atascadero Creek is an intermittent stream that stretches 6.7 linear miles across the study area from west to east. Riparian vegetation ranges from willow scrub to multi-layer mature riparian woodland with cottonwood, sycamore, black walnut, and willow. The creek has been highly impacted by urban development. Historically, problems of illegal dumping, off-road vehicles (ORVs) and urban pollution have significantly degraded the quality of the habitat, particularly for key aquatic species, such as steelhead (US-LTRCD 2012, 2014).



Atascadero Creek: Left photo taken on Lewis Avenue bridge, facing west (upstream), adjacent to City of Atascadero government offices downtown. Right photo taken from Curbaril Avenue pedestrian bridge, facing south (upstream).

Paloma Creek

The study area encompasses approximately 7.5 linear miles of Paloma Creek, approximately 4,891 acres of the Paloma Creek-Salinas River watershed, and approximately 18 linear miles of tributaries. The creek flows east and northeast in the southern portion of the study area before eventually flowing into the Salinas River. This creek has been heavily impacted by

grazing. Accessible reaches generally lack extensive riparian vegetation and the channels are highly incised. Riparian vegetation consists of arroyo willows, coyote brush, and a few scattered oak trees. Several areas along Paloma Creek provide opportunities for riparian plantings and creek restoration projects, such as the stretch that crosses through Paloma Creek Park, as shown in the photos below.



Paloma Creek: Left photo taken on Atascadero Road bridge, facing south (upstream). Right photo taken on Viejo Camino bridge, facing east (downstream) along Paloma Creek Park.

Atascadero Lake

Atascadero Lake is situated approximately 1.25 miles southwest of the intersection between US 101 and SR 41. Prior to being a perennial lake, it was first a low-lying area fed by rainfall and runoff that naturally filled with water then receded during the summer heat. This natural basin was engineered into a larger lake as early as 1913 by the founder of Atascadero, E.G. Lewis. There have been recent efforts by community groups to maintain water quality and water levels in the lake. It is an important recreational area for the community and is regularly stocked with trout for recreational fishing opportunities. It supports important wetland vegetation that attracts waterfowl and other migratory bird species.



Atascadero Lake: Photos taken from deck of Pavilion, facing south (left photo) and north (right photo).

Existing Open Space Areas

The open space areas and parks within the study area are primarily focused on providing recreational opportunities for city residences. There are approximately 1,111 acres within the study area zoned open space, including approximately 180 acres of Annual Grassland, 206 acres Of Blue Oak-Foothill Pine, 168 acres of Coast Live Oak Woodland, 58 acres of Blue Oak Woodland, 27 acres of Lacustrine, and 17 acres of Mixed Chaparral. City-owned parks include Atascadero Lake Park, Colony Park, Paloma Creek Park, Sunken Gardens Park, Apple Valley Park, and Stadium Park. Non-City-owned parks include Heilmann Regional Park, Chalk Mountain Golf Course, and Faces of Freedom Veterans Memorial. Immediately west of the study area is the Los Padres National Forest. The preservation and maintenance of these parks provide important recreational opportunities for residents, along with aesthetic value and important pockets of urban wildlife habitat. For example, Atascadero Lake Park provides important stopover habitat for migrating waterfowl. In addition, the City's tree replacement program identifies receiver sites for replanting, a majority of which are outside of formal existing parklands.

5.5 Special-Status Species

Special-Status Plant Species

For the purposes of this chapter, special-status plant species are defined as the following:

Plants listed or proposed for listing as threatened or endangered under the FESA (50 CFR Section 17.12 for listed plants and various notices in the *Federal Register* for proposed species).
Plants that are candidates for possible future listing as threatened or endangered under the FESA.
Plants that meet the definitions of rare or endangered species under CEQA (State CEQA Guidelines Section 15380).
Plants considered by the CNPS to be "rare, threatened, or endangered" in California (CNPS CRPR 1A, 1B, 2A, and 2B in CNPS 2022b).
Plants listed by the CNPS as plants about which we need more information and plants of limited distribution (Ranks 3 and 4 in CNPS 2022b).
Plants listed or proposed for listing by the State of California as threatened or endangered under the CESA (14 CCR Section 670.5).
Plants listed under the NPPA (CFGC Section 1900 et seq.).
Plants considered sensitive by other Federal agencies (i.e., U.S. Forest Service, U.S. Bureau of Land Management), State and local agencies, or jurisdictions.

The background review identified the potential for 92 taxa (plants and lichen) to occur within and around the study area (see **Table 5-4**). Based on an analysis of CNDDB occurrence records and suitable vegetation and habitats within the study area, it was determined that populations of the following eight special-status plant species occur in the study area:

Santa Margarita manzanita (*Arctostaphylos pilosula*)
Mile's milk vetch (*Astragalus didymocarpus* var. *milesianus*)
La Panza mariposa-lily (*Calochortus obispoensis*)
straight-awned spineflower (*Chorizanthe rectispina*)
Eastwood's larkspur (*Delphinium parryi* ssp. *eastwoodiae*)
yellow-flowered eriastrum (*Eriastrum luteum*)

Ojai fritillary (*Fritillaria ojaiensis*)
mesa horkelia (*Horkelia cuneata* var. *puberula*).

There are also suitable habitat conditions for the following four additional special-status plant species:

Douglas' fiddleneck (*Amsinckia douglasiana*)
San Luis Obispo owls clover (*Castilleja densiflora* ssp. *obispoensis*)
Cuesta Ridge thistle (*Cirsium occidentale* var. *lucianum*)
shining navarretia (*Navarretia nigelliformis* ssp. *radians*).

Finally, there are marginal conditions present to potentially support habitat for the following 13 special-status plant species:

Hoover's bent grass (*Agrostis hooveri*)
chaparral ragwort (*Senecio aphanactis*)
Salinas milk-vetch (*Astragalus macrodon*)
dwarf calycadenia (*Calycadenia villosa*)
Palmer's spineflower (*Chorizanthe palmeri*)
paniculate tarplant (*Deinandra paniculate*)
small-flowered gypsum-loving larkspur (*Delphinium gypsophilum* ssp. *parviflorum*)
San Benito poppy (*Eschscholzia hypecoides*)
stinkbells (*Fritillaria agrestis*)
small-leaved lomatium (*Lomatium parvifolium*)
spreading navarretia (*Navarretia fossalis*)
hooked popcornflower (*Plagiobothrys uncinatus*)
chaparral ragwort (*Senecio aphanactis*)

Table 5-4: Special-Status Plant Species in the Vicinity of the Study Area

Species Name	Habitat and Distribution	Flower Season	Legal Status Federal/ State/CRPR	Rationale for Expecting Presence or Absence
Bristlecone fir *Abies bracteata*	Rocky sites in broadleaved upland forest, chaparral, lower montane coniferous forest, and riparian woodland. Elevation: 183–1,600 meters.	--	--/--/IB.3	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area does not support the appropriate topographic conditions and vegetative communities for this species.
Hoover's bent grass *Agrostis hooveri*	Sandy sites in chaparral, cismontane woodland, valley, and foothill grassland. Elevation: 60–600 meters.	April–July	--/--/1B.2	**Marginal Conditions Present; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area contains the appropriate vegetation community but lacks the necessary mesic conditions for this species.
Douglas' fiddleneck *Amsinckia douglasiana*	Cismontane woodland and valley foothill grassland. Micro habitat: Monterey shale in dry conditions. Elevation: 0–1,950 meters.	March–May	--/--/4.2	**Suitable Conditions Present; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The appropriate vegetation community and environmental conditions are present.
Oval-leaved snapdragon *Antirrhinum ovatum*	Clay or gypsum, often alkaline soils in chaparral, cismontane woodland, pinyon and juniper woodland, and valley and foothill grassland. Elevation: 200–1,000 meters	May–November	--/--/4.2	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks necessary soil conditions.

Table 5-4: Special-Status Plant Species in the Vicinity of the Study Area

Species Name	Habitat and Distribution	Flower Season	Legal Status Federal/ State/CRPR	Rationale for Expecting Presence or Absence
Santa Lucia manzanita *Arctostaphylos luciana*	Chaparral with shale outcrops. Elevation: 350–850 meters.	February–March	--/--/1B.2	**Marginal Conditions Present; Species Absent.** The CNDDB documents one occurrence within 3 miles of the study area. Marginally appropriate vegetation community is present; however, the study area is farther interior than the known range of the species.
Morro manzanita *Arctostaphylos morroensis*	Chaparral, cismontane woodland, and coastal scrub, on stabilized coastal dunes. Elevation: 5–205 meters.	December–March	FT/--/1B.1	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area does not support coastal dune scrub.
Bishop manzanita *Arctostaphylos obispoensis*	Closed-cone coniferous forest, chaparral, and cismontane woodland. Elevation: 150–980 meters.	February–June	--/--/4.3	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area does not contain ultramafic soils.
Oso manzanita *Arctostaphylos osoensis*	Chaparral and cismontane woodland (dacite porphyry buttes). Elevation: 300–500 meters.	February–March	--/--/1B.2	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks dacite outcrops.

Table 5-4: Special-Status Plant Species in the Vicinity of the Study Area

Species Name	Habitat and Distribution	Flower Season	Legal Status Federal/ State/CRPR	Rationale for Expecting Presence or Absence
Pecho manzanita *Arctostaphylos pechoensis*	Closed coniferous forest, chaparral, and coastal scrub on siliceous shale. Elevation: 125–850 meters.	November–March	--/--/1B.2	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area is farther interior than the known range of the species.
Santa Margarita manzanita *Arctostaphylos pilosula*	Closed coniferous forest, chaparral, and cismontane woodland on shale soils. Elevation: 170–1,100 meters.	December–March	--/--/1B.2	**Suitable Conditions Present; Species Present.** This species occurs in small patches of chaparral in the southwestern portion of the study area.
Dacite manzanita *Arctostaphylos tomentosa* ssp. *daciticola*	Chaparral and cismontane woodland (dacite porphyry buttes). Elevation: 100–300 meters.	March	--/--/1B.1	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks dacite outcrops.
Marsh sandwort *Arenaria paludicola*	Marshes and swamps. Grows through dense mats of *Typha*, *Juncus*, *Scirpus*, etc. in freshwater marsh. Elevation: 10–170 meters.	May–August	FE/SE/1B.1	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. Suitable wetland vegetation communities are absent.
Mile's milk vetch *Astragalus didymocarpus* var. *milesianus*	Coastal scrub on clay soils. Elevation: 20–90 meters.	March–June	--/--/1B.2	**Suitable Conditions Present; Species Present.** The CNDDB documents one occurrence in the eastern part of the study area.

Table 5-4: Special-Status Plant Species in the Vicinity of the Study Area

Species Name	Habitat and Distribution	Flower Season	Legal Status Federal/ State/CRPR	Rationale for Expecting Presence or Absence
Salinas milk-vetch *Astragalus macrodon*	Chaparral, cismontane woodland, and valley and foothill grassland. Micro habitat: sandstone, serpentinite, and shale. In openings. Elevation: 250–950 meters.	April–July	--/--/4.3	**Marginal Conditions Present; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. Marginally suitable soil types are present; however, suitable vegetation community is absent on appropriate soils.
Coulter's saltbush *Atriplex coulteri*	Coastal bluff scrub, coastal dunes, coastal scrub, and valley and foothill grassland (alkaline or clay). Elevation: 3–460 meters.	March–October	--/--/1B.2	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. Saline/alkaline soils are absent.
Club-haired mariposa lily *Calochortus clavatus* var. *clavatus*	Chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland (typically serpentinite, clay, or rocky soils). Elevation: 75–1,300 meters.	May–June	--/--/4.3	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks ultramafic soils.
San Luis mariposa-lily *Calochortus obispoensis*	Dry serpentine, generally open chaparral. Elevation: 100–500 meters.	May–June	--/--/1B.2	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks ultramafic soils.
La Panza mariposa lily *Calochortus simulans*	Chaparral, coastal scrub, and valley and foothill grassland. Often in serpentine grassland. Elevation: 75–665 meters.	May–July	--/--/1B.3	**Suitable Conditions Present; Species Present.** The CNDDB documents occurrences within 1 mile southeast of the study area and in the southwest part of the study area.

Table 5-4: Special-Status Plant Species in the Vicinity of the Study Area

Species Name	Habitat and Distribution	Flower Season	Legal Status Federal/ State/CRPR	Rationale for Expecting Presence or Absence
Dwarf calycadenia *Calycadenia villosa*	Chaparral, cismontane woodland, meadows and seeps, and valley and foothill grassland (rocky). Elevation: 240–1,350 meters.	May–October	--/--/1B.1	**Marginal Conditions Present; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. Suitable vegetation communities are present; however, suitable climactic conditions are absent.
Cambria morning-glory *Calystegia subacaulis* ssp. *episcopalis*	Grassland and rocky areas associated with chaparral and cismontane woodland. Elevation: 60–500 meters.	April–May	--/--/4.2	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks coastal grassland communities.
Hardham's evening-primrose *Camissoniopsis hardhamiae*	Annual herb. Sandy, decomposed carbonate soils. Especially in disturbed or burned areas among chaparral and cismontane woodland. Elevation: 140–945 meters.	March–May	--/--/1B.2	**Suitable Conditions Absent; Species Absent.** The CNDDB documents occurrences within 3 miles to the southeast of the study area; however, the study area lacks necessary limestone soils.
San Luis Obispo sedge *Carex obispoensis*	Closed-cone coniferous forests, chaparral, coastal prairie, coastal scrub, and valley and foothill grassland. Usually adjacent to seeps, springs, stream sides or other water source with sand, clay, or serpentine. Elevation: 5–790 meters.	April–June	--/--/1B.2	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks ultramafic soils.

Table 5-4: Special-Status Plant Species in the Vicinity of the Study Area

Species Name	Habitat and Distribution	Flower Season	Legal Status Federal/ State/CRPR	Rationale for Expecting Presence or Absence
San Luis Obispo owls clover *Castilleja densiflora* ssp. *obispoensis*	Valley and foothill grassland. Elevation: 0–215 meters.	March–May	--/--/1B.2	**Marginal Conditions Present; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area supports appropriate vegetation communities; however, these communities may be too dry.
California jewelflower *Caulanthus californicus*	Sandy sites in chenopod scrub, pinyon and juniper woodland, and valley and foothill grassland. Elevation: 61–1,000 meters.	February–May	FE/SE/1B.1	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks appropriate vegetation communities and environmental conditions.
Lemmon's jewelflower *Caulanthus lemmonii*	Pinyon and juniper woodland and valley and foothill grassland. Elevation: 80–1,220 meters	March–May	--/--/1B.2	**Marginal Conditions Present; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. Suitable grassland habitat present; however, the study area is outside of the known range of the species.
San Luis Obispo ceanothus *Ceanothus thyrsiflorus* var. *obispoensis*	Perennial shrub. Dacite soils among chaparral and cismontane woodland. Currently only known from Morro Bay area. Elevation: 140–225 meters	June	--/--/1B.1	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks dacite outcrops.

Table 5-4: Special-Status Plant Species in the Vicinity of the Study Area

Species Name	Habitat and Distribution	Flower Season	Legal Status Federal/ State/CRPR	Rationale for Expecting Presence or Absence
Congdon's tarplant *Centromadia parryi* ssp. *congdonii*	Depressional areas with clay soil and valley and foothill grassland. Elevation: 1–230 meters.	May–November	--/--/1B.1	**Marginal Conditions Present; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The appropriate vegetation community is present; however, appropriate soils within the vegetation community are absent.
Coastal goosefoot *Chenopodium littoreum*	Coastal dunes. Elevation: 10–30 meters.	April–August	--/--/1B.2	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks coastal dunes.
Dwarf soaproot *Chlorogalum pomeridianum* var. *minus*	Chaparral habitats with serpentine soils. Elevation: 305–1,000 meters.	May–August	--/--/1B.2	**Marginal Conditions Present; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. Chaparral is present within the study area; however, the study area lacks ultramafic soils.
Purple amole *Chlorogalum purpureum*	Gravelly and clay sites in chaparral, cismontane woodland, and valley and foothill grassland. Elevation: 205–385 meters.	April–June	FT/--/1B.1	**Marginal Conditions Present; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The grassland habitats in the study area lack the necessary soil.

Table 5-4: Special-Status Plant Species in the Vicinity of the Study Area

Species Name	Habitat and Distribution	Flower Season	Legal Status Federal/ State/CRPR	Rationale for Expecting Presence or Absence
Point Reyes salty birds-beak *Chloropyron maritimum ssp. palustre*	Annual herb (hemiparasitic) that occurs in marshes and swamps (coastal salt). Elevation: 0–10 meters.	June–October	--/--/1B.2	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks coastal salt marshes.
Salt marsh bird's beak *Chloropyron maritimum* ssp. *maritimum*	Coastal dunes, marshes, and swamps. Elevation: 0–30 meters.	May–October	FE/SE/1B.2	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks coastal salt marshes.
Irish Hills spineflower *Chorizanthe aphanantha*	Annual herb. Observed in Irish Hills area of San Luis Obispo County. Reportedly occurs in chaparral, foothill woodland, coastal sage scrub, and closed-cone pine forest; however, little is known about species.	April–August	--/--/1B.1	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks ultramafic soils.
Brewer's spineflower *Chorizanthe breweri*	Chaparral, cismontane woodland, coastal scrub, closed-cone coniferous forest; rocky or gravelly serpentine sites; usually in barren areas. Elevation: 45–800 meters.	May–August	--/--/1B.3	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks ultramafic soils.
Douglas' spineflower *Chorizanthe douglasii*	Chaparral, cismontane woodland, coastal scrub, and lower montane coniferous forest. Elevation: 55–1,600 meters.	April–July	--/--/--4.3	**Suitable Conditions Present; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area.

Table 5-4: Special-Status Plant Species in the Vicinity of the Study Area

Species Name	Habitat and Distribution	Flower Season	Legal Status Federal/ State/CRPR	Rationale for Expecting Presence or Absence
Palmer's spineflower *Chorizanthe palmeri*	Chaparral, cismontane woodlands, and valley and foothill grassland (serpentinite). Elevation: 60–700 meters.	April–August	--/--/4.2	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks ultramafic soils.
Straight-awned spineflower *Chorizanthe rectispina*	Chaparral, cismontane woodland, and coastal scrub. Often on granite in chaparral. Elevation: 355–1,035 meters.	April–July	--/--/1B.2	**Suitable Conditions Present; Species Present.** The CNDDB documents one occurrence in chaparral in the southwestern portion of the study area.
Chorro Creek bog thistle *Cirsium fontinale* var. *obispoense*	Chaparral, cismontane woodlands; serpentine seeps or bogs. Elevation: 35–380 meters.	February–September	FE/SE/1B.2	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks serpentine seeps.
Cuesta Ridge thistle *Cirsium occidentale* var. *lucianum*	Chaparral (openings) on serpentinite, often on steep rocky slopes and disturbed roadsides. Elevation: 500–750 meters.	April–June	--/--/1B.2	**Marginal Conditions Present; Species Absent.** The CNDDB documents one occurrence to the southwest within 3 miles of the study area. The study area lacks serpentinite.
Popcorn lichen *Cladonia firma*	Coastal dunes and coastal scrub (soil, detritus and moss). No blooming period. Elevation: 30–75 meters.	N/A	--/--/2B.1	**Suitable Conditions Absent; Species Absent.** The study area lacks coastal dunes.

Table 5-4: Special-Status Plant Species in the Vicinity of the Study Area

Species Name	Habitat and Distribution	Flower Season	Legal Status Federal/ State/CRPR	Rationale for Expecting Presence or Absence
Pismo clarkia *Clarkia speciosa* ssp. *immaculata*	Sandy soils, openings in chaparral, cismontane woodland, and valley and foothill grassland. On ancient sand dunes not far from coast. Elevation: 25–185 meters.	May–July	FE/SR/1B.1	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks ancient dunes and is too far removed from the coast.
Paniculate tarplant *Deinandra paniculata*	Coastal scrub, valley and foothill grassland, and vernal pools. Micro habitats: sometimes sandy, but usually vernally mesic. Elevation: 25–940 meters	(March) April–November	--/--/4.2	**Marginal Conditions Present; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks vernal pools.
Small-flowered gypsum-loving larkspur *Delphinium gypsophilum ssp. parviflorum*	Rocky, clay, and serpentinite soils in cismontane woodland and valley and foothill grassland. Elevation: 190–350 meters.	March–June	--/--/3.2	**Marginal Conditions Present; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The appropriate vegetation community is present; however, appropriate soils are absent.
Dune larkspur *Delphinium parryi ssp. blochmaniae*	Maritime chaparral and coastal dunes with sandy or rocky soils. Elevation: 0–200 meters.	April–May	--/--/1B.2	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks maritime chaparral and coastal dunes.

Table 5-4: Special-Status Plant Species in the Vicinity of the Study Area

Species Name	Habitat and Distribution	Flower Season	Legal Status Federal/ State/CRPR	Rationale for Expecting Presence or Absence
Eastwood's larkspur *Delphinium parryi* ssp. *eastwoodiae*	Chaparral and valley and foothill grassland (serpentinite, coastal). Elevation: 75–500 meters.	February–March	--/--/1B.2	**Marginal Conditions Present; Species Present.** The CNDDB documents one occurrence in the center of the study area. The study area contains the appropriate vegetation but lacks ultramafic soils.
Umbrella larkspur *Delphinium umbraculorum*	Perennial herb. Occurs in cismontane woodland. Elevation: 400–1,600 meters.	April–June	--/--/1B.3	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks the required mesic conditions.
Beach spectaclepod *Dithyrea maritima*	Coastal dunes, seashores, and sandy places with coastal scrub. Elevation: 3–50 meters.	March–May	--/ST/1B.1	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks coastal dune habitat.
Betty's dudleya *Dudleya abramsii* ssp. *bettinae*	Coastal scrub, valley and foothill grassland, and chaparral; rocky barren serpentine exposures. Elevation: 20–180 meters.	May–July	--/--/1B.2	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks ultramafic soils.
Mouse-gray dudleya *Dudleya abramsii* ssp. *murina*	Serpentine outcrops in chaparral and cismontane woodland. Elevation: 90–300 meters.	May–June	--/--/1B.3	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks ultramafic soils.

Table 5-4: Special-Status Plant Species in the Vicinity of the Study Area

Species Name	Habitat and Distribution	Flower Season	Legal Status Federal/ State/CRPR	Rationale for Expecting Presence or Absence
Yellow-flowered eriastrum *Eriastrum luteum*	Bare sandy decomposed granite slopes in broadleaved upland forest, chaparral, and cismontane woodland. Elevation: 240–580 meters.	May–June	--/--/1B.2	**Suitable Conditions Present; Species Present.** The CNDDB documents one occurrence in the center of the study area.
Blochman's leafy daisy *Erigeron blochmaniae*	Coastal scrub and coastal dunes. Elevation: 0–185 meters.	July–October	--/--/1B.2	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks coastal dune habitat.
Indian Knob mountainbalm *Eriodictyon altissimum*	Ridges in open, disturbed areas within chaparral on Pismo sandstone. Elevation: 95–245 meters.	March–June	FE/SE/1B.1	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks appropriate soil/vegetation community.
Hoover's button-celery *Eryngium aristulatum* var. *hooveri*	Alkaline depressions, vernal pools, roadside ditches, and other wet places near the coast. Elevation: 1–50 meters.	July	--/--/1B.1	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks vernal pools.
Irish Hills monkeyflower *Erythranthe serpentinicola*	Rocky, mesic openings in serpentine chaparral. Elevation: 60–360 meters.	Unknown	--/--/1B.1	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks ultramafic soils.

Table 5-4: Special-Status Plant Species in the Vicinity of the Study Area

Species Name	Habitat and Distribution	Flower Season	Legal Status Federal/ State/CRPR	Rationale for Expecting Presence or Absence
San Benito poppy Eschscholzia hypecoides	Chaparral, cismontane woodland, and valley and foothill grasslands on clayey serpentinite soils. Elevation: 200–1,500 meters.	March–June	--/--/4.3	**Marginal Conditions Present; Species Absent.** The study area lacks ultramafic soils.
San Joaquin spearscale *Extriplex joaquinana*	Seasonal alkali wetlands or alkali sink scrub. Elevation: 0–800 meters.	April–September	--/--/1B.2	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks alkali wetlands.
Stinkbells *Fritillaria agrestis*	Vertic clayey soils in chaparral, cismontane woodland, and valley and foothill grasslands. Elevation: 10–1,555 meters.	March–June	--/--/4.2	**Marginal Conditions Present; Species Absent.** The CNNDB does not document any occurrences within 3 miles of the study area. The soil types may not be ideal.
Ojai fritillary *Fritillaria ojaiensis*	Rocky sites in chaparral, broadleaved upland forest, lower montane coniferous forests, and cismontane woodland, sometimes roadsides. Elevation: 95–1,140 meters.	February–May	--/--/1B.2	**Suitable Conditions Present; Species Present.** The CNDDB documents one occurrence in the chapparal in the southwestern portion of the study area.
Mesa horkelia *Horkelia cuneata* var. *puberula*	Sandy or gravelly sites in chaparral, cismontane woodland, or coastal scrub. Elevation: 15–1,645 meters.	March–July	--/--/1B.1	**Marginal Conditions Present; Species Present**. The CNDDB documents one occurrence in the center of the study area, which was slightly outside of the known range of the species.

Table 5-4: Special-Status Plant Species in the Vicinity of the Study Area

Species Name	Habitat and Distribution	Flower Season	Legal Status Federal/ State/CRPR	Rationale for Expecting Presence or Absence
Kellogg's horkelia *Horkelia cuneata* var. *sericea*	Sandy or gravelly soils in openings in closed-cone coniferous forest, coastal scrub, coastal dunes, and chaparral. Elevation: 5–430 meters.	April–August	--/--/1B.1	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks mesic coastal conditions.
Santa Lucia dwarf rush *Juncus luciensis*	Wet and sandy soils in vernal pools, ephemeral drainages, wet meadows, and streamsides. Elevation: 280–2,035 meters.	April–August (fruiting time)	--/--/1B.2	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks mesic conditions and vernal pools.
Perennial goldfields *Lasthenia californica* ssp. *macrantha*	Coastal bluff scrub, coastal dunes, and coastal scrub. Elevation: 5–185 meters.	May–August	--/--/1B.2	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks coastal dune habitat.
Coulter's goldfields *Lasthenia glabrata* ssp. *coulteri*	Alkaline soils in playas, sinks, and grasslands. Elevation: 1–1,375 meters.	April–May	--/--/1B.1	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks alkaline conditions.
Salinas valley goldfields *Lasthenia leptalea*	Openings in cismontane woodland and valley and foothill grasslands. Elevation: 60–1,065 meters.	February–May	--/--/4.3	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area outside of species' range.

Table 5-4: Special-Status Plant Species in the Vicinity of the Study Area

Species Name	Habitat and Distribution	Flower Season	Legal Status Federal/ State/CRPR	Rationale for Expecting Presence or Absence
Jones' layia *Layia jonesii*	Clay soils and serpentine outcrops in chaparral and foothill grassland. Elevation: 5–245 meters.	March–May	--/--/1B.2	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks ultramafic soils.
Jared's pepper-grass *Lepidium jaredii* ssp. *jaredii*	Alkali flats and sinks with sandy, alkaline soils in foothill grasslands. Elevation: 335–1,005 meters.	March–April	--/--/1B.2	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks alkaline conditions.
Blochman's leafy daisy *Erigeron blochmaniae*	Coastal scrub and coastal dunes. Elevation: 0–185 meters.	July–October	--/--/1B.2	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks coastal dune habitat.
Indian Knob mountainbalm *Eriodictyon altissimum*	Ridges in open, disturbed areas within chaparral on Pismo sandstone. Elevation: 95–245 meters.	March–June	FE/SE/1B.1	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks the appropriate soil/vegetation community.
Hoover's button-celery *Eryngium aristulatum* var. *hooveri*	Alkaline depressions, vernal pools, roadside ditches, and other wet places near coast. Elevation: 1–50 meters.	July	--/--/1B.1	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks vernal pools.

Table 5-4: Special-Status Plant Species in the Vicinity of the Study Area

Species Name	Habitat and Distribution	Flower Season	Legal Status Federal/ State/CRPR	Rationale for Expecting Presence or Absence
Irish Hills monkeyflower *Erythranthe serpentinicola*	Rocky, mesic openings in serpentine chaparral. Elevation: 60–360 meters.	Unknown	--/--/1B.1	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks ultramafic soils.
San Benito poppy *Eschscholzia hypecoides*	Chaparral, cismontane woodland, and valley and foothill grasslands on clayey serpentinite soils. Elevation: 200–1,500 meters.	March–June	--/--/4.3	**Marginal Conditions Present; Species Absent.** The study area lacks ultramafic soils.
San Joaquin spearscale *Extriplex joaquinana*	Occurs in seasonal alkali wetlands or alkali sink scrub. Elevation: 0–800 meters.	April–September	--/--/1B.2	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks alkali wetlands.
Stinkbells *Fritillaria agrestis*	Vertic clayey soils in chaparral, cismontane woodland, and valley and foothill grasslands. Elevation: 10–1,555 meters.	March–June	--/--/4.2	**Marginal Conditions Present; Species Absent.** The CNNDB does not document any occurrences within 3 miles of the study area. The soil types may not be ideal.
Ojai fritillary *Fritillaria ojaiensis*	Rocky sites in chaparral, broadleaved upland forest, lower montane coniferous forests, and cismontane woodland, sometimes roadsides. Elevation: 95–1,140 meters.	February–May	--/--/1B.2	**Suitable Conditions Present; Species Present.** The CNDDB documents one occurrence in the chapparal in the southwestern portion of the study area.

Table 5-4: Special-Status Plant Species in the Vicinity of the Study Area

Species Name	Habitat and Distribution	Flower Season	Legal Status Federal/ State/CRPR	Rationale for Expecting Presence or Absence
Mesa horkelia *Horkelia cuneata* var. *puberula*	Sandy or gravelly sites in chaparral, cismontane woodland, or coastal scrub. Elevation: 15–1,645 meters.	March–July	--/--/1B.1	**Marginal Conditions Present; Species Present.** The CNDDB documents one occurrence in the center of the study area, which is slightly outside of the known range of the species.
Kellogg's horkelia *Horkelia cuneata* var. *sericea*	Sandy or gravelly soils in openings in closed-cone coniferous forest, coastal scrub, coastal dunes, and chaparral. Elevation: 5–430 meters.	April–August	--/--/1B.1	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks mesic coastal conditions.
Santa Lucia dwarf rush *Juncus luciensis*	Wet and sandy soils in vernal pools, ephemeral drainages, wet meadows, and streamsides. Elevation: 280–2,035 meters.	April–August (fruiting time)	--/--/1B.2	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks mesic conditions and vernal pools.
Perennial goldfields *Lasthenia californica* ssp. *macrantha*	Coastal bluff scrub, coastal dunes, and coastal scrub. Elevation: 5–185 meters.	May–August	--/--/1B.2	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks coastal dune habitat.
Coulter's goldfields *Lasthenia glabrata* ssp. *coulteri*	Alkaline soils in playas, sinks, and grasslands. Elevation: 1–1,375 meters.	April–May	--/--/1B.1	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks alkaline conditions.

Table 5-4: Special-Status Plant Species in the Vicinity of the Study Area

Species Name	Habitat and Distribution	Flower Season	Legal Status Federal/ State/CRPR	Rationale for Expecting Presence or Absence
Salinas valley goldfields *Lasthenia leptalea*	Openings in cismontane woodland and valley and foothill grasslands. Elevation: 60–1,065 meters.	February–May	--/--/4.3	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area is outside the known range of the species.
Jones' layia *Layia jonesii*	Clay soils and serpentine outcrops in chaparral and foothill grassland. Elevation: 5–245 meters.	March–May	--/--/1B.2	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks ultramafic soils.
Jared's pepper-grass *Lepidium jaredii* ssp. *jaredii*	Alkali flats and sinks with sandy, alkaline soils in foothill grasslands. Elevation: 335–1005 meters.	March–April	--/--/1B.2	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks alkaline conditions.
Small-leaved lomatium *Lomatium parvifolium*	Serpentine in chaparral, closed-cone coniferous forest, coastal scrub, and riparian woodland. Elevation: 20–700 meters.	February–May	--/--/4.2	**Marginal Conditions Present; Species Absent.** The appropriate vegetation community is present; however, ultramafic soils are absent.
San Luis Obispo County lupine *Lupinus ludovicianus*	Open areas on sandy soils in chaparral and cismontane woodland. Elevation: 85–525 meters.	April–July	--/--/1B.2	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area is outside the known range of the species.

Table 5-4: Special-Status Plant Species in the Vicinity of the Study Area

Species Name	Habitat and Distribution	Flower Season	Legal Status Federal/ State/CRPR	Rationale for Expecting Presence or Absence
Jones' bush-mallow *Malacothamnus jonesii*	Open chaparral and cismontane woodlands. Elevation: 160–1,075 meters	April–October	--/--/4.2	**Marginal Conditions Present; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The chaparral within the study area is likely too dense/closed.
Santa Lucia bush-mallow *Malacothamnus palmeri* var. *palmeri*	Dry, rocky, chaparral slopes near the summit. Elevation: 3–670 meters.	May–July	--/--/1B.2	**Marginal Conditions Present; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The chaparral within the study area is likely too dense/closed.
Oregon meconella *Meconella oregana*	Open, moist places in coastal prairie and coastal scrub. Elevation: 60–640 meters.	March–May	--/--/1B.1	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks coastal conditions.
Palmer's monardella *Monardella palmeri*	Serpentine in cismontane woodlands and chaparral. Elevation: 90–945 meters.	June–August	--/--/1B.2	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks ultramafic soils.
Southern curly-leaved monardella *Monardella sinuata* ssp. *sinuata*	Sandy soils in coastal dunes, coastal scrub, chaparral, and cismontane woodland. Elevation: 20–305 meters	April–September	--/--/1B.2	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks coastal conditions.

Table 5-4: Special-Status Plant Species in the Vicinity of the Study Area

Species Name	Habitat and Distribution	Flower Season	Legal Status Federal/ State/CRPR	Rationale for Expecting Presence or Absence
Woodland woollythreads *Monolopia gracilens*	Sandy and rocky soils on grassy sites or in openings in chaparral and cismontane woodland. Occasionally on serpentine. Elevation: 120–975 meters.	March–July	--/--/1B.2	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks suitable soil conditions.
Aparejo grass *Muhlenbergia utilis*	Alkaline or serpentine meadows, seeps, marshes, swamps, and mesic sites in chaparral, coastal scrub, and cismontane woodland. Elevation: 25–2,325 meters.	October–March	--/--/2B.2	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks mesic conditions.
Spreading navarretia *Navarretia fossalis*	Vernal pools and ditches. Elevation: 15–850 meters.	April–June	FT/--/1B.1	**Marginal Conditions Present; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area is outside the known range of the species.
Shining navarretia *Navarretia nigelliformis* ssp. *radians*	Clay depressions in cismontane woodland, valley and foothill grasslands, and vernal pools. Elevation: 60–975 meters.	May–July	--/--/1B.2	**Suitable Conditions Present; Species Absent.** The CNDDB documents several occurrences within 3 miles of the study area. Focused surveys are needed.
Coast woolly-heads *Nemacaulis denudata* var. *denudata*	Coastal dunes. Elevation: 0–5 meters.	March–August	--/--/1B.2	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks coastal dune habitat.

Table 5-4: Special-Status Plant Species in the Vicinity of the Study Area

Species Name	Habitat and Distribution	Flower Season	Legal Status Federal/ State/CRPR	Rationale for Expecting Presence or Absence
Hooked popcornflower *Plagiobothrys uncinatus*	Burned and disturbed sites on sandstone outcrops and canyon sides in chaparral, cismontane woodland, and grasslands. Elevation: 210–855 meters.	April–May	--/--/1B.2	**Marginal Conditions Present; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The habitat conditions are suitable, but the study area lacks the necessary disturbance history.
Diablo Canyon blue grass *Poa diaboli*	Shale soils in chaparral, cismontane woodland, and coastal scrub, sometimes burned areas. Elevation: 115–400 meters.	March–April	--/--/1B.2	**Marginal Conditions Present; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The habitat conditions are suitable, but the study area lacks the necessary disturbance history.
Adobe sanicle *Sanicula maritima*	Moist clay or ultramafic soils in meadows, seeps, grasslands, chaparral, and coastal prairie. Elevation: 0–75 meters.	April–May	--/SR/1B.1	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks ultramafic soil.
Chaparral ragwort *Senecio aphanactis*	Drying alkaline flats in chaparral, cismontane woodland, and coastal scrub. Elevation: 20–1,020 meters.	February–May	--/--/2B.2	**Marginal Conditions Present; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. Suitable habitat is present; however, the habitat lacks alkaline conditions.

Table 5-4: Special-Status Plant Species in the Vicinity of the Study Area

Species Name	Habitat and Distribution	Flower Season	Legal Status Federal/ State/CRPR	Rationale for Expecting Presence or Absence
San Gabriel ragwort *Senecio astephanus*	Steep rocky slopes in chaparral, coastal sage scrub, and oak woodlands. Elevation: 400–1,500 meters.	April–June	--/--/4.3	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks the necessary topography.
Cuesta Pass checkerbloom *Sidalcea hickmanii* ssp. *anomala*	Rocky serpentine soil in closed-cone coniferous forests and chaparral. Elevation: 600–800 meters.	May–June	--/SR/1B.2	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks ultramafic soils and disturbance history.
Most beautiful jewelflower *Streptanthus albidus* ssp. *peramoenus*	Serpentine outcrops on ridges and slopes in chaparral, grassland, and cismontane woodland. Elevation: 90–1,040 meters.	April–June	--/--/1B.2	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks ultramafic soils.
California seablite *Suaeda californica*	Margins of coastal saltmarshes. Elevation: 0–5 meters.	July–October	FE/--/1B.1	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks coastal saltmarsh habitat.
Splitting yarn lichen *Sulcaria isidiifera*	Old-growth shrubs and oaks in coastal scrub. Elevation: 20–55 meters.	N/A	--/--/1B.1	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. Study area lacks coastal scrub habitat.

Table 5-4: Special-Status Plant Species in the Vicinity of the Study Area

Species Name	Habitat and Distribution	Flower Season	Legal Status Federal/ State/CRPR	Rationale for Expecting Presence or Absence
Twisted horsehair lichen *Sulcaria spiralifera*	Conifers in coastal scrub. Elevation: 0–90 meters.	N/A	--/--/1B.2	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks coastal scrub habitat.
Saline clover *Trifolium hyrophylum*	Mesic and alkaline sites in marshes and swamps, grasslands, and vernal pools. Elevation: 1–335 meters.	April–June	--/--/1B.2	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks mesic alkaline sites.
Caper-fruited tropidocarpum *Tropidicarpum capparideum*	Alkaline clay in valley and foothill woodlands. Elevation: 0–360 meters.	March–April	--/--/1B.1	**Suitable Conditions Absent; Species Absent.** The CNDDB does not document any occurrences within 3 miles of the study area. The study area lacks alkaline conditions.

Status Codes:
-- = no status
Federal: FE = Federally Endangered; FT = Federally Threatened
State: SE = State Endangered; ST= State Threatened; SR= State Rare
California Native Plant Society (CNPS):
Rank 1B = rare, threatened, or endangered in California and elsewhere.
Rank 2 = rare, threatened, or endangered in California, but more common elsewhere.
Rank 3 = plants that about which more information is needed.
Rank 4 = a watch list plants of limited distribution.
CBR = Considered but rejected

Threat Code:
_.1 = Seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat)
_.2 = Fairly endangered in California (20%–80% occurrences threatened)
_.3 = Not very endangered in California (<20% of occurrences threatened or no current threats known)

Rationale Terms:
Species Present: Species was or has been observed in the survey area.
Suitable Conditions Present: The appropriate habitat, soils, and elevation are present in the survey area.
Marginal Conditions Present: The appropriate habitat and/or soils are present, but other factors (past disturbances, elevation range) may preclude species occurrence.

Note(s):
1 All plant descriptions paraphrased from CNPS (2022a).
2 Suitable Conditions Absent: The survey area does not support the appropriate habitat, soils, and/or elevation for the species.
Source(s): Baldwin et al. (2012)

Special-Status Animal Species

For the purposes of this chapter, special-status animal species are defined as the following:

Animals listed or proposed for listing as threatened or endangered under the FESA (50 CFR 17.11 for listed animals and various notices in the *Federal Register* for proposed species).
Animals that are candidates for possible future listing as threatened or endangered under the FESA.
Animals that meet the definitions of rare or endangered species under CEQA (State CEQA Guidelines Section 15380).
Animals listed or proposed for listing by the State of California as threatened and endangered under the CESA (14 CCR 670.5).
Animal species considered by the State of California/CDFW to be California Species of Special Concern (SSC) or included on CDFW's Watch List (WL) (CDFW 2022a).
Animal species that are fully protected in California (CFGC Sections 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians]).

The background review identified the potential for 53 special-status animal species to occur within and around the study area (see **Table 5-5**). There are CNDDB occurrences in the study area for the following nine special-status animal species;

obscure bumble bee (*Bombus caliginosus*)
crotch bumble bee (*Bombus crotchii*)
Atascadero June beetle (*Polyphylla nubile*)
coast range newt (*Taricha torosa*)
California red-legged frog (*Rana draytonii*)
northern California legless lizard (*Anniella pulchra*)
western pond turtle (*Emys marmoratal*)
purple martin (*Progne subis*)
golden eagle (*Aquila chrysaetos*)

There are suitable habitat conditions present, and the study area is within the range of the following 16 additional special-status animal species:

monarch butterfly (*Danaus plexippus*)
San Luis Obispo pyrg (*Pyrgulopsis taylori*)
lesser slender salamander (*Batrachoseps minor*)
Cooper's hawk (*Accipiter cooperii*)
grasshopper sparrow (*Ammodramus savannarum*)
ferruginous hawk (*Buteo regalis*)
white-tailed kite (*Elanus leucurus*)
California horned lark (*Eremophila alpestris actia*)
prairie falcon(*Falco mexicanus*)
bald eagle (*Haliaeetus leucocephalus*)
loggerhead shrike (*Lanius ludovicianus*)
pallid bat (*Antrozous pallidus*)
Townsends big-eared bat (*Corynorhinus townsendii*)
western mastiff bat (*Eumops perotis*)
Monterey dusky-footed woodrat (*Neotoma macrotis Luciana*)
American badger (*Taxidea taxus*)

Suitable habitat conditions are present in the study area for South-Central California coast steelhead Distinct Population Segment (DPS) (*Oncorhynchus mykiss irideus* pop. 9), foothill yellow-legged frog south coast DPS (*Rana boylii* pop. 6), yellow warbler (*Setophaga petechia*), and Least Bell's vireo (*Vireo bellii pusillus*); however, their populations have been extirpated from the area.

Table 5-5: Special-Status Wildlife Species in the Vicinity of the Study Area

Species Name	Habitat and Distribution	Legal Status Federal/State/ CDFW	Rationale for Expecting Presence or Absence
Brachiopods			
Vernal pool fairy shrimp *Branchinecta lynchi*	Vernal pool habitats, including depressions in sandstone, to small swale, earth slump, or basalt-flow depressions with a grassy or, occasionally, muddy bottom in grassland.	FT/--/--	**Suitable Conditions Absent.** No suitable vernal pool habitat occurs in the study area.
California linderiella *Linderiella occidentalis*	Seasonal ponds in grasslands, sandstone depressions, and alluvial flats with hardpan beneath.	--/--/SA	**Suitable Conditions Absent.** No suitable vernal pool habitat occurs in the study area.
Fish			
Tidewater goby *Eucyclogobius newberryi*	Brackish shallow lagoons and lower stream reaches where water is still, but not stagnant.	FE/--/--	**Suitable Conditions Absent.** No suitable brackish shallow lagoons and lower stream reaches occurs in the study area.
South-Central California Coast steelhead DPS *Oncorhynchus mykiss irideus* pop. 9	Clear, cool water with abundant in-stream cover, well-vegetated stream margins, relatively stable water flow, and a 1:1 pool-to-riffle ratio.	FT, CH/--/SSC	**Suitable Conditions Present; Species Absent.** The Salinas River, Graves Creek, Atascadero Creek, and Paloma Creek historically supported steelhead; however, now the only CNDDB occurrence (#4) of steelhead in the Salinas River Watershed was recorded in Arroyo Seco and its tributaries. This occurrence is approximately 60 miles north of the study area and may be the only remaining remnants of steelhead in the Salinas River watershed (CNDDB 2022).

Table 5-5: Special-Status Wildlife Species in the Vicinity of the Study Area

Species Name	Habitat and Distribution	Legal Status Federal/State/ CDFW	Rationale for Expecting Presence or Absence
Critical Habitat - South-Central California Coast steelhead DPS *Oncorhynchus mykiss irideus* pop. 9	Critical habitat includes stream channels within designated stream reaches and includes lateral extent as defined by ordinary high-water line (33 CFR 329.11).	CH/--/--	**Present.** The Salinas River, Graves Creek, and Atascadero Creek are designated as critical habitat for South-Central California Coast steelhead DPS and falls within the Paso Robles Hydrologic Subarea 330981, which is part of the larger Salinas Hydrologic Unit 3309 (NOAA Fisheries 2005).
Invertebrates			
Obscure bumble bee *Bombus caliginosus*	Open grassy coastal prairies and Coast Range meadows. Nests underground and aboveground in abandoned bird nests.	--/--/SA	**Suitable Conditions Present.** The areas of lower-density oak savanna, annual grassland, mixed chaparral, and coastal sage scrub habitats in the study area provide suitable habitat conditions for this species.
Crotch bumble bee *Bombus crotchii*	Grassland and scrub habitats in California, Nevada, and Baja California. Feeds on milkweeds, dusty maidens, lupines, medics, phacelias, and sages.	--/-CE/SA	**Suitable Conditions Present.** The areas of lower-density oak savanna, annual grassland, mixed chaparral, and coastal sage scrub habitats in the study area provide suitable habitat conditions for this species. There are two historic (1959 and 1968) CNDDB occurrences (#79 and #80) mapped in the general vicinity of Atascadero. One is in the city center, and one is 3 miles southwest of Atascadero. Very little is known about this species, and it is likely present in the study area.
Sandy beach tiger beetle *Cicindela hirticollis gravida*	Areas adjacent to non-brackish water along the California coast to Mexico; inhabits sand in upper zone; larvae found in moist sand.	--/--/SA	**Suitable Conditions Absent.** The coastal habitat and soils necessary to support this species do not occur in the study area.

Table 5-5: Special-Status Wildlife Species in the Vicinity of the Study Area

Species Name	Habitat and Distribution	Legal Status Federal/State/ CDFW	Rationale for Expecting Presence or Absence
Globose Dune beetle *Coelus globosus*	Coastal sand dune habitat.	--/--/SA	**Suitable Conditions Absent.** The coastal sand dune habitat necessary to support this species does not occur in the study area.
Monarch butterfly *Danaus plexippus*	Along coast from northern Mendocino to Baja California, Mexico. Winter roosts in wind-protected tree groves (eucalyptus, Monterey pine and cypress), with nectar and water sources nearby.	FC/--/SA	**Suitable Conditions Present; Species Present, Winter Roosting Likely Absent.** The study area contains suitable tree groves and nectar sources to support adults and larval butterflies; however, it is outside of the coastal range for winter roost sites.
Morro Bay blue butterfly *Icaricia icarioides moroensis*	Stabilized dunes and adjacent areas of coastal San Luis Obispo and Santa Barbara Counties; (Lupinus chamissonis) is larval food plant.	--/--/SA	**Suitable Conditions Absent.** The coastal sand dune habitat necessary to support this species was not observed within the study area.
Atascadero June beetle *Polyphylla nubila*	Very little is known about this species. It is only known from sand dunes in San Luis Obispo County.	--/--/SA	**Suitable Conditions Present; Species Present.** Very little is known about the distribution of this species. There are two CNDDB occurrence records in the study area—one record is near the Salinas River (#4) from 1991 and one is a historic (1946) museum record with the general location of Atascadero (#2). Both occurrences were found near light sources.
Gastropods			
Morro shoulderband snail *Helminthoglypta walkeriana*	Restricted to coastal strand in Los Osos and immediate vicinity of Morro Bay; inhabits duff beneath *Salvia*, *Carpobrotus*, and *Ericameria*.	FT/--/--	**Suitable Conditions Absent; Species Absent.** The study area is located outside of the known range of the species.

Table 5-5: Special-Status Wildlife Species in the Vicinity of the Study Area

Species Name	Habitat and Distribution	Legal Status Federal/State/ CDFW	Rationale for Expecting Presence or Absence
San Luis Obispo pyrg *Pyrgulopsis taylori*	Freshwater habitats in San Luis Obispo County.	--/--/SA	**Suitable Conditions Present.** Suitable aquatic habitat could potentially occur in the study area. Very little is known about the habitat requirements and distribution of the species.
mimic tyronia (California brackishwater snail) *Tryonia imitator*	Aquatic habitats, including brackish marsh, estuary, lagoon, marsh and swamp, salt marsh, and wetland.	--/--/SA	**Suitable Conditions Absent.** The study area does not contain brackish marsh, estuary, or saltmarsh wetlands.
Amphibians			
California tiger salamander *Ambystoma californiense*	Vacant or mammal-occupied burrows and other underground retreats throughout most of year in grassland, savanna, or open woodland habitats. Requires shallow ephemeral or semi-permanent pools and ponds for breeding sites.	FT, CH/ST/WL	**Suitable Conditions Present; Species Absent.** Although the grassland, savanna, or open woodland habitats in the study area appear to provide suitable habitat for the species, the study area falls outside of the known range of the species. The closest known occurrences are along the southern edge of San Luis Obispo County.
Lesser slender salamander *Batrachoseps minor*	Small and thin salamander. Moist wooded areas; restricted to small range in Santa Lucia Mountains of San Luis Obispo County. All occurrences documented above 1,300 feet (400 meters) in mixed oak woodland, tanbark oak forest, sycamore woodland, and California bay forest (California Herps 2022).	--/--/SSC	**Suitable Conditions Present.** Only a small portion of the study area, along the western edge adjacent to Falcon Road, falls within the Santa Lucia Mountain range that may overlap the restricted range of this species. However, this area falls within an unincorporated portion and is not likely to be impacted.

Table 5-5: Special-Status Wildlife Species in the Vicinity of the Study Area

Species Name	Habitat and Distribution	Legal Status Federal/State/ CDFW	Rationale for Expecting Presence or Absence
Foothill yellow-legged frog south coast DPS *Rana boylii* pop. 6	Frequently occurs in rocky streams and rivers with open sunny banks. Occasionally found in pools, vegetated backwaters, and deep shaded spring fed pools. Sea level to 6,700 feet.	PE/SE/SSC	**Suitable Conditions Present; Species Absent.** An extirpated CNDDB occurrence (#41) was recorded south of the study area with a location reference of Santa Margarita. Expert opinion is that they were extirpated from this area around 1975 to 1978. The only known extant population in San Luis Obispo County is near the northern county line (CNDDB 2022).
California red-legged frog *Rana draytonii*	Aquatic habitats with little or no flow and surface water depths to at least 2.3 feet. Presence of fairly sturdy underwater supports such as cattails.	FT, CH/--/SSC	**Suitable Conditions Present; Species Present.** There is suitable habitat present in the study area and one CNDDB record (#1417) in the western portion of the study area in an artificially constructed pond in a private residence. There are additional records just west of that in Morro Creek, and two additional records at the very northern edge of the study area in Graves and Paso Robles Creeks. Their populations in the urban areas are likely limited if extant due to pressures from urbanization, decreased quality and invasion of nonnative species such as bullfrogs and crayfish. Critical habitat is mapped in the western edge of the study area.

Table 5-5: Special-Status Wildlife Species in the Vicinity of the Study Area

Species Name	Habitat and Distribution	Legal Status Federal/State/ CDFW	Rationale for Expecting Presence or Absence
Western spadefoot *Spea hammondii*	Vernal pools in primarily grassland, but also in valley and foothill hardwood woodlands.	--/--/SSC	**Suitable Conditions Present; Species Absent.** The study area does not support large vernal pool areas, but it does contain seasonal ponds that may provide suitable breeding habitat adjacent to suitable upland habitat. However, there are no known CNDDB occurrence records in the study area. The closest record is just south of the study area (#1326) within the Garden Farms community and the specific location is described as a natural pond on the Southern Pacific Milling Company land. There are also occurrences 2 miles east of the Salinas River (#301) and 2 miles north of the study area in Templeton (#366).
Coast Range newt *Taricha torosa*	Breeds in ponds, reservoirs, and slow-moving streams. Frequents terrestrial habitats such as oak woodlands.	--/--/SSC	**Suitable Conditions Present; Species Present.** Graves, Atascadero, and Paloma Creeks provide suitable aquatic habitat. There are three CNDDB occurrences in the study area. One in Graves Creek, just south of Santa Lucia bridge (#54) and two in a tributary to Grave Creek in Paradise Valley (#55 and #56). Habitat was described as high-quality riparian with patchy residential development and consisted of coast live oak, arroyo willow, poison oak, and nonnative annual grassland.

Table 5-5: Special-Status Wildlife Species in the Vicinity of the Study Area

Species Name	Habitat and Distribution	Legal Status Federal/State/ CDFW	Rationale for Expecting Presence or Absence
Reptiles			
Northern California legless lizard *Anniella pulchra*	Sandy or loose loamy soils with high moisture content under sparse vegetation.	--/--/SSC	**Suitable Conditions Present; Species Present.** There is one historic (1960) CNDDB occurrence generically mapped to the city center (#162) and one immediately north of the city center, east of US 101 (#66) found in sandy loam soil in mature coast live oak woodland habitat interspersed with residential landscape and single-family homes. In general, this species is most likely to occur in areas with loose loamy, sandy soils at lower elevations in the study area.

Table 5-5: Special-Status Wildlife Species in the Vicinity of the Study Area

Species Name	Habitat and Distribution	Legal Status Federal/State/ CDFW	Rationale for Expecting Presence or Absence
Western pond turtle *Emys marmorata*	Quiet waters of ponds, lakes, streams, and marshes. Typically in the deepest parts with an abundance of basking sites.	--/--/SSC	**Suitable Conditions Present; Species Present.** There is one CNDDB occurrence (#1156) in the urban area of Atascadero in Atascadero Creek on the north side of US 101 and El Camino Real. In addition, there are several CNDDB records immediately west of the study area in the Santa Lucia Mountain range in Morro, Toro, Old, and Santa Rita Creeks and immediately south of the study area in Trout, Santa Margarita, and Yerba Buena Creeks. Their populations in the study area are likely lower due to decreased habitat suitability from urban development. Populations are threatened by lack of suitable upland habitat due to urbanization, trash dumping, and the presence of invasive species, such as bullfrogs.
Coast horned lizard *Phrynosoma blainvillii*	Frequents wide variety of habitats, commonly occurring in lowlands along sandy washes, coastal sage scrub, and chaparral in arid and semi-arid climate conditions. Species prefers friable, rocky, or shallow sandy soils.	--/--/SSC	**Suitable Conditions Present; Species Absent.** There are no CNDDB occurrence records for the species within or adjacent to the study area. Overall, there is a gap in occurrences in the upper Salinas River watershed, with occurrences north of Paso Robles near Camp Roberts, west in Morro Bay, and east in Cholame Valley. Therefore, the probability of occurrence of this species in the study area is low, despite the presence of potentially suitable habitat areas, particularly in sparsely vegetated areas along the Salinas River.

Table 5-5: Special-Status Wildlife Species in the Vicinity of the Study Area

Species Name	Habitat and Distribution	Legal Status Federal/State/ CDFW	Rationale for Expecting Presence or Absence
Birds			
Cooper's hawk *Accipiter cooperii*	Deciduous riparian woodland habitat throughout California. Nests in deciduous, mixed-deciduous, and evergreen forests, as well as in suburban and urban environments. Tends to nest in more open areas that have older and larger trees.	MBTA/--/WL	**Suitable Conditions Present.** Despite the lack of CNDDB occurrences, the study area provides plenty of suitable habitat areas for this species, particularly in the abundant oak woodlands and annual grassland habitat that occur throughout the study area.
Tricolored blackbird *Agelaius tricolor*	(Nesting colony); open water, protected nesting substrate such as cattails or tall rushes, and foraging area with insect prey.	MBTA/ST/SSC	**Suitable Conditions Present; Species Absent.** While there is potentially suitable habitat in the tule marshes around Atascadero Lake and along the Salinas River, the level of urban development and recreational disturbance around Atascadero Lake makes establishment of a nesting colony unlikely. The closest CNDDB occurrences are located east in Creston around Franklin Lakes
Grasshopper sparrow *Ammodramus savannarum*	(Nesting) dense grasslands on rolling hills, lowland plains, in valleys, and on hillsides on lower mountain slopes; favors native grasslands with a mix of grasses, forbs, and scattered shrubs loosely colonial when nesting.	MBTA/--/SSC	**Suitable Conditions Present.** There is suitable grassland habitat in the study area. The closest CNDDB record (#11) is located immediately south of the study area adjacent to Santa Margarita.
Burrowing owl *Athene cunicularia*	Open, dry grasslands, deserts, and scrublands. Subterranean nester, dependent on burrowing mammals.	MBTA/--/SSC	**Suitable Conditions Present, Presence Unlikely.** There is suitable grassland habitat in the study area; however, the closest occurrence is near Camp San Luis Obispo and north on Camp Roberts.

Table 5-5: Special-Status Wildlife Species in the Vicinity of the Study Area

Species Name	Habitat and Distribution	Legal Status Federal/State/ CDFW	Rationale for Expecting Presence or Absence
Golden eagle *Aquila chrysaetos*	Usually in mountainous areas with varying vegetative cover; removed from people. May forage in grasslands and other open habitats. Nests on cliff edges and rarely in tall trees	MBTA/--/FP	**Suitable Conditions Present; Species Present.** Although unlikely to occur in the denser urban areas, there is an occurrence in the southern portion of the study area in the Santa Lucia Mountain range near Eagle Peak (#141).
Ferruginous hawk *Buteo regalis*	(Wintering) open grasslands, sagebrush flats, desert scrub, low foothills, and fringes of pinyon-juniper habitats; eats lagomorphs, ground squirrels, and mice.	MBTA/--/WL	**Suitable Conditions Present.** The study area contains suitable habitat (open grasslands). This species is a winter migrant and does not nest in the area.
Western snowy plover *Charadrius alexandrinus nivosus*	Sandy beaches, salt pond levees, and shores of large alkali lakes. Needs sandy, gravelly, or friable soils for nesting.	FT/--/SSC	**Suitable Conditions Absent.** The study area does not contain suitable habitat for this species and is not located on the coast.
Western yellow-billed cuckoo *Coccyzus americanus*	Forests to open riparian woodlands with thick under story.	FT, CH/SE/--	**Marginal Conditions Present.** The study area contains riparian woodlands but is outside the known extant range of this species.
White-tailed kite *Elanus leucurus*	Open grasslands, meadows, or marshlands for foraging close to isolated trees for nesting and perching.	MBTA/--/FP	**Suitable Conditions Present.** Despite the lack of CNDDB occurrences, the study area provides plenty of suitable habitat areas for this species, particularly in the annual grassland habitat that occurs throughout the study area.

Table 5-5: Special-Status Wildlife Species in the Vicinity of the Study Area

Species Name	Habitat and Distribution	Legal Status Federal/State/ CDFW	Rationale for Expecting Presence or Absence
Southwestern willow flycatcher *Empidonax traillii extimus*	Riparian woodlands of southern California. Breeds in relatively dense riparian tree and shrub communities associated with rivers, swamps, and other wetlands, including lakes and reservoirs. In most instances, dense vegetation occurs within first 10 to 13 feet aboveground. Habitat patches must be at least 0.25 acre in size and at least 30 feet wide.	FE, CH/SE/--	**Marginal Conditions Present; Species Absent.** The riparian habitat along the Salinas River provides potentially suitable habitat, but the study area is located outside of the known current range of this species.
California horned lark *Eremophila alpestris actia*	Short grass prairies, coastal plains, fallow grain fields, and alkali flats. Found in coastal regions from Sonoma to San Diego County, and west to the San Joaquin Valley.	MBTA/--/WL	**Suitable Conditions Present.** Despite the lack of CNDDB occurrences, the study area provides plenty of suitable habitat areas for this species, particularly in the annual grassland habitat that occurs throughout the study area.
Merlin *Falco columbarius*	(Wintering); nests in trees associated with open forests adjacent with open areas. Preys on small birds.	MBTA/--/WL	**Suitable Conditions Present.** Suitable habitat conditions are present, but the study area is not located within the nesting range of this species.
Prairie falcon *Falco mexicanus*	Dry, open terrain that is level or hilly and breeds on cliffs.	MBTA/--/WL	**Suitable Conditions Present.** This species was present in study area.
California condor *Gymnogyps californianus*	Open savannas, grasslands, and foothill chaparral, in mountain ranges with moderate altitudes. Nests in deep canyons on rock walls with clefts.	FE, CH/SE/FP	**Suitable Conditions Absent.** The BSA does not contain deep canyons on rock walls with clefts for nesting.

Table 5-5: Special-Status Wildlife Species in the Vicinity of the Study Area

Species Name	Habitat and Distribution	Legal Status Federal/State/ CDFW	Rationale for Expecting Presence or Absence
Bald eagle *Haliaeetus leucocephalus*	Ocean shore, lake margins, and rivers for both nesting and wintering. Most nests within 1 mile of water.	FDL/SE/FP	**Suitable Conditions Present.** Suitable nesting conditions within the study area are absent; however, this species has been observed around Atascadero Lake (eBirds 2022; Morro Coast Audubon Society 2019).
Loggerhead shrike *Lanius ludovicianus*	Broadleaved upland forest, desert was, Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodlands, riparian woodland, and Sonoran desert scrub.	MBTA/--/SSC	**Suitable Conditions Present.** This species was present in the study area.
Purple martin *Progne subis*	Valley foothill and montane hardwood forests, conifer forests, and riparian habitats. May nest in old woodpecker cavities or in human-made structures such as bridges and culverts. Feeds on insects.	MBTA/--/SSC	**Suitable Conditions Present; Species Present.** Sycamores within the riparian corridors provide suitable nesting habitat, but nesting is more likely in the unincorporated areas and is less likely in areas surrounded by residential development. The CNDDB documents one occurrence along Atascadero Creek (#15) and one south of the study area at Santa Margarita Ranch (#26) in sycamore trees.
California ridgeway's (clapper) rail *Rallus longirostris obsoletus*	Pickleweed and cordgrass marshes. Nests in marshlands near tidal ponds, arranging plants or drift material over nest as canopy.	FE/SE/FP	**Suitable Conditions Absent.** The study area does not contain suitable marshlands near tidal ponds.

Table 5-5: Special-Status Wildlife Species in the Vicinity of the Study Area

Species Name	Habitat and Distribution	Legal Status Federal/State/ CDFW	Rationale for Expecting Presence or Absence
Yellow warbler *Setophaga petechia*	Riparian associations; prefers willows, cottonwoods, aspens, sycamores, and alders for nesting and foraging.	MBTA/--/SSC	**Marginal Conditions Present; Species likely Absent.** Potentially suitable habitat is limited to the riparian areas of the Salinas River. Nesting is unlikely, but it may be present as a transient migratory species.
Least Bell's vireo *Vireo bellii pusillus*	Summer resident of southern California. Low riparian areas in vicinity of water or in dry river bottoms below 2,000 feet. Nests along margins of bushes or twigs of willow, *Baccharis*, or mesquite.	FE, CH/SE/--	**Marginal Conditions Present.** There are two CNDDB occurrences (one historical [1946; #127] and one recent [2005; #323]) recorded in the Salinas River approximately north of the study area. Potentially suitable habitat is limited to the riparian areas of the Salinas River. Nesting is unlikely, but it may be present as a transient migratory species.
Class Aves Other migratory bird species (nesting)	Nonnative grassland, valley oak woodland, central coastal scrub, windrows, landscaping, water tanks, and structures may provide nesting habitat.	MBTA/--/--	**Suitable Conditions Present.** Multiple nesting bird species are present in the study area.
Mammals			
Pallid bat *Antrozous pallidus*	Prefers rocky outcrops, cliffs, and crevices with access to open habitats for foraging. Day roosts are in caves, crevices, mines, and occasionally in hollow trees and buildings. Night roosts may be in more open sites, such as porches and buildings.	--/--/SSC	**Suitable Conditions Present.** There are CNDDB occurrences recorded in and just outside of the study area. There are several structures and trees that may provide suitable roosting habitat for this species.

Table 5-5: Special-Status Wildlife Species in the Vicinity of the Study Area

Species Name	Habitat and Distribution	Legal Status Federal/State/ CDFW	Rationale for Expecting Presence or Absence
Townsend's big-eared bat *Corynorhinus townsendii*	Wide variety of habitats; most common in mesic (wet) sites. May use trees for day and night roosts; however, requires caves, mines, rock faces, bridges, or buildings for maternity roosts. Maternity roosts are in relatively warm sites.	--/--/SSC	**Suitable Conditions Present.** No CNDDB occurrences have been recorded in the immediate study area, but there is an occurrence just south of the study area. There are several structures that may provide suitable roosting habitat for this species.
Giant kangaroo rat *Dipodomys ingens*	Gently sloping and level piedmont plains and formerly areas supporting saltbrush and perennial grasses. Habitat dominated by introduced annuals, with many shrubs in some areas. Prefers areas of sparse vegetative cover and well-drained soils and slope generally less than 9%.	FE/SE/--	**Suitable Conditions Absent.** The study area is outside the current range of this species.
Western mastiff bat *Eumops perotis*	Found in many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral, etc.; roosts in crevices in cliff faces, high buildings, trees, and tunnels.	--/--/SSC	**Suitable Conditions Present.** No CNDDB occurrences have been recorded in the immediate study area; however, there are several structures and trees that may provide suitable roosting habitat for this species in the study area.
San Diego desert woodrat *Neotoma lepida intermedia*	Forest habitats of moderate canopy and moderate to dense understory; also in chaparral habitats. Requires rock outcrops and rocky cliff slopes Nests constructed of grass, feathers, etc. Population may be limited by availability of nest materials.	--/--/SSC	**Suitable Conditions Absent.** The study area is outside the current range of this species.

Table 5-5: Special-Status Wildlife Species in the Vicinity of the Study Area

Species Name	Habitat and Distribution	Legal Status Federal/State/ CDFW	Rationale for Expecting Presence or Absence
Monterey dusky-footed woodrat *Neotoma macrotis luciana*	Occurs in coastal central California in habitats that exhibit moderate vegetative canopy, with brushy understory. Builds nests of sticks and leaves at base of, or within, tree or shrub, or at base of hill. Primarily feeds on woody plants, but also eats fungi, flowers, grasses, and acorns.	--/--/SSC	**Suitable Conditions Present.** The study area supports suitable vegetation conditions to support populations of this species.
Big free-tailed bat *Nyctinomops macrotis*	Rare vagrant in California, probable resident in Texas, New Mexico, and southern Arizona. Probably does not breed in California. Prefers rugged, rocky canyons but will roost on buildings or in caves and trees.	--/--/SSC	**Suitable Conditions Absent.** The study area is outside the current range of this species.
Salinas pocket mouse *Perognathus inornatus psammophilus*	Annual grassland and desert shrub communities in Salinas Valley.	--/--/SSC	**Suitable Conditions Absent.** The study area is outside the current range of this species.
American badger *Taxidea taxus*	Open stages of shrub, forest, and herbaceous habitats; needs uncultivated ground with friable soils.	--/--/SSC	**Suitable Conditions Present.** The study area supports suitable soil and vegetation conditions to support populations of this species.
San Joaquin kit fox *Vulpes macrotis mutica*	Annual grasslands or grassy open stages with scattered shrubby vegetation; needs loose-textured sandy soils for burrowing and suitable prey base.	FE/ST/--	**Suitable Conditions Absent.** The study area is outside the current range of this species.

Table 5-5: Special-Status Wildlife Species in the Vicinity of the Study Area

Species Name	Habitat and Distribution	Legal Status Federal/State/ CDFW	Rationale for Expecting Presence or Absence

General references: Unless otherwise noted all habitat and distribution data provided by California Natural Diversity Database
Status Codes
--= No status
Federal: FE = Federal Endangered; FT= Federal Threatened; FC= Federal Candidate; FDL=Federal Delisted; PE = Proposed Endangered; CH = Federal Critical Habitat; MBTA= Protected by Federal Migratory Bird Treaty Act
State: SE= State Endangered; ST= State Threatened
California Department of Fish and Wildlife: SSC= California Special Concern Species; FP= Fully Protected Species; WL = CDFW Watch List species; SA= Not formally listed but included in CDFW "Special Animal" List (CNDDB 2022; CDFW 2022d).

5.6 Critical Habitat

South-Central California Coast Steelhead Critical Habitat

The South-Central California Coast steelhead DPS is Federally listed as threatened and is listed as an SSC by the CDFW (CDFW 2022d). Critical habitat was designated for the species on September 5, 2005 (NOAA Fisheries 2005). There are no CNDDB occurrences of South-Central California Coast steelhead in the Salinas River Watershed south of Arroyo Seco and its tributaries (CNDDB occurrence #4), but several of the creeks in the study area historically supported populations of steelhead.

Historically (prior to the 1950s), Graves Creek supported an abundant population of steelhead (US-LTRCD 2002). There are historic accounts that steelhead runs would start in January and end in March and, depending on the rains, could bring steelhead upstream through May (US-LTRCD 2002). Currently Graves Creek, Atascadero Creek, and the Salinas River are designated as Critical Habitat for South-Central California Coast steelhead DPS. These creeks fall within the Paso Robles Hydrologic Subarea 330981, which is part of the larger Salinas Hydrologic Unit 3309 (NOAA Fisheries 2005).

Anthropogenic threats to steelhead in the Salinas River watershed were broken down into four general threat categories: 1) barriers to upstream and downstream migration (roads, dams, groundwater extraction, and sand and gravel mining); 2) agricultural conversion of floodplain habitats; 3) recreational facilities and activities, and 4) water management activities, including dam operations, diversions, and groundwater extractions (NOAA Fisheries 2013). All four waterways in the study area contain identified barriers to fish passage as mapped by FishPAD (CDFW 2022c); however, Atascadero Creek contains the highest number with 10 barriers. These barriers range from only partial barriers to total barriers.

California Red-legged Frog Critical Habitat

The study area contains a small portion, approximately 3,072 acres, of Critical Habitat Unit SLO-3 for California red-legged frog. Critical habitat areas include the upper watershed areas of Morro and Atascadero Creeks (**Figure 5-6**). The small portion of Santa Margarita Creek watershed that falls in the study area and a small corner of the Paloma Creek watershed but does not include Paloma Creek itself. The key threats to the physical and biological features essential to the conservation of California red-legged frog in Unit SLO-3 include predation by nonnative species, water diversion, overgrazing, and urbanization (USFWS 2010). These activities may alter aquatic or upland habitats and thereby result in the direct or indirect loss of egg masses or adults due to habitat modification (USFWS 2010).

5.7 Oak Woodland Resources

The study area contains a diversity of oak woodlands, including Blue Oak Woodlands, Coast Live Oak Woodlands, Valley Oak Woodlands, and Blue-Oak Foothill Pine (**Figure 5-7**). There are approximately 10,822 acres of oak woodlands mapped in the study area by the CAL FIRE FRAP vegetation database [ds1327] (CAL FIRE 2020). Oak woodlands provide important wildlife habitat and are an integral part of the aesthetic appeal for living in the City of Atascadero. **Table 5-6** provides a breakdown of the distribution of the different oak woodland types by current land use designations.

Table 5-6: Distribution of Oak Woodland Habitat by Current Land Use Designation

Land Use	Blue Oak Woodland	Blue Oak-Foothill Pine	Coast Live Oak Woodland	Valley Oak Woodland
Agriculture		29	8	
Commercial Park	6	8	2	
Commercial Recreation	0			
Downtown			4	
General Commercial	11	37	5	
High Density Residential (16 units / acre)	7	62	34	
Industrial	1		1	
Medium Density Residential (10 units / acre)	1	25	70	
Mixed Use		4	0	
Open Space	37	181	103	6
Public Facilities	12	130	41	
Public Recreation	21	26	65	3
Right-of-Way	8	12	9	
Rural Estates (2.5 – 10 acre lot min)	810	1,407	2,749	383
Rural Residential	17	4	44	
Single-Family Residential (0.5 acre lot min)	26	94	95	
Single-Family Residential (1.0 acre lot min)	173	381	397	
Single-Family Residential (1.5 – 2.5 acre lot min)	15	389	65	
Suburban Estates (2.5 – 10 acre lot min)	161	106	103	
Unincorporated	448	75	629	379

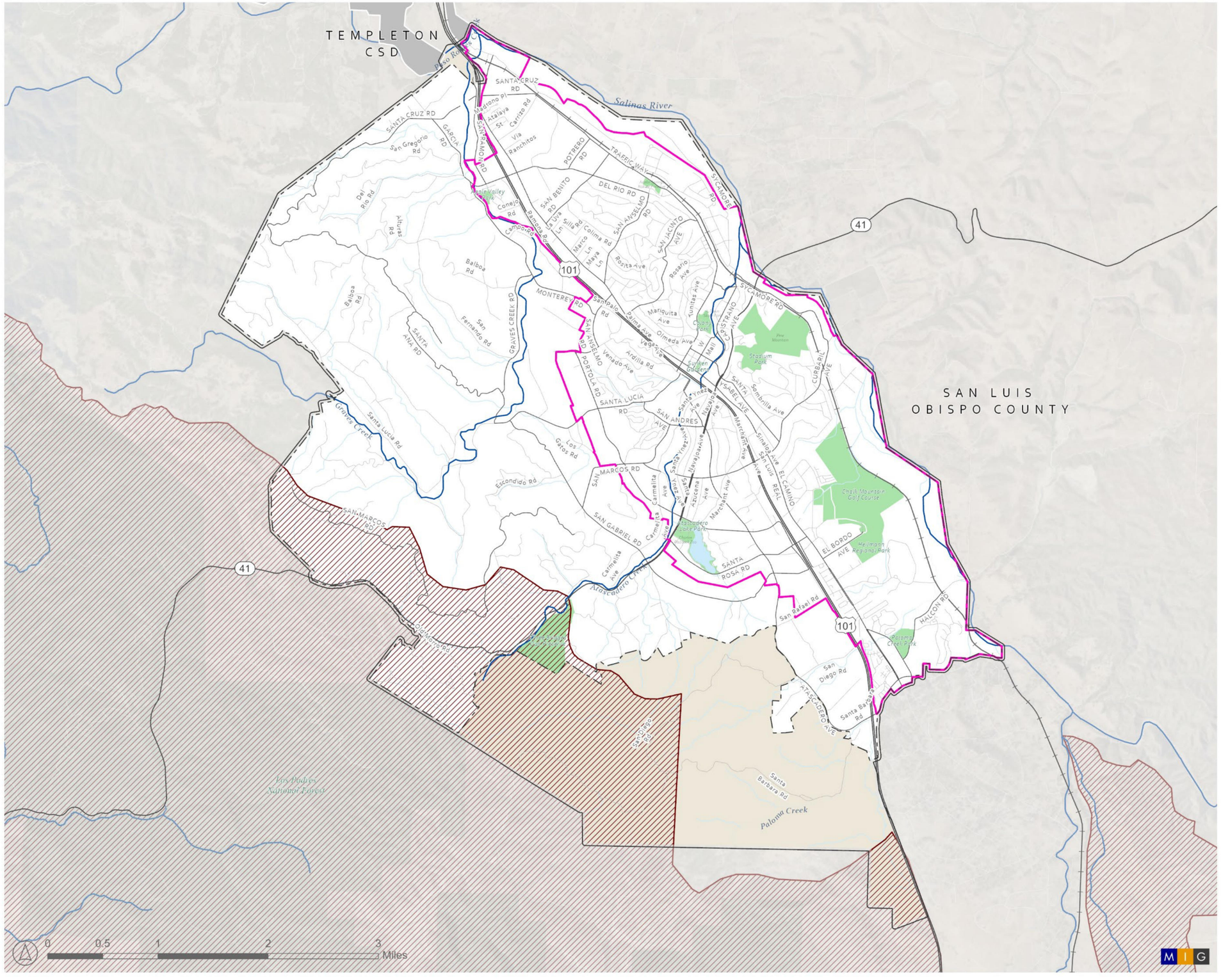


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Figure 5-6
Critical Habitat

Basemap Features

- Atascadero City Limits
- Atascadero Planning Area
- Atascadero Sphere of Influence
- Urban Services Line
- Parks + Open Space
- Rivers + Waterbodies
- Major Roads + Freeways

Critical Habitat

- Steelhead
- California red-legged frog

Source(s):
Esri, CA State Open Data, County of San Luis Obispo, City of Atascadero 2023.

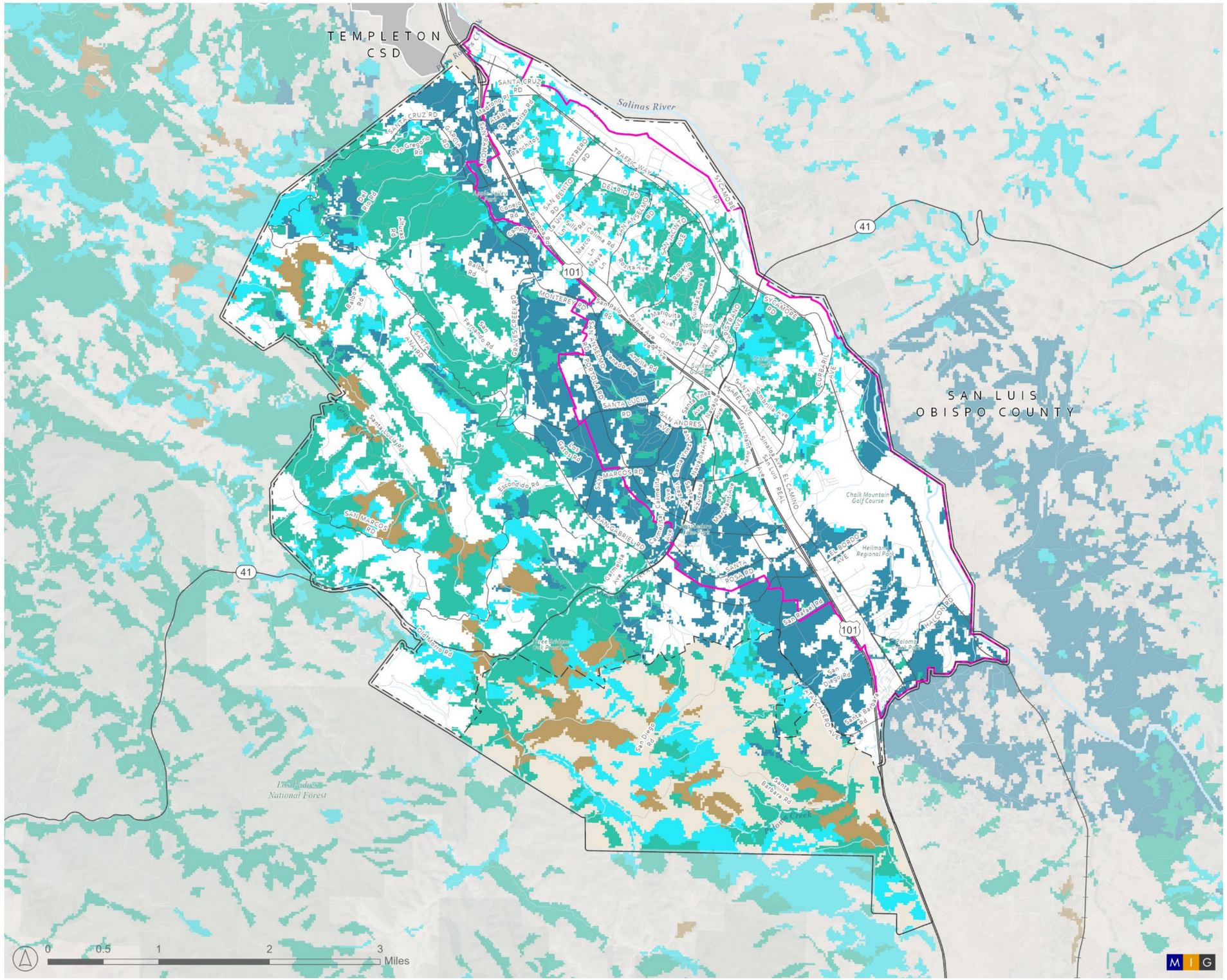

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Figure 5-7
California Vegetation - Oak Woodlands

Basemap Features
- Atascadero City Limits
- Atascadero Planning Area
- Atascadero Sphere of Influence
- Urban Services Line
- Rivers + Waterbodies
- Major Roads + Freeways

Oak Woodlands Habitat
- Blue Oak Woodland
- Blue Oak-Foothill Pine
- Coastal Oak Woodland
- Valley Oak Woodland

Source(s):
Esri, CA State Open Data, County of San Luis Obispo, City of Atascadero 2023.

5.8 Minerals

The California Surface Mining and Reclamation Act (SMARA) of 1975 requires that the State Geologist classify land into mineral resource zones (MRZs) according to the known or inferred mineral potential of the land (California Public Resources Code Sections 2710–2796).

The study area is in the San Luis Obispo-Santa Barbara Production-Consumption Region. According to Special Report 215 (SR 215): *Update of Mineral Land Classification: Concrete Aggregate in the San Luis Obispo-Santa Barbara Production-Consumption Region, California*, the three MRZs used in the SMARA classification-designation process in the San Luis Obispo-Santa Barbara Production-Consumption Region are defined below (California Geological Survey [CGS] 2011a):

- **MRZ-1:** Areas where available geologic information indicates that little likelihood exists for the presence of significant mineral resources.
- **MRZ-2:** Areas where adequate information indicate that significant mineral deposits are present, or where it is judged that a high likelihood for their presence exists. This zone shall be applied to known mineral deposits or where well-developed lines of reasoning, based upon economic-geologic principles and adequate data, demonstrate that the likelihood for occurrence of significant mineral deposits is high.
- **MRZ-3:** Areas containing known or inferred aggregate resources of undetermined significance.

Three aggregate-grade subdivisions were used in classifying lands as MRZ-2, including Portland cement concrete (PCC) grade, asphalt concrete (AC) grade, and base and fill. In classifying lands as MRZ-1 and MRZ-3, only PCC-grade criteria were considered.

According to the CGS *Updated Mineral Land Classification Map for Concrete-Grade Aggregates in the San Luis Obispo-Santa Barbara Production-Consumption Region, California*, all three MRZ zones exist within the City of Atascadero. A majority of the city is classified as an MRZ-3 zone. There is an MRZ-2 (PCC) zone surrounding the Salinas River, along the eastern city limit. There are several MRZ-1 zones located along the southwestern city limit and within the central and eastern portions of the city (CGS 2011b).

Concrete-Grade Aggregate Resource Sectors in the San Luis Obispo-Santa Barbara P-C Region

Sectors are described as areas that have been classified as MRZ-2 by the State Geologist, and that have current land uses deemed compatible with potential mining based on criteria provided by the California State Mining and Geology Board. SR 215 identifies five sectors in the P-C Region, including Sectors A, B, C, D, and E, which are also divided into 56 subsectors. The project site falls within subsectors A-2a, A-2b, and A-3 of Sector A. Sector A consists of deposits in the recent river channel and adjacent floodplain along about 14 miles of the Salinas River, from the southeastern city limits of Atascadero to the Niblick Road Bridge in the City of Paso Robles. Sector A has been subdivided into five subsectors identified as A-1a, A-1b, A-2a, A-2b, and A-3. The combined area of the five subsectors is 1,687 acres; estimated resources are 48 million tons of PCC-grade aggregate (CGS 2011a).

Mines in the San Luis Obispo-Santa Barbara P-C Region

There are several mines in the San Luis Obispo-Santa Barbara P-C Region. According to the California Department of Conservation (CDOC) Mines Online database, the Millhollin Pit (Mine ID 91-40-0001) is located within the southwestern portion of the city but has been permanently closed and reclaimed (CDOC 2016). While active, the Millhollin Pit consisted of an open pit operation that primarily produced rock. In addition, the Sycamore Road Pit (Mine ID 91-40-0042) is located adjacent to the western city limit and the Rocky Canyon Quarry (Mine ID 91-40-003) is located approximately 5 miles southeast of the city and primarily produces decomposed granite (CDOC 2016).

5.9 Groundwater Basin(s)

The following section is based on the *Atascadero Basin Groundwater Sustainability Plan* (GSP; (Atascadero Basin Groundwater Sustainability Agency [ABGSA] 2022), which was adopted on January 19, 2022.

Basin Setting

The Atascadero Area Groundwater Subbasin (Basin) is identified by California Department of Water Resources (DWR) in Bulletin 118 as Subbasin No. 3-004.11 and is part of the greater Salinas Valley Basin in the Central Coast region of California. It was discovered that the Rinconada Fault was acting as a significant barrier to groundwater flow. As a result, in 2016, the Basin was subdivided from the Paso Robles Area Subbasin. Currently, the Basin encompasses a narrow structural area of approximately 19,735 acres, extending northwest from the community of Santa Margarita at its southern end to the City of Paso Robles at its northern end. The Basin is bounded by the Santa Lucia Range on the west. The following includes the specific lateral boundaries of the Basin:

The northwestern, western, and southern boundaries of the Basin are defined by the contact of Basin sediments with older, relatively impermeable geologic units, including Tertiary-age consolidated sedimentary beds, Cretaceous-age metamorphic rocks, and granitic rock.
Along the northern portion of the eastern boundary, north of Templeton, the Rinconada Fault defines the eastern boundary of the Basin and is assumed to form a leaky hydraulic barrier between the Paso Robles Basin and the Basin.
Along the southern portion of the eastern boundary, south of Templeton and between Atascadero and Creston, the Rinconada Fault lies along the Monterey Formation rocks and other bedrock units with the Paso Robles Formation basin sediments.

The basin is comprised of flatlands ranging in elevation from approximately 700 to 1,400 feet above mean sea level. The average annual precipitation ranges from 13 to 23 inches. The Salinas River is the primary surface water feature within the basin. The Salinas River is an ephemeral waterbody that loses water to the shallow aquifer during most of the year.

The Paso Robles Formation is the primary water-bearing sediment in the Basin. The other major aquifer unit of the Basin is the Quaternary Alluvium, which overlays the Paso Robles Formation.

Alluvium consists of alluvial (river- or stream-related) deposits that occur beneath the floodplains of the rivers and streams within the Basin. These deposits reach a depth of approximately 100 feet or less below ground surface and are typically comprised of coarse sand and gravel. Alluvium is generally much coarser than the Paso Robles Formation

sediments, with higher permeability that results in well production capability that often exceeds 1,000 gallons per minute. One of the principal areas of groundwater recharge to the Basin occurs where the shallow alluvial sand and gravel beds are in direct contact with the Paso Robles Formation.

The Basin is primarily comprised of sedimentary layers of the Paso Robles Formation that extend from the ground surface, or the base of Alluvium, to approximately 700 to 800 feet thick in some areas of the Basin. The formation is unconsolidated and generally poorly sorted. It is not usually intensely deformed, except locally near fault zones. The sand and gravel beds within the unit have a high percentage of Monterey shale gravel fragments and generally have moderately lower permeability compared to the shallow, unconsolidated alluvial sand and gravel beds. Typically, the formation is thick enough for water wells to produce several hundred gallons per minute. In the area near Atascadero, the Paso Robles Formation has been folded, exposing the basal gravel beds. With the basal gravel exposed and in direct contact with the Alluvium, the Paso Robles Formation is recharged directly from the Alluvium.

Numerous deposits of Older Alluvium are located throughout the Basin. These deposits are terraces of dissected older alluvial sands and gravels. They are unsaturated and, therefore, are not considered a principal aquifer unit within the Basin.

Land Uses within the Basin

The Basin includes the incorporated cities of Paso Robles and Atascadero, as well as the unincorporated census-designated places of Santa Margarita and Templeton. Land use categories within the Basin generally include approximately 4,106 acres of agricultural land, 2,592 acres of urban uses, and 13,192 acres of native vegetation. The primary groundwater users in the Basin include municipal, agricultural, rural residential, small community water systems, and small commercial entities.

Water Budgets and Groundwater Conditions

As a part of the Atascadero Basin GSP, historical, current, and future water budgets were developed using the following computer models of the Basin's hydrogeologic conditions: a watershed model, a soil water balance model, and a groundwater flow model. The following includes a summary of the results of modelling:

Over a historical base period of 31 years (1981–2011), a net gain of groundwater storage of approximately 42,300 acre-feet occurred. During this time, the average annual groundwater storage gain was approximately 1,400 acre-feet per year (AFY).
Over the previous 5-year water budget period (2012–2016), the annual average groundwater storage loss, or the difference between outflow and inflow to the Basin, was approximately 2,500 AFY. This reduction reflects the drought conditions that prevailed during the current water budget period.
The projected future groundwater budget period (2020–2042) shows the Basin to be generally in balance, with projected groundwater inflows of approximately 18,000 AFY and projected groundwater outflows of about 17,200 AFY. The projected future surplus indicates an average annual increase in groundwater in storage of 800 AFY.

In general, the groundwater quality in the basin is good and water quality trends are dominantly stable.

5.10 Wildfires

A wildfire is an uncontrolled spread of fire through vegetative fuels that poses danger and destruction to property. Wildfires often start in undeveloped and public land areas, such as national and State forest lands, but can spread to urban areas where development is more concentrated. The predominant dangers from wildfires include injury or loss of life to people in the affected area and destruction of vegetation, property, and wildlife. According to the San Luis Obispo County Multi-Jurisdictional Hazard Mitigation Plan, the city is at an increased risk of wildfire occurrence (**Figure 5-8**) (County of San Luis Obispo 2019). Wildfire and urban fire hazards are closely related in Atascadero due to extensive residential development in hillside areas with flammable chaparral, grassland, and oak woodland unpredictably (City of Atascadero 2016).

Wildfire Influences within the Study Area

Generally, the three major factors that increase wildfire risk in a given area include fuel, topography, and weather.

Fuel is the material that feeds a fire and is a key factor in wildfire behavior. Fuel sources are diverse and generally include dead tree leaves, twigs, and branches to dead standing trees, live trees, brush, and cured grasses. Additionally, fuel sources can be manmade structures, such as homes and other associated combustibles. Chaparral vegetation burns intensely at extremely high temperatures, making areas of the city containing this habitat susceptible to wildfires that are difficult to extinguish.

Topography influences wildfire spread in that both fire intensity and rate of spread increase as slopes increase due to the tendency of heat from a fire to rise. The arrangement and types of vegetation throughout a hillside can also contribute to increased fire activity on slopes. Within the city, the steepness of slopes generally increases with distance from the Salinas River (City of Atascadero 2016).

Weather components such as temperature, relative humidity, wind, and lightning also affect the potential for wildfire. High temperatures and low relative humidity dry out fuels that feed wildfires, creating a situation where fuel will more readily ignite and burn more intensely. Thus, periods of drought increase the threat of wildfire. Wind is the most influential weather factor of the three and its influence can increase rates of spread regardless of temperature and relative humidity. Maximum average summer (May–September) temperatures range between 86°F to 92°F, but there are often multiple days with temperatures reaching over 100°F. Minimum average summer temperatures range between 49°F to 52°F, and maximum average winter (October–April) temperatures range between 61°F to 80°F, with minimum average winter temperatures ranging between 32°F and 41°F. The average annual wind speeds in the city range from 4.5 miles per hour (mph) to 5.9 mph. The windiest months are March and April, and the calmest months are August and September (Weather Atlas 2022). Northwest afternoon winds are common in the western portion of the city due to inland valley heating and cool air currents flowing from the ocean. These winds can cause fires to spread and shift direction quickly and unpredictably (City of Atascadero 2016).

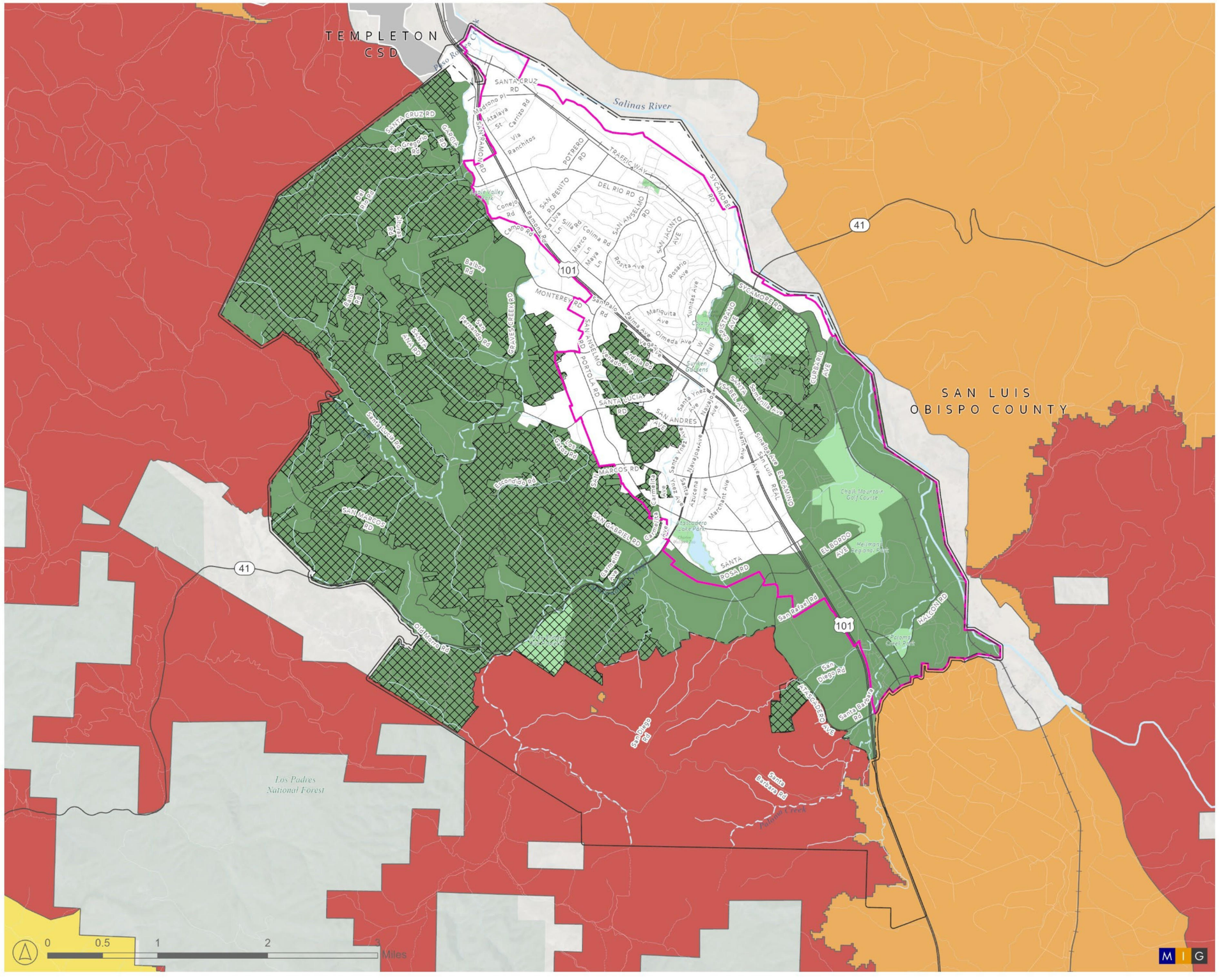

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Figure 5-8
Areas Prone to Wildfire

Basemap Features
- Atascadero City Limits
- Atascadero Planning Area
- Urban Services Line
- Parks + Open Space
- Rivers + Waterbodies
- Major Roads + Freeways

SLO Local Responsibility Area

Wildland Urban Interface (WUI)
- Wildland

Fire Hazard Severity Zone (SRA & LRA)
- Very High
- High
- Moderate

Source(s):
Esri, CA State Open Data, County of San Luis Obispo, City of Atascadero 2023.

Fire Hazard Severity Zones within the Study Area

CAL FIRE defines fire hazard severity zones (FHSZs) based on the presence of fire-prone vegetation, climate, topography, assets at risk (e.g., high population centers), and a fire protection agency's ability to provide service to the area. FHSZs throughout the region have been designated as "Very High," "High," or "Moderate." Within the region, most of the area that has been designated as a "Very High Fire Hazard Severity Zone" is in the Santa Lucia Mountains, which extend parallel to the coast along the entire length of San Luis Obispo County, from Monterey County in the north to Santa Barbara County in the south. According to the CAL FIRE FHSZ viewer (CAL FIRE 2022), the majority of land within the City of Atascadero is considered a Very High FHSZ in a local responsibility area (LRA). Areas immediately surrounding the city are primarily designated as a High FHSZ within a State responsibility area (SRA) to the east, northeast, and southeast and a Very High FHSZ within an SRA to the west, northwest, and southwest (CAL FIRE 2022).

The Wildland Urban Interface (WUI) designation is a City designation that includes a combination of the High and Very High FHSZs within the city limits and provides for a more cohesive boundary than the CAL FIRE FHSZ mapping for purposes of policy implementation.

5.11 Major Pollutants

Waterbody Pollutants within the Study Area

There are four major watersheds located within the city, including Graves Creek watershed, Atascadero Creek watershed, Salinas River Watershed, and the Paloma Creek watershed. Atascadero Creek is listed on the Central Coast RWQCB Section 303(d) List of Impaired Waters for dissolved oxygen and pathogens (e.g., fecal coliform, *E. coli*) and Salinas River is listed on the 303(d) List of Impaired Waters for turbidity (RWQCB 2018). The groundwater quality in the basin is good and water quality trends are dominantly stable (ABGSA 2022).

The Central Coast RWQCB established the following summarized water quality objectives in the *Water Quality Control Plan for the Central Coast Basin* (Basin Plan) for all inland surface waters within the basin to protect the identified beneficial uses listed above (RWQCB 2019):

- **Color:** Waters shall be free of coloration that causes nuisance or adversely affects beneficial uses. Coloration attributable to materials of waste origin shall not be greater than 15 units or 10% above natural background color, whichever is greater.
- **Tastes and Odors:** Waters shall not contain taste or odor-producing substances in concentrations that impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin, that cause nuisance, or that adversely affect beneficial uses.
- **Floating Material:** Waters shall not contain floating material, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses.
- **Suspended Material:** Waters shall not contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses.
- **Settleable Material:** Waters shall not contain settleable material in concentrations that result in deposition of material that causes nuisance or adversely affects beneficial uses.
- **Oil and Grease:** Waters shall not contain oils, greases, waxes, or other similar materials in concentrations that result in a visible film or coating on the surface of the water or

on objects in the water, that cause nuisance, or that otherwise adversely affect beneficial uses.

- **Biostimulatory Substances:** Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.
- **Sediment:** The suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses.
- **Turbidity:** Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses.
- **pH:** For waters not mentioned by a specific beneficial use, the pH value shall not be depressed below 7.0 or raised above 8.5.
- **Dissolved Oxygen:** For waters not mentioned by a specific beneficial use, dissolved oxygen concentration shall not be reduced below 5.0 milligrams per liter at any time. Median values should not fall below 85% saturation as a result of controllable water quality conditions.
- **Temperature:** Temperature objectives for Enclosed Bays and Estuaries are as specified in the *Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California*, including any revisions thereto.
- **Toxicity:** All waters shall be maintained free of toxic substances in concentrations which are toxic to, or which produce detrimental physiological responses in, human, plant, animal, or aquatic life.
- **Pesticides:** No individual pesticide or combination of pesticides shall reach concentrations that adversely affect beneficial uses. There shall be no increase in pesticide concentrations found in bottom sediments or aquatic life.
- **Chemical Constituents:** Where wastewater effluents are returned to land for irrigation uses, regulatory controls shall be consistent with Title 22 of the CCR and other relevant local controls.
- **Other Organics:** Waters shall not contain organic substances in concentrations greater than standards established in the Basin Plan.
- **Radioactivity:** Radionuclides shall not be present in concentrations that are deleterious to human, plant, animal, or aquatic life; or result in the accumulation of radionuclides in the food web to an extent which presents a hazard to human, plant, animal, or aquatic life.

The following summarized objectives from the Basin Plan apply to all groundwater resources located in the basin (RWQCB 2019):

- **Tastes and Odors:** Groundwaters shall not contain taste or odor producing substances in concentrations that adversely affect beneficial uses.
- **Radioactivity:** Radionuclides shall not be present in concentrations that are deleterious to human, plant, animal, or aquatic life; or result in the accumulation of radionuclides in the food web to an extent which presents a hazard to human, plant, animal, or aquatic life.

Hazards and Hazardous Materials within the Study Area

The Hazardous Waste and Substances Site (Cortese) List is a planning tool used by the State, local agencies, and developers to comply with CEQA requirements related to the disclosure

of information about the location of hazardous materials release sites. California Government Code Section 65962.5 requires the California Environmental Protection Agency (CalEPA) to develop at least annually an updated Cortese List. Various State and local government agencies are required to track and document hazardous material release information for the Cortese List. The California Department of Toxic Substance Control (DTSC) EnviroStor database tracks DTSC cleanup, permitting, enforcement, and investigation efforts at hazardous waste facilities and sites with known contamination, such as Federal superfund, State response, voluntary cleanup, school cleanup, school investigation, and military evaluation sites (DTSC 2022). The SWRCB GeoTracker database contains records for sites that impact, or have the potential to impact, water in California, such as Leaking Underground Storage Tank (LUST) sites, Department of Defense sites, and Cleanup Program Sites (SWRCB 2022). Based on a query of the DTSC EnviroStor and SWRCB GeoTracker databases, there are no open hazardous materials sites located within the city; however, there are 34 closed LUST cleanup sites, two closed school investigation sites, and one closed school cleanup site within the city (DTSC 2022; SWRCB 2022).

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5.13 Acronyms and Key Terms

°F: Degrees Fahrenheit

ABGSA: Atascadero Basin Groundwater Sustainability Agency

AC: Asphalt Concrete

AFY: Acre-Feet Per Year

Basin: Atascadero Area Groundwater Subbasin

BIOS: Biological Spatial Data Server

CAL FIRE: California Department of Forestry Fire Protection

CalEPA: California Environmental Protection Agency

CCR: California Code of Regulations

CDFW: California Department of Fish and Wildlife

CDO: California Department of Conservation

CEQA: California Environmental Quality Act

CESA: California Endangered Species Act

CFGC: California Fish and Game Code

CFR: Code of Federal Regulations

City: City of Atascadero (entity)

CNDDB: California Natural Diversity Database

CNPS: California Native Plant Society

CRPR: California Rare Plant Rank

CWA: Federal Clean Water Act

CWHR: California Wildlife Habitat Relationships

DBH: Diameter at Breast Height

DPS: Distinct Population Segment

DTSC: California Department of Toxic Substance Control

DWR: California Department of Water Resources

FESA: Federal Endangered Species Act

FHSZ: Fire Hazard Severity Zone

FRAP: Fire and Resource Assessment Program

GIS: Geographic Information System

GSP: Groundwater Sustainability Plan

HUC: Hydrologic Unit Code

IPaC: Information for Planning and Consultation

LRA: Local Responsibility Area

LUST: Leaking Underground Storage Tank

MBTA: Migratory Bird Treaty Act

Mph: Miles Per Hour

MRZ: Mineral Resource Zone

NHD: National Hydrography Dataset

NLCD: National Land Cover Database

NOAA Fisheries: National Oceanic and Atmospheric Administration

National Marine Fisheries Service

NPPA: Native Plant Protection Act

NRCS: Natural Resources Conservation Service

NWI: National Wetland Inventory

PCC: Portland cement concrete

Porter-Cologne Act: Porter-Cologne Water Quality Control Act

RWQCB: Regional Water Quality Control Board

SAA: Streambed Alteration Agreement

SR: State Route

SRA: State Responsibility Area

SWRCB: State Water Resources Control Board

US: U.S. Route

USACE: U.S. Army Corps of Engineers

USDA: U.S. Department of Agriculture

USFWS: U.S. Fish and Wildlife Service

USGS: U.S. Geological Survey

US-LTRCD: Upper Salinas-Las Tablas Resource Conservation District

WDR: Waste Discharge Requirement

WOTS: Waters of the State

WOTUS: Waters of the United States

APPENDIX F

2045 General Plan Existing Conditions Report | Chapter 6: Cultural Resources

2045 General Plan Existing Conditions Report

Chapter 6: Cultural Resources

Cultural Resources Findings

Archaeological Resources

1. The plan area contains dozens of known prehistoric and historic archaeological resources, and undoubtedly, additional resources yet to be identified. In addition, the plan area contains archaeological resources that likely qualify as Tribal Cultural Resources.
2. Historic and modern development has led to the loss of archaeological resources within the plan area. The City's current General Plan includes policies focused on the identification and protection of archaeological resources. Specifically, *Policy 6.2: Protect Prehistoric Cultural Resources from Disturbance Associated with Development* includes the following actions:
    a. Maintain a current GIS-based map of generalized areas of known archaeological resources.
    b. For discretionary projects within the generalized areas of archaeological resources, require Phase I surveys to determine the extent and significance of archaeological sites prior to approval.
    c. For discretionary projects located in areas of known resources, require Phase II surveys to determine the significance and mitigation requirements for identified resources.
    d. Require short and long-term mitigation measures for significant archaeological resource sites; include avoidance of impacts, burial under sterile fill, and/or monitoring of earthmoving activities.
    e. If determined appropriate by a qualified archaeologist, actively involve Native Americans with any work located within known archaeological sites.
    f. If archaeological resources are unearthed during construction, suspend all earth-disturbing work until appropriate mitigation is established.

    These policies should be expanded to include parameters for identifying archaeological resources in the plan area and environmental and historical factors that elevate sensitivity for the presence of known and unknown resources. In addition, the protection of archaeological resources should be prioritized when at all possible.
3. Multiple Native American tribal groups have ancestral ties to the plan area. Tribal involvement with development projects should be an integral component of the planning process, whether it be driven by law (e.g. Assembly Bill 52 consultation), or as a good faith effort to ensure stakeholder input.

Historical Resources

1. The plan area contains multiple known historic resources, including properties that are formally listed or determined eligible for listing in the NRHP and/or the CRHR. Noteworthy historical resources include the NRHP-listed Atascadero Printery and Atascadero Administration Veteran's Memorial Building (City Hall), and the NRHP-eligible Atascadero Estates Residential historic District, among others.

2. The plan area contains multiple potential historical resources that were previously documented either as part of grassroots efforts to identify historical resources, or by professional architectural historians in support of project-specific environmental documentation. In the instances of grassroots survey efforts, these identified potential resources have not been fully evaluated using appropriate historical significance criteria for listing in the NRHP and CRHR. Notable previous studies prepared by local advocates and other grassroots individuals include:

    a. The Colony Homes List, which is a list of addresses associated with original Colony Homes in Atascadero, was prepared by the Atascadero Historical Society in 1994. It provides addresses but no additional documentation or information regarding potential historic status.

    b. The Atascadero's Historic Business District document, which was prepared by the Atascadero Main Street Design Committee in 2010, identifies and provides historic background of notable properties in downtown Atascadero, not no specific evaluations of significance or other findings.

    c. The Atascadero Historical Report, which was prepared by an undergraduate student at California Polytechnical State University, San Luis Obispo in 2018, provides historic context and a historic resources survey. The document does not include evaluations of significance or other aspects required for identifying historical resources.

3. The City has not conducted a formal historic resources survey of the plan area or any specific area therein. All survey efforts appear to have been conducted by various government agencies, such as the California Department of Transportation, in support of environmental regulatory compliance.

4. The City has no historic preservation ordinance, formal local landmarks program, or historic resources inventory for historic resources. As such, all historical resources within the plan area have been assessed using the eligibility criteria for listing in the National Register of Historic Places (NRHP) and California Register of Historical Resources (CRHR).

5. The City does have a Historic Sites (HS) overlay zone that can be applied to properties with historical resources; however, the implementation and use of this zoning category has been limited and does not appear to coincide with known historical resources at this time.

6. The City of Atascadero 2035 General Plan provides a series of goals, policies, and programs specific to the preservation of historic resources. The most notable programs specific to the identification and treatment of historic resources includes, but is not limited to:

    a. Utilizing the HS overlay zone category;

    b. Develop and adopt a comprehensive inventory of historic resources;

    c. Update existing design guidelines and other development guidance documents to reflect the appropriate treatment of historic resources; and

d. Develop a variety of local incentive programs for preserving historical resources.

None of these programs have been implemented to date. Most of the goals, policies, and programs specific to historical resources outlined in the 2035 General Plan should be carried forward as part of the General Plan update.

6.1 Introduction

This chapter discusses existing cultural resources within the Atascadero General Plan Update plan area and identifies potential cultural resources constraints in the event of future development or changes in existing land use associated with the proposed General Plan Update. The chapter is based upon existing information gathered and analyzed by SWCA. SWCA conducted background research from readily available sources to prepare this section as cited in Section 6.8.

This chapter is organized into the following sections:

Section 6.1: Introduction
Section 6.2: Regulatory Setting
Section 6.3: Cultural Setting
Section 6.4: Archaeological Resources
Section 6.5: Historical Context
Section 6.6: Historic Resources
Section 6.7: Appendix A: 1994 Colony Homes List
Section 6.8: Appendix B: Atascadero BERD Entries
Section 6.9: Sources
Section 6.10: Acronyms and Key Terms

6.2 Regulatory Setting

Federal

National Historic Preservation Act of 1966

Enacted in 1966 and amended most recently in 2014, the NHPA (54 United States Code [USC] 300101 et seq.) instituted a multifaceted program, administered by the Secretary of the Interior, to encourage sound preservation policies of the nation's cultural resources at the federal, state, and local levels. The NHPA authorized the expansion and maintenance of the NRHP, established the position of State Historic Preservation Officer, and provided for the designation of State Review Boards. The NHPA also set up a mechanism to certify local governments to carry out the goals of the NHPA, assisted Native American tribes to preserve their cultural heritage, and created the Advisory Council on Historic Preservation (ACHP).

Section 106

Section 106 of the NHPA (54 USC 306108) states that Federal agencies with direct or indirect jurisdiction over federally funded, assisted, or licensed undertakings must consider the effect of the undertaking on any historic property that is included in or eligible for inclusion in the NRHP, and that the ACHP must be afforded an opportunity to comment, through a process outlined in the ACHP regulations in 36 CFR 800, on such undertakings.

The Section 106 process involves identification of significant historic resources within an "area of potential effect; determination if the undertaking will cause an adverse effect on historic resources; and resolution of those adverse effects through execution of a Memorandum of Agreement." In addition to the ACHP, interested members of the public, including individuals, organizations, and agencies (such as the OHP), are provided with opportunities to participate in the process.

National Register of Historic Places

The NRHP was established by the NHPA as "an authoritative guide to be used by Federal, State, and local governments, private groups and citizens to identify the Nation's cultural resources and to indicate what properties should be considered for protection from destruction or impairment" (36 CFR 60.2). The NRHP recognizes properties that are significant at the national, state, and local levels. To be eligible for listing in the NRHP, a resource must be significant in American history, architecture, archaeology, engineering, or culture. Districts, sites, buildings, structures, and objects of potential significance must also possess integrity of location, design, setting, materials, workmanship, feeling, and association.

Significance

A property is eligible for the NRHP if it is significant under one or more of the following criteria:

- **Criterion A:** It is associated with events that have made a significant contribution to the broad patterns of our history;
- **Criterion B:** It is associated with the lives of persons who are significant in our past;
- **Criterion C:** It embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values, or

represents a significant and distinguishable entity whose components may lack individual distinction; and/or,
- **Criterion D:** It has yielded, or may be likely to yield, information important in prehistory or history. Ordinarily cemeteries, birthplaces, or graves of historic figures, properties owned by religious institutions or used for religious purposes, structures that have been moved from their original locations, reconstructed historic buildings, and properties that are primarily commemorative in nature, are not considered eligible for the NRHP, unless they satisfy certain conditions. In general, a resource must be 50 years of age to be considered for the NRHP, unless it satisfies a standard of exceptional importance.

Integrity

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

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

STATE

The State Office of Historic Preservation (OHP), a division of the California Department of Parks and Recreation (DPR), is responsible for carrying out the duties described in the California Public Resources Code (PRC) and maintaining the California Historic Resources Inventory and CRHR. The state-level regulatory framework also includes CEQA, which requires the identification and mitigation of substantial adverse impacts that may affect the significance of eligible historical and archaeological resources for applicable discretionary projects.

California Environmental Quality Act

CEQA requires a lead agency to analyze whether historic and/or archaeological resources may be adversely impacted by a proposed discretionary project. Under CEQA, a "project that may cause a substantial adverse change in the significance of a historic resource is a project that may have a significant effect on the environment" (PRC Section 21084.1). Answering this question is a two-part process: first, the determination must be made as to whether the

proposed project involves cultural resources. Second, if cultural resources are present, the proposed project must be analyzed for a potential "substantial adverse change in the significance" of the resource.

Historical Resources

According to State CEQA Guidelines Section 15064.5, for the purposes of CEQA, historical resources are:

- A resource listed in, or formally determined eligible . . . for listing in the CRHR (PRC 5024.1; California Code of Regulations [CCR] Title 14, Section 4850 et seq.).
- A resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significance in a historic resources survey meeting the requirements of PRC Section 5024.1(g).
- Any object, building, structure, site, area, place, record, or manuscript that the lead agency determines to be eligible for national, state, or local landmark listing; generally, a resource shall be considered by the lead agency to be historically significant (and therefore a historic resource under CEQA) if the resource meets the criteria for listing on the CRHR (as defined in PRC Section 5024.1; 14 CCR Section 4852).

Resources nominated to the CRHR must retain enough of their historic character or appearance to convey the reasons for their significance. Resources whose historic integrity (as defined above) do not meet NRHP criteria may still be eligible for listing in the CRHR.

According to CEQA, the fact that a resource is not listed in or determined eligible for listing in the CRHR or is not included in a local register or survey shall not preclude the lead agency from determining that the resource may be a historical resource (PRC Section 5024.1). Pursuant to CEQA, a project with an effect that may cause a substantial adverse change in the significance of a historical resource may have a significant effect on the environment (State CEQA Guidelines Section 15064.5(b)).

Substantial Adverse Change and Indirect Impacts to Historical Resources

The State CEQA Guidelines specify that a "substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired" (State CEQA Guidelines Section 15064.5). Material impairment occurs when a project alters in an adverse manner or demolishes "those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion" or eligibility for inclusion in the NRHP, CRHR, or local register. In addition, pursuant to State CEQA Guidelines Section 15126.2, the "direct and indirect significant effects of the project on the environment shall be clearly identified and described, giving due consideration to both the short-term and long-term effects."

The following guides and requirements are of particular relevance to this study's analysis of indirect impacts to historic resources. Pursuant to State CEQA Guidelines Section 15378, study of a project under CEQA requires consideration of "the whole of an action, which has the potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment." State CEQA Guidelines Section 15064(d) further defines direct and indirect impacts:

(1) A direct physical change in the environment is a physical change in the environment, which is caused by and immediately related to the project.

(2) An indirect physical change in the environment is a physical change in the environment, which is not immediately related to the project, but which is caused indirectly by the project. If a direct physical change in the environment in turn causes another change in the environment, then the other change is an indirect physical change in the environment.

(3) An indirect physical change is to be considered only if that change is a reasonably foreseeable impact, which may be caused by the project.

Archaeological Resources

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

(1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.

(2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.

(3) Is directly associated with a scientifically recognized important prehistoric or historic event or person.

If it can be demonstrated that a proposed non-ministerial project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that they cannot be left undisturbed, mitigation measures are required (PRC Sections 21083.2(a), (b), and (c)). State CEQA Guidelines Section 15064.5(c)(4) notes that, if an archaeological resource is neither a unique archaeological resource nor a historical resource, the effects of the project on those resources shall not be considered to be a significant effect on the environment.

California Register of Historical Resources

Created in 1992 and implemented in 1998, the CRHR is “an authoritative guide in California to be used by state and local agencies, private groups, and citizens to identify the state’s historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change” (PRC Sections 21083.2 and 21084.1). Certain properties, including those listed in or formally determined eligible for listing in the NRHP and California Historical Landmarks numbered 770 and higher, are automatically included in the CRHR. Other properties recognized under the California Points of Historical Interest program, identified as significant in historical resources surveys, or designated by local landmarks programs, may be nominated for inclusion in the CRHR. According to PRC Section 5024.1(c), a resource, either an individual property or a contributor to a historic district, may be listed in the CRHR if the State Historical Resources Commission determines that it meets one or more of the following criteria, which are modeled on NRHP criteria:

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

Resources nominated to the CRHR must retain enough of their historic character or appearance to convey the reasons for their significance. Resources whose historic integrity does not meet NRHP criteria may still be eligible for listing in the CRHR.

California Historical Landmarks

Often associated with the iconic highways signage and monument placards, California Historical Landmarks (CHL) are the remnants of the State's earliest program to identify and commemorate historic resources. Established in 1931, the CHL program primarily focused on commemorating buildings, sites, and other properties of particular historic significance within California. Initially, the emphasis of the early CHL program was on recognizable locations associated early California history, including missions, battlefields, settlements, and California Gold Rush sites. These early designations did not require criteria for evaluation significance or other metrics for determination, but was rather directed by the efforts of non-profit organizations, such as the Native Sons of the Golden West and Native Daughters of the Golden West. However, to give the program additional credibility, the California Historical Landmarks Advisory Committee (now the State Historical Resources Commission) was established, which adopted formal registration criteria in 1962 (OHP, n.d.)

To qualify was designation as a CHL, a resource must exhibit significance under one of the following criteria:

- The resource must be the first, last, only, or most significant of its type in the state or within a large geographical region (Northern, Central, or Southern California).
- Associate with an individual or group having a profound influence on the history of California.
- A prototype of, or an outstanding example of a period, style, architectural movement or construction, or is one of the more notable works or the best surviving work in a region of a pioneer architect, designer or master builder.

Because the CHL program predates the other historic resource registration programs, only those CHLs with a landmark number of 770 and above are automatically listed in the CRHR. Those CHLs with earlier numbers are identified as needing future evaluation using current practices and significance criteria to affirm historical significance and listing in the CRHR. The CHL program is not widely used since the creation of the CHRH, and is largely limited to environmental review of State-owned properties under Public Resources Code Section 5024 and 5024.5, although resources can still be nominated and designated

Treatment of Human Remains

The disposition of burials falls first under the general prohibition on disturbing or removing human remains under California Health and Safety Code (CHSC) Section 7050.5. More specifically, remains suspected to be Native American are treated under CEQA in CCR

Section 15064.5; PRC Section 5097.98 illustrates the process to be followed if remains are discovered. If human remains are discovered during construction, no further disturbance to the site shall occur, and the County Coroner must be notified (CCR 15064.5; PRC 5097.98).

Assembly Bill 52

Assembly Bill (AB) 52 amended PRC Section 5097.94 and added PRC Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3.

Consultation with Native Americans

AB 52 formalizes the lead agency–tribal consultation process, requiring the lead agency to initiate consultation with California Native American groups that are traditionally and culturally affiliated with the project, including tribes that may not be federally recognized. As the lead agency, the City of Atascadero is required to begin consultation prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report.

Tribal Cultural Resources

Section 4 of AB 52 adds PRC Section 21074(a) and (b), which address tribal cultural resources and cultural landscapes. Section 21074(a) defines tribal cultural resources as one of the following:

> (1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
>
> > (A) Included or determined to be eligible for inclusion in the California Register of Historical Resources.
> >
> > (B) Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.
>
> (2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

Section 1(a)(9) of AB 52 establishes that "a substantial adverse change to a tribal cultural resource has a significant effect on the environment." Effects on tribal cultural resources must be considered under CEQA. Section 6 of AB 52 adds Section 21080.3.2 the PRC, which states that parties may propose mitigation measures "capable of avoiding or substantially lessening potential significant impacts to a tribal cultural resource or alternatives that would avoid significant impacts to a tribal cultural resource." Further, if a California Native American tribe requests consultation regarding project alternatives, mitigation measures, or significant effects to tribal cultural resources, the consultation shall include those topics (PRC Section 21080.3.2[a]). The environmental document and the mitigation monitoring and reporting program (where applicable) shall include any mitigation measures that are adopted (PRC Section 21082.3 [a]).

Local

Neither the County of San Luis Obispo or the City of Atascadero have historic preservation ordinances or preservation programs specific to cultural and historical resources. While the City does not have a formal historic preservation program, there are several approved zoning overlays and planning documents that outline specific goals and policies related to the treatment of cultural resources within the city.

Historic Sites Overlay Zone

Initially developed in 1983, the City has integrated a Historical Site Overlay Zone (HS) category into its municipal code. Outlined in §9-3.621, the HS overlay is applied to areas where there are significant cultural resources, including archaeological and historical sites, and is intended to "protect historic structures and sites by requiring new uses and alterations to existing uses be designed with consideration for preserving and protecting" the resource. The standards pertain to both 1) new structures and uses, and 2) modifications to historic structures and outline the permitting and environmental review processes for each.

Archaeological Resources

Specific to archaeological resources within the HS overlay (Atascadero Municipal Code §9-3.623), conditional use permits may only be issued if the following findings are made:

1. The site design and development as finally proposed incorporates adequate measures to ensure the archaeological resources will be acceptably and adequately protected; or

2. Where site design and development proposals cannot be feasibly be chanced and intrusion into or disturbance of archaeological resources will result, that construction will use appropriate methods to protect the integrity of the site, including possible relocation of graves and artifacts.

Historic Resources

With conditional use permits involving historic resources – buildings, structures landmarks and districts – within the HS overlay, may be approved if they meet one of the following conditions (Atascadero Municipal Code §9-3.625):

a) The height, bulk, location, structural materials, landscaping and other aspects of the proposed use will not obstruct public views of the historic structure or of its immediate setting;
b) Any proposed alteration or removal of structural elements, or clearing of landscaping or natural vegetation features will not damage or destroy the character of insignificant historical features and settings;
c) Any proposed remodeling or demolition is unavoidable because it is not structurally or economically feasible to retain or restore existing structures or features.

In practice, the HS overlay is largely unused by the City. It does not appear in any zoning map published by the City, and communications with City Planning Staff have determined that the usage of the HS overlay has been limited to select properties where planned development projects have been applied for and approved. Despite this, it provides the City with a framework and powerful tool for the preservation and management of historic and cultural resources.

City of Atascadero 2025 General Plan

The General Plan is composed of several elements, including the Land Use, Open Space and Conservation (LOC) Element, the Circulation Element, Safety and Noise Element, and the Housing Element. Each includes specific goals, policies, and programs that inform short and long-term decision-making in the community.

Goals, policies, and programs pertinent to cultural resources included within the LOC Element are listed here:

Land Use, Open Space and Conservation Element

Goal LOC1: *Protect and preserve the rural atmosphere of the community by assuring "elbow room" for residents by means of maintenance of large lot sizes which increase in proportion to distance beyond the Urban Core.*

- **Policy 1.1:** Preserve the rural atmosphere of the community and assure "elbow room" in areas designated for lower density development by guiding new development into the Urban Core to conform to the historic Colony land use patterns of the City and to respect the natural environment, hillside areas, and existing neighborhoods.

Goal LOC6: *Preserve natural flora and fauna and protect scenic lands, sensitive natural areas, historic buildings and cultural resources.*

- **Policy 6.1:** Ensure that development does not degrade scenic and sensitive areas, including historic sites, creeks, riparian corridors, wetlands, woodlands, hillsides and other valuable habitats.

Program 5. Public and private development in close proximity to scenic and sensitive lands, including creek reservations, wooded areas, flood plains, prominent view sheds and historic sites shall be designed to minimize impacts.
Program 6. Scenic and open space easements, parklands and open space dedications shall be required as mitigation for subdivisions and development projects that impact floodplains, creek reservations, wooded areas, scenic backdrops, sensitive areas, historic sites, cultural sites, and similar areas.

- **Policy 6.2:** Protect prehistoric cultural resources from disturbance associated with development.

Program 1. Maintain a current GIS-based map of generalized areas of known archaeological resources.
Program 2. For discretionary projects within the generalized areas of archaeological resources, require Phase I surveys to determine the extent and significance of archaeological sites prior to approval.
Program 3. For discretionary projects located in areas of known resources, require Phase II surveys to determine the significance and mitigation requirements for identified resources.
Program 4. Require short and long-term mitigation measures for significant archaeological resource sites; include avoidance of impacts, burial under sterile fill, and/or monitoring of earthmoving activities.
Program 5. If determined appropriate by a qualified archaeologist, actively involve Native Americans with any work located within known archaeological sites.
Program 6. If archaeological resources are unearthed during construction, suspend all earth-disturbing work until appropriate mitigation is established.

- **Policy 6.3:** Encourage conservation and preservation of neighborhoods, Colony Homes and sound housing, including places and buildings of historical and architectural significance.

Program 1. Actively utilize the Historic Overlay zoning district to protect known historic structures, significant Colony homes and Colony sites.
Program 2. Develop a GIS based mapping inventory and protection ordinance for the historic Colony homes

- **Policy 6.4:** Encourage conservation and preservation of structures and house that have historical and architectural significance.

Program 1. Protect historic buildings and sites. Atascadero's historic buildings and features shall be preserved and protected in recognition of the role the community's past plays in its present and future. Historic overlay zoning shall be utilized to protect appropriate historic districts.
Program 2. Utilize the State Historic Building Code to encourage rehabilitation, preservation, restoration or relocation of historic buildings listed or deemed on the local, State or Federal register
Program 3. Implement the Historic Site (HS) overlay zone to help preserve and protect historic Colony homes.

A. Develop and adopt a comprehensive inventory of historic resources.
B. Identify HS overlay boundaries on zoning map.

Program 4. Implement the Historic Site (HS) overlay zone to help preserve and protect historic Colony homes.
Program 5. Update the PD (Planned Development) overlay zone to include retention and rehabilitation of historic resources as a primary justification for PD zoning regulation standards
Program 6. Update the City's Appearance Review Manual to include preservation guidelines for preservation, rehabilitation, and maintenance of historic properties.
Program 7. Develop incentives for retaining and rehabilitating Atascadero's historic resources including:

A. Exceptions to development regulations;
B. Conservation Districts;
C. Staff technical assistance;
D. Program to facilitate relocation instead of demolition; and
E. Mill's Act contracts.

2021-2028 Housing Element

The 2021-2028 Housing Element specifically refers to historic preservation and conservation practices through the Historic Site (HS) and Sensitive Resources (SR) Overlay zoning designations.

Historical Preservation

To promote the conservation, preservation, protection, and enhancement of Atascadero's historical and architecturally significant structures, the City adopted a Historic Site Overlay (HS) zone. The standards are intended to protect historic structures and sites by requiring new uses and alterations to existing uses to be designed with consideration for preserving

and protecting the historic resource. Given the quality of Atascadero's historical and architecturally significant structures—and the contribution of these structures to the image and quality of life in Atascadero—the historic preservation policies and regulations are reasonable and appropriate and do not pose an unreasonable constraint to residential development in the City of Atascadero. No sites identified in the vacant land inventory are subject to the HS overlay.

Goals, policies, and programs pertinent to cultural resources included within the 2021-2028 Housing Element are listed here:

Goal HOS4: *Protect and conserve the existing housing stock and neighborhoods, including the City's affordable housing stock.*

- **Policy 4.1:** Encourage conservation and preservation of neighborhoods and sound housing.
- **Policy 4.2:** Promote and preserve affordable housing.
- **Policy 4.3:** Encourage conservation and preservation of houses that have historical and architectural significance.
- **Policy 4.4:** Leverage state and federal loans and grants to assist in preserving existing housing and rehabilitating unsound housing structures.

Program 4.F: Historic Building Conservation Preserve and protect homes that have historical and architectural significance, such as the Colony homes, through continued implementation of the Historic Site (HS) overlay zone and by maintaining a GIS-based map of historic buildings and sites.

2000 Downtown Revitalization Plan

The City's Downtown Revitalization Plan is an area specific plan that outlines the City's vision and goals for the redevelopment of downtown. Modeled after the National Trust for Historic Preservation's "Main Street Program," the Downtown Revitalization Plan is centered around the preservation and careful stewardship of the downtown area as a form of placemaking that can incentivize the enhancement of the area's unique character simultaneously with economic improvement through a mixture of private, public, and non-profit support. Specifically, the Main Street approach is based upon four key aspects: design, organization, promotion, and economic restructuring (Crawford, Multari, Clark & Mohr 2000).

Key goals in the plan specific to the preservation of cultural resources include:

- Develop a distinctive architectural character for the downtown while allowing for reasonable design flexibility.
- Encourage more intense development at appropriate locations within downtown.
- Create a downtown identity program that preserves the historic character of the City
- Develop a façade improvement program (loan, grants, etc.)

Downtown Design Guidelines

The City's "Downtown Design Guidelines" is an appended document within the Downtown Revitalization Plan that are specifically intended to 1) assist in the revitalization of downtown Atascadero, 2) provide for infill commercial development of high architectural quality that is compatible with existing attractive buildings, and 3) promote the conservation of reuse of existing buildings with preferred design quality. Collectively, the design guidelines aim to

protect the essential architectural features of downtown and the essential architectural features through rehabilitation and preservation to contribute further to the historic character in downtown Atascadero.

While the Downtown Design Guidelines primarily provide a framework for new and sensitive infill development within the downtown core of Atascadero, some guidelines related to preserving cultural resources are outlined, in addition to adherence to the Secretary of the Interior's Standards for the Treatment of Historic Properties, as published by the National Park Service. Identified on pages 51 through 54 of the document, these guidelines are centered around the overall goal that "when an existing structure is to be renovated or added to, care should be taken to complete the work in a manner that respects the original design character of the structure" (Crawford, Multari, Clark & Mohr 2000).

6.3 Cultural Setting

Prehistoric Overview

California prehistory is divided into three broad temporal periods that reflect similar cultural characteristics throughout the state: Paleoindian Period (ca. 9000–6000 B.C.), Archaic Period (6000 B.C.–A.D. 500), and Emergent Period (A.D. 500–Historic Contact) (Fredrickson 1973, 1974, 1994). The Archaic is further divided into Lower (6000–3000 B.C.), Middle (3000–1000 B.C.), and Upper (1000 B.C.–A.D. 500) Periods. These divisions are generally governed by climatic and environmental variables, such as the drying of pluvial lakes at the transition from the Paleoindian to the Lower Archaic period.

The study area lies in the Central Coast Archaeological Region, which is one of eight arbitrary organizational divisions of the state (Moratto 1984). This region extends southward from Monterey Bay through Big Sur to Morro Bay, and includes southern Santa Cruz and Santa Clara Counties, all of San Benito and Monterey Counties, and most of San Luis Obispo County.

Several chronological sequences have been devised to understand cultural changes within the Central Coast Region subsequent to the Paleoindian and Milling Stone Periods. The Milling Stone Period (ca. 6500–3500 B.C.) was first described by Wallace (1955, 1978) as part of his synthesis of earlier studies and development of a comprehensive southern California coastal region sequence, a chronological scheme that is still widely used today. Initially, Central Coast researchers relied on the cultural sequences developed for the San Francisco Bay area to the north, the Central Valley to the east, and the Santa Barbara region to the south. Breschini and Haversat (1980) proposed the Sur and Monterey Patterns to describe Central Coast occupations dating younger than 5,000 years. Jones and Waugh (1995) presented an integrated Central Coast sequence after the development of cultural resource management in the 1980s and ensuing excavations of numerous archaeological sites. Three periods are presented in their prehistoric sequence subsequent to the Milling Stone Period: Early, Middle, and Late Periods.

More recently, Jones and Ferneau (2002:213) updated the sequence following the Milling Stone Period, as follows: Early, Early–Middle Transition, Middle, Middle–Late Transition, and Late Periods. We rely here on the Jones and Ferneau (2002) chronological sequence for the Prehistoric Period within the Central Coast Region subsequent to the Paleoindian and Milling Stone Periods. It has become apparent that the archaeology of the Central Coast Region subsequent to the Milling Stone Period is distinct from that of the Bay Area and Central Valley, although the region has more in common with the Santa Barbara Channel

area during the Middle and Middle–Late Transition Periods, but few similarities during the Late Period (Jones and Ferneau 2002:213). See also Jones et al. 2007 for a similar approach.

Ethnography

The area was historically occupied by the Salinan, with the northernmost subdivision of the Chumash, the Obispeño (after Mission San Luis Obispo de Tolosa), bordering to the south (Gibson 1983; Kroeber 1925). However, the precise location of the boundary between the Chumashan-speaking Obispeño Chumash and their northern neighbors, the Hokan-speaking Salinan, is currently the subject of debate (Milliken and Johnson 2005). Jones and Waugh (1995:8) state that "those boundaries may well have fluctuated through time in response to possible shifts in economic strategies and population movement." As such, a discussion of both groups is provided below.

Salinan

The Salinan language generally has been regarded as part of Hokan linguistic stock (Hester 1978:500; Shipley 1978:86), but more recent linguistic analysis indicates Salinan has no close relatives and no demonstrated connections to other languages (Mithun 2004:482). Mason (1918) recorded two Salinan dialects, northern (Antoniaño) and southern (Migueleño) divisions, associated with the people administered by the Spanish from Mission San Antonio de Padua and Mission San Miguel Arcángel, established in 1771 and 1797, respectively. Neophytes at Mission San Antonio included Salinan living along the coast, referred to as "Playanos." Little is known about Salinan names for themselves (Kroeber 1925).

The semi-sedentary Salinan occupied a rugged, mountainous area on the south-central California coast (Kroeber 1925; Hester 1978). Heavily wooded hills and mountains of the South Coast Ranges dominated the interior, with sheer cliffs and rocky beaches along the Pacific coast. Salinan territory was bounded on the north by the Esselen and Costonoan, to the east by the Yokuts, and the south by Chumashan groups. The Chumash and Esselen languages were previously thought to be part of the Hokan linguistic family, but both are now considered isolate stocks (Mithun 2004). The Costonoan and Yokuts languages were derived from Penutian linguistic stock, which is widespread in central California (Shipley 1978:82–84). The actual extent of Salinan territory is uncertain, with different ethnographers ascribing large variations in range (see Hester 1978:500). In general, their lands included the area between the coast and approximately 50 miles inland, from near the City of Soledad in the Salinas River Valley in the north, southward to north of the cities of San Luis Obispo and Morro Bay. As described by Henshaw and Kroeber (1910:145), their territory extended from the "sea to the main ridge of the Coast Range, and from the head of the Salinas drainage to a short distance above Soledad."

Salinan villages were recorded near the missions and along interior drainages, with some habitation areas along the coast (Hester 1978:501). No permanent sites were recorded in the Coast Range, although temporary camps were likely to have existed. Their subsistence economy was one of hunting and gathering. The surrounding environment was varied and rich, and they exploited the mountains, foothills, valleys, and coast. As with most native Californians, acorns were a staple food, supplemented by wild oats, sage seeds, berries, mescal, and wild fruits. Additional resources exploited by coastal and interior groups included large and small mammals, such as deer, bear, and rabbits, as well as fish. The full extent of their villages is unknown, but Hester (1978:501) locates 21 from earlier records. From north to

south, villages along the segment route include *Ginau*, *Atnel* (near today's King City), *Tsho-hwal*, *Teshaya*, and *Him'-se-en'* (south of Mission San Miguel).

Salinan houses were domed, up to 10 feet square, constructed of poles, and covered with tule or rye grass (Hester 1978:501). Other structures included birthing huts, dance houses, and semi-subterranean sweathouses, among additional communal structures. Acorns were stored in willow-twig granaries. The Antoniaño group practiced cremation of their most distinguished individuals. Among the Migueleño, the deceased were wrapped in skins and their possessions burned.

A variety of tools and implements, some of which are inferred from the archaeological record in the area, were employed by Salinan groups (Hester 1978:501). These included bows and arrows, traps, nets, blinds, throwing stocks and slings, spears, harpoons, and hooks. Bone and shell tools included bone awls and C-shaped shell fishhooks. Foods were processed using stone mortars and pestles, metates, basket mortars, bedrock mortars, stone bowls, and wooden mortars. The Salinan also made a wide variety of baskets; cooking baskets, as well as earth ovens, were used in food preparation.

There is little recorded of Salinan subsistence economy, but they would have taken full advantage of the plant and animal resources available in the river valley, foothills, and mountains within their territory. They also had a stretch of coastline from which to gather shellfish, fish, and marine mammals.

Ornaments included items made of steatite, serpentine, and abalone shell. Clothing included basket hats, rabbitskin or otterskin cloaks, and tule aprons. The Salinan also used beads made from mussel and abalone shell for currency and had musical instruments, such as cocoon rattles, wooden flutes, and bone whistles.

Some of Salinan material culture was obtained through an important trade network, established with neighboring groups (Hester 1978:500–501). In exchange for saltgrass salt, obsidian, seeds, lake fish, and possibly tanned animal skins, Salinan groups traded shell and shell beads with the Yokuts to the east. Shell ornaments, wooden dishes, and steatite vessels were obtained from the Chumash to the south, but apparently, the Salinan did not trade with a rival trade group, the Costonoan to the north.

Like other indigenous Californians living near the coastal missions, Salinan population decreased rapidly after the arrival of the Spanish. A relatively small population to begin with, the Salinan were decimated by diseases introduced by the missions and later settlers. By 1831, their number was fewer than 700, and their population continued to decrease even more rapidly after secularization of the missions (Hester 1978:503). By the turn of the twentieth century, only three families survived within their traditional territory. The California Indian Roll of 1928 registered only 36 Salinans, and research 5 years later could only locate one Antoniaño family, comprised of four elderly siblings (Hester 1978:503).

Chumash

The term Chumash initially applied only to the people living on Santa Cruz Island (King 1994:6). Chumash now refers to the entire linguistic and ethnic group of societies that occupied the coast between San Luis Obispo and northwestern Los Angeles County, including the Santa Barbara Channel Islands, and inland to the western edge of the San Joaquin Valley. Neighboring groups included the Salinan to the north, the Southern Valley Yokuts and Tataviam to the east, and the Gabrielino (Tongva) to the south. Chumash place

names in the project vicinity include *Pismu* (Pismo Beach), *Tematatimi* (along Los Berros Creek), and *Tilhini* (near San Luis Obispo) (Greenwood 1978:520).

The Chumash spoke six closely related Chumashan languages, which have been divided into two broad groups—Northern Chumash (consisting only of Obispeño) and Southern Chumash (including Purisimeño, Ineseño, Barbareño, Ventureño, and Island Chumash) (Mithun 2004:389). While Island Chumash was the most divergent of the five southern languages, Ventureño may have had the most internal variation, with at least six distinct dialects. The Chumashan language currently is considered an isolate stock with a long history in the Santa Barbara region (Mithun 2004:304).

The earliest European visits to the Chumash region began with Cabrillo, Vizcaíno, and other naval explorers to the southern California coast in the 1500s. The first land expedition through the area occurred in A.D. 1769 when Gaspar de Portolà led an overland expedition from the newly established settlement at San Diego to the San Francisco Bay. The first permanent, non-indigenous settlement in the area occurred with the founding of Mission San Luis Obispo in 1771, and soon numerous troop and supply trains passed through Chumash lands on the way from San Diego to more northerly missions and outposts. Within Chumash lands, additional Franciscan missions were founded at La Purísima, Santa Ynez, Santa Barbara, San Buenaventura, and San Fernando. When the pueblo of Los Angeles was established in 1781, the Ventureño Chumash were recruited as laborers.

Chumash subsistence varied between coastal and inland resources, but like many indigenous Californian groups, the acorn was a dietary staple for the mainland Chumash. Acorns were gathered in the autumn and stored in villages, where they were ground to a meal, leached, and then cooked daily. In addition to acorns—mainly from the coast live oak—other nuts, such as pine nuts and walnuts, were collected. Chumash diet also included cattail roots, fruits and pads from cactus, and bulbs and tubers of plants such as amole (Miller 1988:89). Yucca stalks were harvested and roasted, and the buds and flowers also were gathered. Staples included small hard seeds of several annual and perennial plants, such as grass, chia and other sages, and buckwheat. Seasonal resources included berries (blackberry, elderberry, grape, madrone, laurel, and wild cherry), mushrooms, and cress.

The effect of mission influence upon local native populations was devastating. The dissolution of their culture alienated them from their traditional subsistence patterns, social customs, and marriage networks. European diseases, against which they had no immunity, reached epidemic proportions, and Chumash populations were decimated (Johnson 1987). The increase in agriculture and the spread of grazing livestock into their collecting and hunting areas made maintaining traditional lifeways increasingly difficult. Although most Chumash eventually submitted to the Spanish and were incorporated into the mission system, some refused to give up their traditional existence and escaped into the interior regions of the state, as refugees living with other tribes. With the secularization of mission lands after 1834, traditional Chumash lands were distributed among grants to private owners. Only in the area of Mission Santa Barbara and Mission San Fernando Rey de España were several small ranchos granted to neophytes of these missions, providing a secure home and gardens for a few people.

Most Chumash managed to maintain a presence in the area into the early twentieth century as cowboys, farm hands, and town laborers. The Catholic Church provided some land near Mission Santa Inés for ex-neophytes. This land eventually was deeded to the U.S. government in 1901 as the 127-acre Santa Ynez Reservation. Since the 1970s, Chumash descendants living

in the City of Santa Barbara and the rural areas of San Luis Obispo, Santa Barbara, and Ventura Counties have formed social and political organizations to aid in cultural revitalization to protect sacred areas and archaeological sites and to petition for federal recognition.

6.4 Archaeological Resources

Archaeological and other heritage resources can be damaged or destroyed through uncontrolled public disclosure of information regarding their location. Sensitive information regarding the nature and location of archaeological sites should not be disclosed to the general public or unauthorized persons. Information regarding the location, character, or ownership of a cultural resource is exempt from the Freedom of Information Act pursuant to 54 U.S.C. 307103 (National Historic Preservation Act) and 16 U.S.C. Section 470(h) (Archaeological Resources Protections Act). As such, this section includes only a brief overview of the types of resources known to occur in the plan area.

Archaeological resources are defined as the surface and subsurface remains of sites no longer in use or maintained in which evidence of past activity is preserved, and may be either prehistoric or historic, or both. Prehistoric examples of the types of archaeological sites that are known to exist within the Planning Area and vicinity include:

- Lithic debris and tool scatters are characterized by the presence of tool stone manufacturing waste flakes, core fragments, and formed flaked stone tools such as projectile points, knives, and scrapers.
- Habitation sites are characterized by long-term, extended use, with various activity areas, which may include evidence of food processing, tool manufacturing, and ceremonial events.
- Temporary campsites are generally limited use sites may contain evidence of food manufacturing or tool production.

Historic examples include:

- Remnants of historic ranches, facilities, and residences;
- Refuse pits, trash scatter, and privies;
- Stone features (walls, cairns); and
- Foundation remnants.

6.5 Historical Context

Atascadero

The city has its roots in the Atascadero Colony, the utopian brainchild of Edward Gardner (E.G.) Lewis, an enterprising publisher, promoter, and land developer. For his planned community, Lewis envisioned “a city in the country, especially adapted to the automobile, with small orchard estates, residential section and all of the civic, educational and businesses as well as the administrative buildings grouped into a civic center” (Petry 2012:79). The property he selected, in northern San Luis Obispo County, was advantageously located on the main line of the Southern Pacific Railroad, bisected by the state highway, midway between Los Angeles and San Francisco, “the two great markets of the Pacific Coast” (Allan 2008:18).

Lewis's choice of the Atascadero region also took advantage of an exceptionally extensive and relatively undeveloped tract of land that had historically been part of three Mexican-era land grants: Rancho Santa Margarita and Rancho Atascadero to the south of Atascadero Creek, and Rancho La Asunción to the north. As was the case with California ranchos in general, cattle ranching had been the dominant land use.

By the late nineteenth century, nearly all of Ranchos Asunción and Atascadero, as well as a portion of Rancho Santa Margarita and adjacent government land, had been acquired by Jason H. Henry—a rancher who kept the large holdings intact. In 1913, E.G. Lewis purchased the entire Henry Ranch, encompassing some 23,000 acres of level or gently rolling terrain that had seldom if ever been plowed. Lewis systematically worked with a series of civil engineers, agricultural specialists, urban planners, and other experts to lay out an entirely new community, with roads, irrigation systems, and orchard trees established before house construction would begin. Specific areas of the Colony were designated for particular kinds of land uses. Beyond the downtown core, with the smaller residential parcels, two-story Mercantile Building as the Colony's retail center, and impressive civic buildings designed by San Francisco-based architects Walter D. Bliss and William B. Faville (Bliss and Faville), scores of larger, outlying "blocks" were intended for development as family-owned orchard and farm properties (**Figure 6-1**) (Travis, 1960).

Figure 6-1: Civic Center of Atascadero with the Colony Administration Building (now City Hall) at center, ca.1918



Source: California Polytechnic University, San Luis Obispo Library, Regional Photograph Collection

The Atascadero Colony was promoted extensively throughout the U.S., Canada, Western Europe, and other English-speaking countries. Initially, Lewis intended for the civic core of the Colony with its grand buildings to be completed prior to residential construction, although the extensive construction costs of the new community required aggressive

marketing campaigns to begin selling the plotted residential lots (Atascadero Historical Society, 2019). In 1914, while the Colony was still under construction, a convention was promoted for people to visit the Colony. Temporary accommodations were set up as a tent city and visitors were able to view the work at hand while also visiting the Colony's sale office. The tent city model grew over the following year while residents waited for new residences to be constructed. The Colony, often referred to as "Atascadero Estates," took form as residences were constructed. In many instances, residents of the tent city first constructed garages, chicken coops, and established gardens while waiting for their residences to be completed (**Figure 6-2**). By the end of 1915, several homes were finished and the large public buildings were coming closer to completion, including the Administration Building (now City Hall) which would serve as the offices for the Colony Holding Corporation, sales office, community center, and other important communal functions; and the Atascadero Printery, which housed extensive printing press and lithographic equipment to produce the Colony's newspaper and promotional materials, the *Illustrated Review* world news publication, and contracted printing for the *San Francisco Chronicle* and the *Los Angeles Times* (**Figure 6-3**) (Travis, 1960; Mackey, 2000: 8.1).

Figure 6-2: Typical early Atascadero Colony Residences, ca.1918



Source: California Polytechnic University, San Luis Obispo Library, Regional Photograph Collection

Figure 6-3: Atascadero Printery, ca.1920



Source: California Polytechnic University, San Luis Obispo Library, Regional Photograph Collection

Through 1917, Atascadero was booming as additional public, commercial, industrial and residential developments were completed (**Figure 6-4**). However, following the U.S. entering World War I, the Colony was facing new economic pressures. With ramp up in the war effort, building supplies were in short supply and a moratorium on non-essential new construction was in place. Additionally, plans for businesses, factories, and other industrial centers in Atascadero were shelved, except for a few enterprises related to agriculture and food processing. By the mid-1920s, development momentum in Atascadero had waned and the financial challenges faced by Lewis and the Colony's holding companies became insurmountable (Mackey, 2000: 8.15-8.18). Lewis ultimately declared bankruptcy following an alternative scheme for developing a new community on the Palos Verdes Peninsula in which he used his mail order lists to actively fundraise for the project. Lewis was ultimately convicted of using the U.S. mail to commit fraud and was imprisoned (Nayyyar, 2014:17-18).

Figure 6-4: View of Atascadero, ca.1925

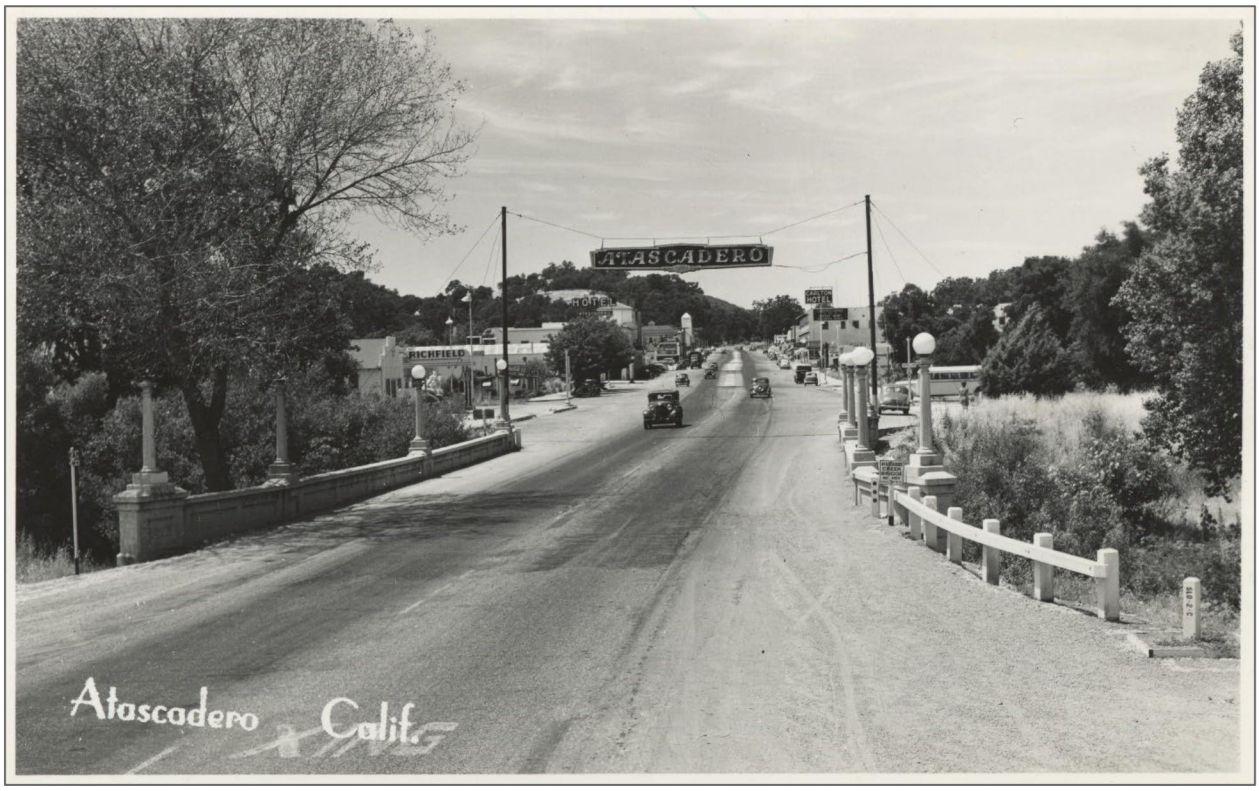


Source: California Polytechnic University, San Luis Obispo Library, Regional Photograph Collection

Following Lewis' indictment, the attorney Oscar Willet became the administrator of the Colony Holding Company. Contrary to the original Colony plan, Willet began selling off company owned property for private development. During this period, there was a degree of concentrated commercial development, particularly along the main corridors along El Camino Real and Traffic Way, shifting from the central Mercantile Building, which had served as a pseudo company store for the Colony. The commercial corridors developed similarly to other communities with a variety of two-story commercial blocks, composed in common and popular architectural styles of the period, which housed a variety of businesses, including retail, restaurants, hotels, entertainment venues, and an increasing number of automobile related services (**Figure 6-5**). Under the direction of Willet, the Colony also purchased the community of Eaglet, which was a small town that was centered along El Camino Real and surrounded by Colony lands. Initially, residents in Eaglet rejected the Lewis plan and the various restrictions he had in order to develop his vision; however, with Lewis by the wayside and Atascadero developing in a more conventional capacity during this period, Eaglet was easily incorporated into the broader Colony community (Chung 2019:38).

The onset of the Great Depression slowed the modest development of Atascadero, although many of the buildings and enterprises were able to continue in some capacity. In the lead up to Word War II, the U.S. Army opened Camp Roberts, which was one of the largest training centers on the West Coast. The influx of people and capital was a catalyst for development during this period, with the population of the Atascadero area growing by nearly 50% over the course of the war (Chung 2018:38–39).

Figure 6-5: View of Atascadero along El Camino Real, ca.1945



Source: California State Library, California History Room Picture Collection

In the post-war years, Atascadero underwent a similar transformation to other communities in California. The influx of people saw increased residential development in a series of tract homes, while there was also an influx of both federal and state government funding. One of the most drastic interventions was the construction of the new U.S. Highway 101. Funded by the U.S. Government, the new highway alignment was constructed several hundred feet west of downtown and replaced El Camino Real as the main thoroughfare, while also increased connections between Atascadero and the rest of California through the expanding interstate system. The California Government also invested in the community with the construction of the Atascadero State Hospital (1954), which is a state-run forensic psychiatric hospital located southwest of downtown Atascadero. As a major employer, the hospital brought an influx of people into the community during this period. Additionally, private investment and the development of other industries spurred growth in the community. The increased diversity in the economy resulted in the construction of a variety of new property types, including multi-family and mixed-use developments, particularly within the central community (Chung 2018:42).

In 1979, Atascadero incorporated as an independent City and steady growth in the community continued over the following decades. While the original vision of the Atascadero Colony did not materialize, the lack of extremely intensive developmental pressures allowed for steady and manageable growth in the community, which effectively preserved the original plan for the community, including the most prominent civic buildings and spaces, as well as some of the rural and agricultural aesthetics of the original Colony ideal (Entezari & Nayyar 2004:18).

6.6 Historic Resources

Currently, the City does not maintain a comprehensive local register or inventory historical resources. To provide insight into the extant resources within the City's boundaries, SWCA architectural historians reviewed the NRHP inventory databases and files available through the Library of Congress, as well as available California Office of Historic Preservation (OHP) databases, namely the California Built Environment Resource Directory (BERD) for San Luis Obispo County.

Known Historic Resources

Based upon this review of BERD entries of Atascadero and other previous studies, Atascadero contains several known historical resources that have been identified, documented and evaluated, in addition to several prospective resources that have been the subject of local study. However, this section does not provide an exhaustive list of all previously identified historical resources. Specific to BERD, which was the primary inventory source for this investigation, is a living document that undergoes various updates as new information, surveys, and other forms of documentation are provided to OHP. It is not a wholly comprehensive list of historical resources, but does provide crucial insight into previous identification efforts and some of the resources that have been evaluated for historical significance in Atascadero.

Table 6-1 outlines those properties of historical significance within Atascadero and listed in the BERD in San Luis Obispo County, including the resource name, address, property type, built date, and the assigned California Historical Resource Status Code (see **Appendix B** for a list of the California Historical Resource Status Codes):

Table 6-1: Previously Documented Historical Resources in Atascadero

Resource Name	Address	Property Type	Built Date(s)	Historic Status
Atascadero Printery	6351 Olmeda Avenue	Building	1915–1916	Listed in NRHP and CRHR
Atascadero Administration Veteran's Memorial Building (City Hall)	6500 Palma Avenue	Building	1914–1918	Listed in the NRHP and CRHR, designated CHL
Atascadero Estates Residential Historic District (AERHD)*	-	District	1913–1919	NRHP-eligible
Bucklin House	6905 Country Club Drive	Building	1930	NRHP-eligible, CRHR listed
The Doran Building	5850 El Camino Real	Building	1925	NRHP-eligible
Jorgens House	5345 Magnolia Avenue	Building	1918	NRHP-eligible, CRHR listed
Carlton Hotel	5995 Traffic Way	Building	1929	NRHP-eligible, CRHR listed

** Contributors to the Atascadero Estates Residential Historic District are outlined in Table 6-2.*

This is not an exhaustive list of historical resources in Atascadero. Other individual properties were likely determined eligible for various listings through the environmental review process for individual projects and permit applications, and may be on-file with the City's Community Development Department.

It should be noted that the BERD entries for Atascadero include multiple properties that were previously documented, evaluated, and, in many instances, found to be ineligible for listing in one or more of the relevant designation programs (see **Appendix B** for the full BERD listing for properties in Atascadero). This includes prominent properties within the community, such as the Atascadero State Hospital complex. While some of these properties have been previously evaluated, the date of those evaluations or the focus entirely on NRHP significance with no CRHR evaluation may mean that further evaluations may be required of previously evaluated buildings.

Individual Property Historical Resources

The following section provides concise summary of the previously identified and well-established historic resources in Atascadero, including dates of construction, summaries of historical significance, and a summary of the existing historic status.

- **Atascadero Administration Veteran's Memorial Building:** constructed between 1914 and 1918, the Atascadero Administration Veteran's Memorial Building, also known as "the Administration Building" and now Atascadero City Hall, served as the headquarters and central offices for the Atascadero Colony and the Colony Holding Corporation and its various subsidiaries responsible for the management and promotion of the development. Designed by Bliss & Faville, the elaborate Renaissance Revival style building was the centerpiece for the Colony, and has maintained its status as the symbol for Atascadero since it's completion (Mackey, 1975).

  In 1977, the building was formally listed in the NRHP and was determined significant for its Renaissance Revival style architecture and its role in the overall Garden City style planning of Atascadero, as an example of work by master architects Bliss & Faville, it's individual association with E. G. Lewis, and for its association with the development of Atascadero as the primary headquarters and administrative center (Mackey, 1975). In addition to being listed on the NRHP, the building is also listed in the CRHR and is designated as a California Historical Landmark (CHL) as No. 958 (OHP, 2022).

- **Atascadero Printery:** constructed between 1915 and 1916, the two-story Renaissance Revival building was designed by Walter Bliss of Bliss and Faville for E.G. Lewis. As one of the primary civic buildings to be constructed as part of the initial development of the Colony, the Atascadero Printery was essential in developing promotional materials in Lewis' *Illustrated Review*, while also providing contract printing services to major newspapers in California, which in turn partially financed development of the Colony. The Atascadero Printery is also noted as having one of the only rotogravure press machines in the Western U.S

  In 2000, the Atascadero Printery was listed in the NRHP. It was determined significant under Criterion A for its associations with the early development and promotion of the Atascadero Colony. The property is assigned a period of significance spanning between 1916 to 1924, which corresponds with its opening in 1916 and the bankruptcy

of the Colony and cessation of the *Illustrated Review* in 1924 (Mackey, 2000). The property is also listed in the CRHR.

- **Bucklin House:** constructed in 1930, the exemplary Spanish Colonial Revival style residence was the home for James Bucklin, a prominent attorney in Atascadero. Documents indicate that the residence was identified as individually eligible for listing in the NRHP in 1994, although the exact significance associated with the property is unclear at this time (Entezari & Nayyar 2004:19). However, its significant is likely related to its Spanish Colonial Revival Architecture (Atascadero Main Street Design Committee 2010: 35)

- **The Doran Building:** the two-story commercial block constructed in 1925 for Dr. J.E. Doran. The building, which featured three retail commercial spaces on the ground floor and office space on the second floor, was designed by Los Angeles-based architect O.B. Solace and is noted for its significant Neoclassical and Beaux Arts architectural style (Atascadero Main Street Design Committee, 2010: 23). It was determined individually eligible for listing in the NRHP in 2001 (OHP, 2022).

- **Jorgens House:** constructed in 1918, the Jorgens House is an original Colony residence composed in the Craftsman style. It was identified as individually eligible for listing in the NRHP in 1987. Although the exact significance of the building is unknown at this time, it is potentially related to its standing. The property is also listed on the CRHR (OHP, 2022)

- **Carlton Hotel:** constructed in 1928, the Carlton Hotel was originally a two-story commercial block with commercial storefronts along the ground floor – with national retailers Safeway, J.C. Penney, and Sprouse-Reitz – and a 52-room motel at the second floor. The building had several names in a short period, but was ultimately named the "Carlton Hotel" in the early 1930s after the building was purchased by Nola Tunks. The Atascadero Inn, a prominent early hotel in the community, burned down in 1934, leaving the Carlton as the primary and most established hotel in the Atascadero area. The building underwent various periods of remodels in the decades following including the addition of the corner clock tower in the 1950s. In 1995, extensive renovations were underway, but left incomplete with exterior walls remaining. By 2004, new ownership completed the renovation, rehabilitating much of the exterior while also adding a third floor (Atascadero Main Street Design Committee, 2010: 32).

  According to BERD, the building was evaluated in 1995 as part of a review associated with the U.S. Department of Housing & Urban Development (HUD) which found the Carlton Hotel to be individually eligible for listing in the NRHP and resulted in the automatic listing of the building in the CRHR (OHP, 2022). A review of City files found the Memorandum of Agreement (MOA) between the City and California State Historic Preservation Officer, demonstrating that the 1995 renovation utilized the Community Development Block Grant Program to fund the project. (City & SHPO, 1995). While the 1995 project stalled and the 2004 renovation to the building resulted in notable alterations to the building, the Carlton Hotel is still considered a significant building in Atascadero. While the change in historical integrity may require an updated evaluation of historical significance in the future, the Carlton Hotel should still be considered a historical resource until demonstrated otherwise.

Multi-Property Historical Resources

The only apparent multi-property historical resource identified at this time is the Atascadero Estates Residential Historic District (AERHD). While this was the only apparent and prominent historic district identified during the desktop review of historical resources, there is the potential that other identified and unidentified potentially eligible districts may be present in Atascadero.

Atascadero Estates Residential Historic District

Originally identified in 1987 by the California Department of Transportation (Caltrans) and concurred upon by the California State Historic Preservation Officer (SHPO), the AERHD is primarily defined by the original street network, infrastructure, and overall layout of the Atascadero Colony. The district was determined to be significant as a rare example of a town developed in the Garden City tradition; for its associations with the original developer of the Atascadero Colony, E. G. Lewis; and as the work of master planners and architects Walter D. Bliss and William B. Faville. As such, AERHD was determined to exhibit significance under NRHP criteria A, B, and C with an apparent period of significance spanning between 1914 and ca.1921 (Entezari & Nayyar 2014:1).

With various structures and sites as the primary contributors, and only a select few buildings that also contribute, the AERHD is somewhat unconventional in that it is largely defined by the street network with many non-contributors extending throughout the interstitial spaces. However, despite this, the significance of the Colony plan is inherently related to the foundational elements that were constructed during the early period of Atascadero between 1914 and the early 1920s. While much more was intended to be constructed as part of the original Colony plan, these never came to fruition. The completed elements are largely reflected in the contributing elements to the AERHD, which are outlined in greater detail in **Table 6-2** and the section below.

Table 6-2: Contributors to the Atascadero Estates Residential Historic District

Resource Name	Address / Location	Contributing Property Type	Built Date(s)
Atascadero Printery	6351 Olmeda Avenue	Building	1915-1917
Atascadero Administration Veteran's Memorial Building (City Hall)	6500 Palma Avenue	Building	1914-1918
Atascadero Historic Street System	-	Structure	1914-1948
Street Trees	-	Site	1914-1948
Community Center (Federated Church Building)	6225 Atascadero Mall	Building	1920
Atascadero Hospital	5575 Hospital Drive	Building	1919-1921
The Mall	Traffic Way / El Camino Real	Structure	1914-1915
Mall Park (a.k.a. Sunken Gardens)	East Mall / West Mall / Palma Avenue / El Camino Real	Site	
Palma Avenue Retaining Wall	Palma Avenue	Structure	1916

Table 6-2: Contributors to the Atascadero Estates Residential Historic District

Resource Name	Address / Location	Contributing Property Type	Built Date(s)
Bridge #49-100 (Magnolia Avenue Bridge/ Atascadero Creek Bridge)	State Route 41 / Atascadero Creek	Structure	1921

The following provides a summary of each of the identified contributors, except for the Atascadero Printery and Administration Building, which are outlined as individual properties in the previous section:

- **Atascadero Historic Street System:** the central, defining component to the AERHD is the street network. Constructed between 1914 and 1918, the street network was the foundation of the Colony's City Beautiful and Garden City plan. The network features the formal, axial Beaux Arts plan at the civic center and the more picturesque, curvilinear roadways that extend throughout the residential areas of the plan, which reflect the varied topography along the hillsides and valleys Entezari & Nayyar 2014:5).
- **Street Trees:** an integral part of the original Colony plan was the street trees that were incorporated. Consulting with Leonar Cotes of Morgan Hill Nurseries, Lewis and his design team specifically identified certain trees along particular roadway types. Along broad avenues, plane trees, walnuts, and locusts were common; whereas residential streets featured maple, locust, ash, oaks, and others. Mature examples can still be found throughout the street network. This includes elm, plane, locust, walnut, eucalyptus, and Monterey Pines (Entezari & Nayyar 2014:5).
- **Community Center (Federated Church Building):** constructed between 1920 and 1921, the Federated Church Building was the central social and meeting space in the Colony, providing recreation and reception spaces that catered to a number of social organizations in addition to the general Colony residents. The building also featured the Federated Church function, was a multi-denominational church space that catered to the community at large. While the building has been altered and is now part of a larger church complex, it is still considered a contributor to the AERHD (Entezari & Nayyar 2014:9–10).
- **Atascadero Hospital:** constructed between 1919 and 1921, the Atascadero Hospital was designed as part of the original Colony plan. While the building has undergone several alterations and additions since its construction and uses have changed, it still is found to contribute to the AERHD (Entezari & Nayyar 2014:9).
- **The Mall:** constructed between 1914 and 1915, the Mall is the central component to the AERHD and the civic center of the original Atascadero Colony Plan. Designed by Walter Bliss and organized in the Beaux Arts style, the Mall includes the parallel streets of East and West Mall, which extend northeast from El Camino Real and adjoin in a horseshoe turnaround. The streets bound a series of central landscape progression, which also includes the Administration Building and sunken Gardens as the civic center of the former Colony design. While the Atascadero Middle School has disrupted the alignment of East Mall, the general configuration remains and is considered contributing to the AERHD (Entezari & Nayyar 2014:6–7).

- **Mall Park (AKA Sunken Gardens):** constructed in 1918, Mall Park, also known as the Sunken Gardens, is the central city park located directly south across from the Atascadero Administration Building. Designed in concert with the Administration Building, Mall Park is a formal urban park that features several contributing features, including the sunken gardens and fountain set at the center of the park that divides the open expanses of lawn, the corner fountains, various statues, and mature trees, including cedars (Entezari & Nayyar 2014:6–7).
- **Palma Avenue Retaining Wall:** constructed in 1916 and located along the north side of Palma Avenue between Traffic Way and Rosario Avenue, the stone retaining wall is noted for its square stone construction and association with the original Colony street network (Entezari & Nayyar 2014:10).
- **Magnolia Avenue/ Atascadero Creek Bridge:** constructed in 1921, the Magnolia avenue/ Atascadero Creek Bridge is a reinforced concrete arch bridge that was designed as the formal entry into the Atascadero and its formal Beaux-Arts plan. Designed by Warren B. Burch, an engineer with both the City and County of San Luis Obispo, the bridge is specifically aligned on axis with the Administration Building to force perspective of those crossing the bridge and mark the transition to-and-from the formal civic center space from the curvilinear and more picturesque quality of the residential neighborhoods (Entezari & Nayyar 2014:6).

Potential Historic Resources

In addition to known historic resources, there are several properties that have been identified over the years that have the potential to be considered historic resources. Often identified through grass roots efforts to document the history of Atascadero, these properties do not appear to have been formally documented or evaluated for historical significance by people who meet the Secretary of the Interior's Professional Qualification Standards in history or architectural history, but documented by enthusiastic members of the general public and important non-profit organizations, namely the Atascadero Historical Society.

The following section provides a summary of these previous studies, as well as a discussion of those properties that have been identified that have the potential to be historic resources.

Previous Studies

Colony Homes List (1994)

In 1994, the Atascadero Historical Society compiled a list of original Colony Homes within Atascadero. In addition to providing specific addresses, the list compiles additional information, including ownership, although it's unclear if that is historic ownership related to the original purchase of the property or current. Additional information is provided in the list, although no key or legend was available at this time to provide further insight as to what the data associated with each property listing may mean. Furthermore, it is unclear if the Colony Home List is a transcription of a historical document showing all homes, or a contemporaneous survey of existing Colony homes throughout Atascadero (Atascadero Historical Society, 1994).

Atascadero Main Street Design Committee, "Atascadero's Historic Business District" (December 2010)

The Atascadero Main Street Design Committee worked alongside the Atascadero Historical Society to prepare a document that outline the history of Atascadero and, specifically, the development of the historic commercial core that developed during the 1920s along El Camino Real and Traffic Way and expanded over the following decades. In addition to identifying the most noteworthy extant buildings of the Colony-era, the document provides a summary of early buildings in downtown Atascadero. This is often done in an informational way and does not provide specific addresses or evaluations of historical significance, but the context and background information regarding each potential resource within downtown Atascadero is beneficial for future assessments and evaluations (Atascadero Main Street Design Committee, 2010).

Alyssa Chung, "Atascadero Historical Report," prepared for the City of Atascadero (2018)

In 2018, an undergraduate student at California Polytechnical University, San Luis Obispo (Cal Poly) prepared a historical planning document for the City as part of their coursework in the university's City and Regional Planning program. The document is essentially a chronological historic context that draws upon a variety of primary and secondary sources. While the document does outline a pedestrian survey component and identifies those properties within their relevant chronological context, the methodology behind identification, evaluation, and any other framework guidance for assessing significant resources under historical themes is not included. While the context contains comprehensive and concise information about the history of Atascadero and its overall development, the survey component appears to build upon previous documentation alone, including the 2010 "Atascadero's Historic Business District" report. It appears that the author verified if these previously identified buildings and structures were still extant, but did not provide information regarding specific address, evaluation criteria, integrity thresholds, or other tools necessary for identifying historical resources (Chung, 2018).

List of Potential Resources

The following provides a synthesis of those properties identified, but not formally evaluated, as part of these previous studies. While not necessarily historic resources under CEQA, these properties will likely warrant special planning consideration and be treated as potential historic resources until full evaluations of significance can be determined by a qualified architectural historian. These potential historic resources are outlined in **Table 6-3**, which provides the resource name, address, property type, and date of construction. It should be noted that most of the potential resources outlined are located within downtown Atascadero, which suggests that there may also be the potential for an associated historic district. This too should be taken into consideration in future planning efforts and environmental review.

Table 6-3: Potential Historic Resource in Atascadero identified in Previous Studies

Resource Name	Address/ Location	Contributing Property Type	Built Date(s)
Jason H. Henry House	2930 Ramona Road	Building	ca.1880
Ewalt House	6205 Alcantara Avenue	Building	1917
Eaglet Arcade Building	8400 El Camino Real	Building	ca.1918
Hire-Johnson Building	5950 El Camino Real	Building	1923
U.S. Post Office Building	5850 El Camino Real	Building	1924
Bakery Building	5905 El Camino Real	Building	1924
Old fire House	5815 Traffic Way	Building	1925
Winter & Ward Garages	5650 El Camino Real	Building	1928
Keetch Building	5760 El Camino Real	Building	1929
Scott Bungalow	5465 El Camino Real	Building	1929
Bucklin Office	5932 Entrada Avenue	Building	1932
Safeway/Sprouse-Reitz Building	5805 El Camino Real	Building	ca.1940
Greyhound Bus Depot	5855 El Camino Real	Building	ca.1940
McKelvey Plumbing	5570 El Camino Real	Building	ca.1940
Savings Office Building	5825 Traffic Way	Building	ca.1960
Gas Station	6040 El Camino Real	Building	ca.1960
Grisanti Hardware Building	5825 Traffic Way	Building	1961

In addition to the properties identified in **Table 6-3**, there are likely dozens of original Colony residences throughout Atascadero, as suggested in the 1994 list prepared by the Atascadero Historical Society, which may qualify as historical resources. While a full review of these addresses included in the list was not conducted as part of this effort, the list is included as an appendix item for reference and review (see **Appendix A** for 1994 Colony Homes List). These residences, if extant, should be given special consideration as part of future planning process and environmental reviews, and treated as potential historic resources until they can be documented and evaluated by a qualified architectural historian to confirm historic status.

6.7 Appendix A: 1994 Colony Homes List

= Picture on File.

COLONY HOMES 1994

Historical Society House moved from 6900 El Camino WA-14					
5205 Alamo	Q-79	Mrs. Jennie V. Wilson	CP	6-28-15	p
5225 Alamo	Q-81	Edith Schwarm	CP	8-9-15	p
5245 Alamo	Q-83	Pierson	CP	6-2-15	p
5250 Alamo	Q-57	Lydia Snow	AN	-19	
5290 Alamo	Q-34	Hillcrest House	CP	3 15 15	p
6350 Alcantara	UA-25	Almeda Berry	CP	8-30-15	p
6500 Alcantara	UA-42	R. W. Lane	CP		p
8935 Amapoa	OC-39	Dr. J. P. Ervin	CP	11-29-15	p
2800 Ardilla	46-2	Ruskovich		-16	
3125 Ardilla	24-20	E. C. L. Miller	AN	-17	
3675 Ardilla	17-42	Vera Hand	MA		
3833 Ardilla	17-23	Currier	AN	-18	
3864 Ardilla	3-3	Clifford	MA		

4500	Ardilla	2-16	H. M. Wood	AN	3-14-24	p
5546	Arroyo Ave	R-13	Sloan	CP		p
6685	Atascadero	ZA-12	Dr. J. E. Littlefield	CP	2-3-15	p
6700	Atascadero	CB-7	Marguerite A. Travis	CP		p
7820	Atascadero	QB-3	Chas. S. Taber	CP		p
8020	Atascadero	CC-55	M. J. Dixon	CP	3-18-16	p
8100	Atascadero	CC-51	A. H. Coombs	AN	-19	p
8200	Atascadero	CC-47	Miss Matilda McIntyre	AN	-19	
8800	Atascadero	6-2		MA		
9000	Atascadero	12-4	Calvert	AN	10 -16	p
9360	Atascadero	12-1A	Albright	MA		
9480	Atascadero	12-1	W. B. Jones	CP	6-2-15	p
5400	Bajada	MA-10	St. Crig	L	3-11-16	p
5405	Bajada	EA-19	Geo. B. Lewis	L	3-11-16	p

5455	Bajada	EA-2	Dr. James H. Jackson		p
5550	Bajada		G. A. Friess	AN -19	
5755	Bajada	DA-9	Branaman Apts	CP	p
5845	Bajada	DA-1A	J. A. Anderson -Moved from No. Hwy		p
5285	Barrenda	Q-30	J. G. Barnard	CP 6-8-15	p
5290	Barrenda	Q-20	Sexton		
5304	Barrenda	Q-29	E. P. Thomas	CP 6-2-15	p
5315	Barrenda	Q-30B	Frank B. Martin	CP 8-2-16	p
5334	Barrenda	Q-28A	L. K. Jordan	CP 6-3-15	p
5339	Barrenda	Q-31	V. X. Lyon	CP 6-2-15	p
5392	Barrenda	DA-7			p
5393	Barrenda	DA-25	Appleton		p
6305	Buena	H-1	Mrs. E. B. Taylor	CP 7-24-16	p
5205	Capistrano	AP-40	Wm. F. Ryder		p

5210	Capistrano	AP-39	Mrs. William Crilley	AN	3-26-21	
5385	Capistrano	AP-49	Mary Sawyer	CP	3-18-17	p
5401	Capistrano	AP-50	Palms			
9435	Carmel	101-1	L. B. Mack	CP	11-27-16	p
8355	Carmelita	HC-7	Carruth	AN	5-9-24	p
9205	Carmelita	KC-7	DeGolier		-21	p
9400	Carmelita	14-27	James Hanna	MA		
9455	Carmelita	14-29	Miller		-21	
7665	Castano	MC-15	Rudolph Reich	CP		p
7865	Castano	MC-24	Lucy Murray	CP		p
5300	Cascabel	16-20A	Carlton B. Breese	MA		
14855	Chispa	103-2	Mrs. Sallie M. Keith	AN	-19	
6020	Conejo	23-7A	N. A. Hasher	CP		p
8300	Coromar	7-26	Septimus Martin	AN	-19	

8405	Coromar	7-5B	Remodeled barn of Patterson House			
8505	Coromar	7-5C	Patterson	AN	-16	p
8730	Coromar	7-33H				
8825	Coromar	7-34C	Blessing			
7600	Cortez	MC-12A	F. A. Kimmell	CP	4-9-15	p
7740	Cortez	MC-6				p
7820	Cortez	MC-2	T. A. Thompson	MA		
	Cortina		Poole	MA		
7115	Cristobal	NB-14	Bonibell Slagg	CP		p
7150	Cristobal	OB-15	Cyrus Skinner	CP	10-2-14	p
7305	Cristobal	NB 16 & 17	Miss Kinder	AN	-19	
7850	Curbaril	FC-12		AN	-19	
7880		FC-11	Mrs. Mary R. Howard	CP		p
8085	Curbaril	OB-2	McClellan			p

8755	Curbaril	HA-30	Miss Mercie K. Worsfold	CP	7-24-16	p
8945	Curbaril	GA-2	Ellen and Vesta Tibbetts			p
8955	GA-5		Kratz	AN	-17	p
8985	Curbaril	GA-7	J. H. Magee	CP	10-19-15	p
9225	Curbaril	B-1A	Amanda Hurst	CP	9-25-15	p
9230	Curbaril	MC-47	L. N. Kline	CP		p
4835	Del Rio	22-5	C. H. Willy	CP	3-20-16	p
5200	Dolores	FA-19	J. S. Donnell	L	3-11-16	p
5275	Dulzura	EA-16	Emma S. Nichols	AN	2-22-24	
1535	El Camino	49-25B	J. C. Morton	CP	8-2-16	p
1625	El Camino	49-27	H. G. Terrell	CP	2-19-16	p
1800	El Camino	48-3	Albert Rhordorf	CP	9-23-15	p
2115	El Camino	22-8	S. N. Palms	AN	10-24-19	p
2605	El Camino	22-15	T. S. Bennet	AN	-17	p

2705 El Camino	22-16	Henry Boerner		CP	10-16-17	p
2900 El Camino	23-1					p
3055 El Camino	19-92	Miss M. S. Devereaux		L	3-11-16	p
3155 El Camino	19-94	Bacher		AN	1-11-24	
3320 El Camino	18-9				23	p
3405 El Camino	19-99	A. L. Hess		CP	9-21-16	p
3650 El Camino	18-5	Bovee				p
3655 El Camino	19-104	Creasy		AN	6-3-21	
3755 El Camino	19-106	Foster		MA		
4625 El Camino	NC-65	Merrigold		AN	7-13-17	p
4650 El Camino	2-3	Mrs. A. M. Reinhold		CP	2-19-16	p
5065 El Camino	RA-20	Evans				p
5205 El Camino	RA-13	Bishop				p
5365 El Camino	RA-5	A. W. B. Perrine		CP	7-24-16	p

7470	El Camino	TA-3	Fred Lappin	AN	3-18-16	p
7575	El Camino	HA-13			11-29-21	p
7605	El Camino	HA-12	Henry Pysher	CP		p
7735	El Camino	HA-8	E. V. Dorn	CP	6-23-15	p
7830	El Camino	SA-12	Sophie Feuss	L	3-11-16	p
7900	El Camino	SA-13A	August Heintz	CP	11-8-15	p
7965	El Camino	HA-3	Mrs. H. G. Moore	CP	1-12-16	p
8740	El Camino	7-3	G. B. Chandler	CP	6-15-16	p
8800	El Camino	7-2	Kate Baldwin	AN	-19	
8900	El Camino	7-1	R. W. Goeb	CP	11-5-15	p
9200	El Camino	10-5	C. A. Carlson	CP	2-14-16	p
10850	El Camino	35-4	G. T. Harrison	L	3-11-16	p
5225	Ensenada	AP-12	Emory Longmire	AN	1-31-19	
5265	Ensenada	AP-14	Curneen	AN	11-4-21	

5385	Ensenada	AP-20	Blanchard			
5440	Ensenada	AP-4	McClure	AN	-19	
5450	Ensenada	AP-3	Frank Brentengle	AN	7-25-24	p
5080	Fresno	PA-19	Balderson	AN	8-23-18	p
5220	Fresno	PA-10	Voak			p
5280	Fresno	PA-9	Fenny			p
5405	Fresno	MA-20			23	
5430	Fresno	PA-22	Leopold Radke	CP		p
7100	Graves Creek Rd	24-30	Gill		20	
4635	Hidalgo	I-8	Chase	AN	6-3-21	
4660	Hidalgo	K-19	Hartranft			p
4700	Hidalgo	K-21	McDougal			p
4705	Hidalgo	I-5	Jack Prosser	CP	4-2-15	p
4768	Hidalgo	K-24	Libbey	MA		

5309 Honda	DA-32	A. R. Kay	AN	1-31-19	
5330 Honda	Q-33	J. A. Summafrank	CP	12-24-15	p
8735 Junipero	MC-94A	Murphy - Moved from WA-14			p
8740 Junipero	MC-144	James H. Carr	AN	-19	
8780 Junipero	MC-140	Wm. Jones	L	3-11-16	p
6200 Los Gatos	15-49	George N. Allen	AN	7-19-21	
11305 Los Palos Rd.	70-49	Dr. F. O. Damons	AN	11-4-21	
5165 Magdalena	F-16	H. A. Floaten	CP	10-10-14	p
5185 Magdalena	F-15	B. D. Conrad	CP	10-10-14	p
5345 Magnolia	F-8	I. L. Mitchell	CP	11-28-14	p
5385 Magnolia	F-4	H. E. Mitchell	CP	10-10-14	p
6200 Marchant	UA-13	W. B. Ewalt	CP	1-30-16	p
6300 Marchant	UA-6	Montgomery	CP		p
6455 Marchant	TA-37	Capt. C. A. Smede	AN	7-12-21	

8205	Marchant	6-7	Malcolmson	MA		
8420	Marchant	CC-9	Miss Belle J. Allen	AN	6-3-21	
8885	Marchant	6-9	Dr. Lillian Miller	MA		
5360	Marquita	NA-6 A	Chas. Odin	AN	10-5-17	p
3400	Maricopa	17-9	J. A. Hier Johnson	AN	10-27-21	
3950	Maricopa	17-21	Standley			p
5385	Marquita	PA-4				p
5425	Marquita	PA-2	Bentley	AN	3 -16	
5460	Marquita	NA-12	Howe	AN	19	p
5140	Mercedes	F-23A	W. A. Brown	CP	10-10-14	p
4835	Miramon	J-9	Rasmussen			p
4965	Miramon	J-4	Grabenstein	L	3-11-16	
5055	Miramon	J-2	Jennie James Polke			
5095	Miramon	J-1	Hobbs	MA		

2500 Monterey Rd	24-8	Crook	AN	10-21-21	
3850 Monterey Rd	17-4	C. A. Miller	CP		p
3900 Monterey Rd	17-3		MA		
3990 Monterey Rd	17-1				
7300 Morro Rd	RB-13	Mrs. Mary McMaster	CP		p
8580 Morro Rd	GC-6	Dr. B. H. Pelton	CP		p
9085 Morro Rd	JC-3		MA		
6390 Navajoa	ZA-6	Mrs. E.M. and J.C. Tyler	CP		p
7100 Navajoa	SB-17	E. T. Willis	CP		p
7200 Navajoa	SB-16	N. K. McClellan	CP		p
7710 Navajoa	SB-6	E. M. Osburn	CP		p
7800 Navajoa	SB-4	Moon Moved from DC-34	L	3-11-16	p
5570 Nogales	OA-2	W. H. Engle	CP	2-3-15	p
4820 Obispo	49-33	Oldson Moved from 18-2			p

9950 Old Morro Rd East	32-12A	J. J. Sommerfeld	CP		p
5100 Olmeda	QA-37	Northrup	CP	9-11-15	p
5160 Olmeda	QA-41	E. C. Peterson	CP	2-3-15	p
5220 Olmeda	QA-44	J. T. Wilson	CP	4-9-15	p
5290 Olmeda	QA-49	S. W. Hesse	CP	11-15-16	p
5315 Olmeda	NA-7A	W. K. Bancroft	CP	2-1-15	p
5345 Olmeda	NA-7	Mrs. F. E. Taylor	CP	8-26-15	p
5380 Olmeda	QA-55				
5405 Olmeda	NA-5	Mrs. H. A. Shotwell	CP	7-7-15	p
5420 Olmeda	QA-58	Marshall			p
5450 Olmeda	QA-60	Chamberlin		18	p
5460 Olmeda	QA-60A	Mrs. M. G. Lewis	CP	18	p
5035 Palma	QA-31	C. S. Cornelius	CP	4-20-15	p
5125 Palma	QA-27	J. F. Brittian	CP	4-8-15	p

5165 Palma	QA-24				
5245 Palma	QA-19	C. H. Phettiplace	CP	10-23-16	p
5280 Palma	RA-38	Mrs. Showalter	AN	10 -16	p
5340 Palma	RA-41	J. W. Francis	CP	4-8-15	p
5345 Palma	QA-13	J. T. Wilson	L	3-11-16	
5360 Palma	RA-42	J. W. Barrett	CP	9-28-15	p
5385 Palma	QA-10	Cyr	MA		
5495 Palma	QA-4	Lindsey	L	3-11-16	
4400 Portola	16-8	W. W. Calder	CP	7-15-17	p
4805 Portola	3-9	Sigsbee	MA		
5000 Portola	16-5	Oakes			p
5305 Portola	3-10B	E. L. Vail	AN	10- -16	p
5490 Portola	16-3	Armstrong			p
6145 Portola	4-10	Holden	MA		

6275 Portola	4-9	C. L. McCready	21	p
6405 Portola	4-8	Walter McCready	AN 10-24-19	
6450 Portola	15-6	Fortney		p
6400 Portola	15-6		AN 11-4-21	
6606 Portola	15-4A	W. L. Head	AN 11-4-21	
7010 Portola	5-6 & 6C	Dr. Sarah Brooke	CP	p
7200 Portola	5-7B	Beal Andrus	CP	p
7250 Portola	5-8	Mrs. M. C. Longmaid	CP	p
7350 Portola	5-10	N. B. Johnson	CP	p
7400 Portola	5-10A	D. H. Hinman	AN -19	
7475 Portola	5-1			
7856 Portola	KC-10	Latham		p
8475 Portola	6-12	Mrs. Katherine Rathfon	AN 6-3-21	
8625 Portola	7-31A	L. G. Williams	CP	p

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8665 Portola	7-32	E. L. Higgins			p
8780 Portola	10-9	Frandsen			p
2930 Ramona	18-14A	Henry Ranch			p
4980 Rosario	T-14	Pysher	AN	17	p
4990 Rosario	T-14A				p
5000 Rosario	R-12		AN	17	p
5020 Rosario	R-11	M. G. Lewis	AN	6-3-21	p
5080 Rosario	R-17	H. H. Stuart	L	3-11-16	
				3-11-16	
5530 Rosario	MA-7	Mrs. W. I. Thompson	L	3-11-16	p
5540 Rosario	MA-6	Delia Holden	CP	2-10-17	p
5570 Rosario	MA-2	L. D. Beckwith	CP	5-14-15	p
5672 Posario	NA-13	Mrs. E. C. Lewis - Remington	CP	5-21-15	p
5680 Rosario	NA-13 so.	John J. Roth	CP	5-3-16	p
5705 Rosario	LA-19	Mary A. Andrews	AN	3-14-24	

5735	Rosario	LA-20	Dr. J. B. Banker	CP	p
5763	Rosario	LA-21	E. C. Sears	CP 10-24-16	p
5800	Rosario	QA-1	Kase	CP	p
5825	Rosario	LA-22B	R. P. O'Connor	CP 9-22-16	p
7555	San Andres	BB-1	Tedford	AN 11-28-21	
8255	San Andres	UA-34	Belden	AN 21	
8400	San Andres	OB-18	C. G. Wheeler	CP 3-31-16	p
6240	San Anselmo	17-1A	Watson		p
5560	San Benito	22-17	J. C. Huber	CP 11-4-15	p
8425	San Clemente	5-5A	Miss B. F. Amsbury	CP	p
7500	San Gabriel	31-2	Eisenbise		p
7505	San Gabriel	14-24	Lester Guy	23	p
9080	San Gabriel	34-9	Thomas N. Henry	AN 11-4-21	
7205	San Gregorio	52-2	Rude Newton	CP	p

4800	San Jacinto	NC-6	Warren Morris	AN	6-3-21	
5245	San Jacinto	FA-30	Alice Schlosser and Mrs. Jones	AN	7-19-21	
5295	San Jacinto	FA-32				
8950	San Marcos	15-41	Townsend			p
5675	San Pedro	V-19				p
5685	San Pedro	V-18				p
5703	San Pedro	V-17	V. B. French	CP		p
5735	San Pedro	V-16	E. D. Jarvis	CP		p
5790	San Pedro	T-9	Lawrence Hess	AN	9-2-16	
4650	San Vicente	Y-4	Chase	MA		
9840	Santa Clara	102-16 & 17	Benj Leibenburger	CP	2-3-15	p
6843	Santa Lucia	HB-29	Mrs. Eugene Davis	CP		p
8600	Santa Lucia	3-13A	Paul Junker	AN	1-13-24	

9900 Santa Lucia	16-33	B. H. Smith		20	p
10855 Santa Lucia	28-12	Martin	MA		
12505 Santa Lucia	57-8	Reis	MA		
13600 Santa Lucia	55-51	Leigh	AN	6-3-21	
8455 Santa Rosa	12-9	Mendham	AN	10-31-19	
8711 Santa Rosa	10-16	Chas. A. Oliva	CP		p
6205 Santa Ynez	ZA-7	Carrie E. Williams	CP	9-25-18	p
6820 Santa Ynez	DB-4	Armstrong			p
6875 Santa Ynez	CB-13	Mrs. E. B. Long	CP	2-3-15	p
6980 Santa Ynez	DB-1	Filley	AN	17	
7030 Santa Ynez	TB-15	Mrs. S. W. Thornton	CP		p
7050 Santa Ynez	TB-15	Dr. E. A. Berry	CP		p
7450 Santa Ynez	TB-11	Dave H. Barry	L	3-11-16	p
7805 Santa Ynez	SB-21	Mrs. Grace Snyder	CP	8-6-15	p

8450	Santa Ynez	GC-8	Nelson	MA		
7105	Santa Ysabel	KA-8	Dr. Urey			p
7255	Santa Ysabel	KA-4				p
7285	Santa Ysabel	IA-14	Alberta Wagner	CP	7-3-15	p
7351	Santa Ysabel	IA-11	J. T. Nicholson	CP	2-2-15	p
7379	Santa Ysabel	IA-9	Nellie C. Miller	CP	2-2-15	p
7393	Santa Ysabel	IA-8	F. A. Cola	CP	2-2-15	p
7406	Santa Ysabel	JA-22	Minnie Koenig	CP		p
7535	Santa Ysabel	GA-11B	C. E. Swerdfeger	AN	12 19	
6889	Serra	BB-4A	John Seibold	L	3-11-16	p
7590	Sinaloa	HA-17	H. T. Brown	CP	9-1-15	p
7650	Sinaloa	HA-19	Miss Julia C. Down	AN	19	
7685	Sinaloa	HA-42				
7805	Sinaloa	HA-38	W. A. Moore	CP	8-8-16	p

7835	Sinaloa	HA-37	W. A. Moore	CP	8-8-16	p
7865	Sinaloa	HA-36	Dr. M. Goether	CP	6-18-15	p
7880	Sinaloa	HA-27	Julia A. Kunkee	CP	6-6-16	p
7340	Sombrilla	IA-17	Mrs. H. R. Eaton	L	3-11-16	p
4480	Sycamore	I-12	F. I. Willard	L	3-11-16	p
4595	Sycamore	H-10	Mrs. A. L. Adams			p
4620	Sycamore		A. T. Russell	MA		
4645	Sycamore	H-8	Mary Andrews	L	3-11-16	p
4715	Sycamore	H-5		AN	10 24	
4955	Sacamore	G-5B	A. L. Van Brakle	L	3-11-16	p
4965	Sycamore	G-5A	Gertrude Kendig	L	3-11-16	p
5000	Sycamore	J-18	Walters	MA		
7285	Sycamore	SP-11	Clay	MA		
3210	Traffic Way	21-2	Webber	MA		

4650 B	Traffic Way	W-13	T. G. Ford	CP 2-13-16	p
4650 A	Traffic Way	W-14	L. E. Van Ness	CP 4-21-16	
5050	Traffic Way	Q-63	W. H. Harrison	CP 6-28-16	p
5070	Traffic Way	Q-64	Della Callahan	CP 8-26-15	p
5110	Traffic Way	Q-68		MA	
5120	Traffic Way	Q-71	Rebecca Lindsay		p
5300	Traffic Way	DA-30	Jessie Nicholson	CP 6-12-16	p
5390	Traffic Way	DA-26	Emmons	AN 3-25-16	p
5935	Traffic Way	LA-24A	F. O. Engstrum	CP 6-8-15	p
5516	Tunitas	LA-7	Hastie	CP 18	p
5534	Tunitas	LA-9			p
5540	Tunitas	LA-10			p
5561	Tunitas	LA-47	C. H. Branham	CP 7-9-15	p
5573	Tunitas	LA-49	Louis Cohen	CP 7-12-15	p

5579 Tunitas	LA-50				p
5590 Tunitas	LA-23	Moon			p
5595 Tunitas	LA-26	Roy Clarke	AN	6-3-21	
7345 Valle	D-71	Mayer			
7385 Valle	D-73	Mrs. Nancy K. Ellis	CP		p
5948 ~~6948~~ Violeta	IB-1	Dr. Carl H. Bryant	AN	7-12-21	p
7790 Yesal	MC-68	W. L. Gunn	CP	1-21-16	p
11600 Viejo Camino	66-	Hubbard		16	

Appendix B: Atascadero BERD Entries

Primary Number	OTIS ID	Property Number	Name	Aliases and Alias Types	St Number	St Name	City	County	Zip	Vicinity	Other Geography	Evaluation Info	Parent District	Assoc Resources	Parcel Num	MilePost	Owner-ship	Construction Year(s)	oCode	Date Modified	Export Date
	689993		Atascadero City Hall Penthouses				ATASCADERO	San Luis Obispo				6Y, 02/03/2011, FEMA070504A		421404,Relate o Resource						3/10/2020	9/23/2022
	487972	90605	ATASCADERO ESTATES RESIDENTIAL HISTORIC DISTRICT	40-3422-001^Survey Number			ATASCADERO	SAN LUIS OBISPO				2S2, 06/04/1987, 3422-0005-9999 | 2S2, 06/04/1987, FHWA870506A						1913-1919	o35120d6	4/5/2018	9/23/2022
	487989	90625	HISTORIC STREET SYSTEM	40-3422-001^Survey Number			ATASCADERO	SAN LUIS OBISPO				2D2, 06/04/1987, 3422-0005-0001 | 2D2, 06/04/1987, FHWA870506A	487972				M	1914-1948	o35120d6	4/5/2018	9/23/2022
	487995	90632	FEDERATED CHURCH BUILDING	40-3422-001^Survey Number | ATASCADERO BIBLE CHURCH^Other Name	6225	ATASCADERO MALL	ATASCADERO	SAN LUIS OBISPO	93423			2D2, 06/04/1987, 3422-0005-0009 | 2D2, 06/04/1987, FHWA870506A	487972				P	1920	o35120d6	4/5/2018	9/23/2022
	487960	90593			5205	CAPISTRANO	ATASCADERO	SAN LUIS OBISPO				6Y, 06/04/1987, 3422-0009-0000 | 6Y, 06/04/1987, FHWA870506A					P	1918	o35120d6	4/5/2018	9/23/2022
	487900	90588			5210	CAPISTRANO	ATASCADERO	SAN LUIS OBISPO				6Y, 06/04/1987, 3422-0008-0000 | 6Y, 06/04/1987, FHWA870506A					P	1918	o35120d6	4/5/2018	9/23/2022
	487901	90589			5225	CAPISTRANO	ATASCADERO	SAN LUIS OBISPO				6Y, 06/04/1987, 3422-0010-0000 | 6Y, 06/04/1987, FHWA870506A					P	1935	o35120d6	4/5/2018	9/23/2022
	487904	90592			5385	CAPISTRANO	ATASCADERO	SAN LUIS OBISPO				6Y, 06/04/1987, 3422-0012-0000 | 6Y, 06/04/1987, FHWA870506A					P	1917	o35120d6	4/5/2018	9/23/2022
	487898	90586			5400	CAPISTRANO	ATASCADERO	SAN LUIS OBISPO				6Y, 06/04/1987, 3422-0007-0000 | 6Y, 06/04/1987, FHWA870506A					P	1935	o35120d6	4/5/2018	9/23/2022
	487903	90591			5401	CAPISTRANO	ATASCADERO	SAN LUIS OBISPO				6Y, 06/04/1987, 3422-0011-0000 | 6Y, 06/04/1987, FHWA870506A					P	1918	o35120d6	4/5/2018	9/23/2022
	491390	94685	BUCKLIN HOUSE		6905	COUNTRY CLUB DR	ATASCADERO	SAN LUIS OBISPO				2S2, 02/28/1995, FHWA950113B						1930		4/5/2018	9/23/2022
	487968	90601				CRESTON RD	ATASCADERO	SAN LUIS OBISPO			TEMPLETON RD (Corridor)	6Y, 06/04/1987, 3422-0018-0000 | 6Y, 06/04/1987, FHWA870506A					P	1920	o35120d6	4/5/2018	9/23/2022
	565947	132096	BRIDGE #49-24	Map Reference # B3^Fieldwork Nbr | Post Mile 16.13^Other		El Camino Real	ATASCADERO	San Luis Obispo	93422		ATASCADERO CREEK (Corridor)	6Y, 12/10/2001, DOE-40-01-0020-0000 | 6Y, 12/10/2001, FHWA011003C						1915	o35120d6	4/5/2018	9/23/2022
	681447		Atascadero State Hospital Main Hospital Complex~		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002		045-461-002				1954-2005	o35120d6	12/18/2019	9/23/2022
	707637		Atascadero State Hosp Admin Annex<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707639		Atascadero State Hosp Admin		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707653		Atascadero State Hosp Barber Shop<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707671		Atascadero State Hosp Clinic Area<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707672		Atascadero State Hosp Conference Room<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707703		Atascadero State Hosp Graphic Arts<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707736		Atascadero State Hosp Maintenance Office<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707739		Atascadero State Hosp Mtc. Storage<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707769		Atascadero State Hosp Personnel<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707770		Atascadero State Hosp Personnel<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707772		Atascadero State Hosp Pharmacy<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707786		Atascadero State Hosp Storeroom Warehouse<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707787		Atascadero State Hosp Storeroom Main<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707789		Atascadero State Hosp Storeroom Main New<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707804		Atascadero State Hosp Unit 14<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707805		Atascadero State Hosp Unit 14 Annex<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022

Primary Number	OTIS ID	Property Number	Name	Aliases and Alias Types	St Number	St Name	City	County	Zip	Vicinity	Other Geography	Evaluation Info	Parent District	Assoc Resources	Parcel Num	MilePost	Owner-ship	Construction Year(s)	oCode	Date Modified	Export Date
	707819		Atascadero State Hosp Unit 18<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707820		Atascadero State Hosp Unit 18 Annex<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707821		Atascadero State Hosp Unit 19<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707822		Atascadero State Hosp Unit 19 Annex<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707823		Atascadero State Hosp Unit 2<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707836		Atascadero State Hosp Unit 28 Annex<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707837		Atascadero State Hosp Unit 29<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707838		Atascadero State Hosp Unit 3<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707839		Atascadero State Hosp Unit 30<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707853		Atascadero State Hosp Vocational Ed.<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707854		Atascadero State Hosp Vocational Shop<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707650		Atascadero State Hosp Auditorium<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707668		Atascadero State Hosp Chapel<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707675		Atascadero State Hosp Core (Modular 2)<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707682		Atascadero State Hosp Corridor<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707684		Atascadero State Hosp Corridor West<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707707		Atascadero State Hosp Gym bldg 103<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707709		Atascadero State Hosp Hosp. Info. Dept.<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707732		Atascadero State Hosp Kitchen<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707734		Atascadero State Hosp Laundry<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707748		Atascadero State Hosp Mtc. Warehouse<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707773		Atascadero State Hosp Phoenix Campus<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707782		Atascadero State Hosp Rehabilitation Unit<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707784		Atascadero State Hosp Staff Hallway II<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707802		Atascadero State Hosp Unit 13<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707807		Atascadero State Hosp Unit 15<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707825		Atascadero State Hosp Unit 21<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707827		Atascadero State Hosp Unit 22 Annex<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707832		Atascadero State Hosp Unit 26<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707834		Atascadero State Hosp Unit 27 Annex<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707841		Atascadero State Hosp Unit 32<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707843		Atascadero State Hosp Unit 34<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707850		Atascadero State Hosp Unit 9 Annex<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707852		Atascadero State Hosp Visiting Rm. Small<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707857		Atascadero State Hosp Hosp. Police<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707642		Atascadero State Hosp Admission<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707665		Atascadero State Hosp Central Supply 903<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707667		Atascadero State Hosp Central Supply Stor.<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022

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	707674		Atascadero State Hosp Core (Modular 1)<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707683		Atascadero State Hosp Corridor Main<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707701		Atascadero State Hosp Dining Rooms<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707751		Atascadero State Hosp New Treatment Area<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707765		Atascadero State Hosp Office<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707767		Atascadero State Hosp Patient Property<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707774		Atascadero State Hosp Program Office<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707776		Atascadero State Hosp Protective Services<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707783		Atascadero State Hosp School Area<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707799		Atascadero State Hosp Unit 12 Annex<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707801		Atascadero State Hosp Unit 13 Annex<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707808		Atascadero State Hosp Unit 16<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707810		Atascadero State Hosp Unit 16 Annex<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707824		Atascadero State Hosp Unit 20<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707826		Atascadero State Hosp Unit 22<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707833		Atascadero State Hosp Unit 27<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707835		Atascadero State Hosp Unit 28<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707840		Atascadero State Hosp Unit 31<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707842		Atascadero State Hosp Unit 33<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707844		Atascadero State Hosp Unit 4<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707849		Atascadero State Hosp Unit 9<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707851		Atascadero State Hosp Vending Room<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707627		Atascadero State Hosp Admin (Stand Comp)<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707628		Atascadero State Hosp Admin<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707647		Atascadero State Hosp Admission Addition<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707662		Atascadero State Hosp Canteen Storage<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707663		Atascadero State Hosp Central Nursing<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707713		Atascadero State Hosp Hosp. Info. Dept.<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707714		Atascadero State Hosp Ice Room<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707744		Atascadero State Hosp Mtc. Storeroom<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707762		Atascadero State Hosp Nutritional Services<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707764		Atascadero State Hosp Occupational Health<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707778		Atascadero State Hosp Psych. Tech School<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707794		Atascadero State Hosp Unit 1<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707795		Atascadero State Hosp Unit 10<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707796		Atascadero State Hosp Unit 11<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707797		Atascadero State Hosp Unit 12<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707812		Atascadero State Hosp Unit 17<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022

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	707813		Atascadero State Hosp Unit 17 Annex<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707828		Atascadero State Hosp Unit 23 Annex<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707829		Atascadero State Hosp Unit 23<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707830		Atascadero State Hosp Unit 24<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707831		Atascadero State Hosp Unit 25<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707845		Atascadero State Hosp Unit 5<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707846		Atascadero State Hosp Unit 6<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707847		Atascadero State Hosp Unit 7<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	707848		Atascadero State Hosp Unit 8<		10333	El Camino Real	Atascadero	San Luis Obispo	93422			6YM, 11/20/2017, CAGEN_2016_0317_002								6/14/2022	9/23/2022
	530495	167406			2800	EL CAMINO REAL	ATASCADERO	SAN LUIS OBISPO	93422			6Y, 08/07/2007, FCC070606L					P			4/5/2018	9/23/2022
	566085	132043			5550	EL CAMINO REAL	ATASCADERO	SAN LUIS OBISPO	93423			6Y, 12/10/2001, DOE-40-01-0003-0000 | 6Y, 12/10/2001, FHWA011003C			030-181-040		P	1930	o35120d6	4/5/2018	9/23/2022
	566086	132044			5570	EL CAMINO REAL	ATASCADERO	SAN LUIS OBISPO	93423			6Y, 12/10/2001, DOE-40-01-0004-0000 | 6Y, 12/10/2001, FHWA011003C			030-181-044		P	1923	o35120d6	4/5/2018	9/23/2022
	566087	132045			5660	EL CAMINO REAL	ATASCADERO	SAN LUIS OBISPO	93423			6Y, 12/10/2001, DOE-40-01-0005-0000 | 6Y, 12/10/2001, FHWA011003C			030-181-047		P	1940	o35120d6	4/5/2018	9/23/2022
	566089	132047			5680	EL CAMINO REAL	ATASCADERO	SAN LUIS OBISPO	93423			6Y, 12/10/2001, DOE-40-01-0006-0000 | 6Y, 12/10/2001, FHWA011003C			030-181-035		P	1928	o35120d6	4/5/2018	9/23/2022
	566092	132050			5760	EL CAMINO REAL	ATASCADERO	SAN LUIS OBISPO	93423			6Y, 12/10/2001, DOE-40-01-0007-0000 | 6Y, 12/10/2001, FHWA011003C			030-181-052		P	1929	o35120d6	4/5/2018	9/23/2022
	566096	132054			5800	EL CAMINO REAL	ATASCADERO	SAN LUIS OBISPO	93423			6Y, 12/10/2001, DOE-40-01-0008-0000 | 6Y, 12/10/2001, FHWA011003C			030-181-030		P	1949	o35120d6	4/5/2018	9/23/2022
	566098	132056	THE DORAN BUILDING		5850	EL CAMINO REAL	ATASCADERO	SAN LUIS OBISPO	93423			3S, 12/10/2001, DOE-40-01-0009-0000 | 3S, 12/10/2001, FHWA011003C			030-181-033		P	1925	o35120d6	4/5/2018	9/23/2022
	566110	132068			5880	EL CAMINO REAL	ATASCADERO	SAN LUIS OBISPO	93423			6Y, 12/10/2001, DOE-40-01-0010-0000 | 6Y, 12/10/2001, FHWA011003C			030-181-013		P	1925	17f1 | o351	4/5/2018	9/23/2022
	566111	132069			5900	EL CAMINO REAL	ATASCADERO	SAN LUIS OBISPO	93423			6Y, 12/10/2001, DOE-40-01-0011-0000 | 6Y, 12/10/2001, FHWA011003C			030-181-014		P	1923	17f2 | o351	4/5/2018	9/23/2022
	566113	132071			5920	EL CAMINO REAL	ATASCADERO	SAN LUIS OBISPO	93423			6Y, 12/10/2001, DOE-40-01-0012-0000 | 6Y, 12/10/2001, FHWA011003C			030-181-015		P	1922	20d6 | o37	4/5/2018	9/23/2022
	566114	132072			6040	EL CAMINO REAL	ATASCADERO	SAN LUIS OBISPO	93423			6Y, 12/10/2001, DOE-40-01-0013-0000 | 6Y, 12/10/2001, FHWA011003C			030-181-001		P	1951	20d6 | o37	4/5/2018	9/23/2022
	566117	132075			6322	EL CAMINO REAL	ATASCADERO	SAN LUIS OBISPO	93423			6Y, 12/10/2001, DOE-40-01-0014-0000 | 6Y, 12/10/2001, FHWA011003C			030-181-030		P	1922	o35120d6	4/5/2018	9/23/2022
	566119	132077			6405	EL CAMINO REAL	ATASCADERO	SAN LUIS OBISPO	93423			6Y, 12/10/2001, DOE-40-01-0015-0000 | 6Y, 12/10/2001, FHWA011003C			030-344-009		P	1941	o35120d6	4/5/2018	9/23/2022
	566124	132082			6450	EL CAMINO REAL	ATASCADERO	SAN LUIS OBISPO	93423			6Y, 12/10/2001, DOE-40-01-0017-0000 | 6Y, 12/10/2001, FHWA011003C			030-191-016		P	1946	8a2 | o351	4/5/2018	9/23/2022
	566121	132079			6455	EL CAMINO REAL	ATASCADERO	SAN LUIS OBISPO	93423			6Y, 12/10/2001, DOE-40-01-0016-0000 | 6Y, 12/10/2001, FHWA011003C			030-344-033		P	1942	o35120d6	4/5/2018	9/23/2022
	566127	132085			6490	EL CAMINO REAL	ATASCADERO	SAN LUIS OBISPO	93423			6Y, 12/10/2001, DOE-40-01-0018-0000 | 6Y, 12/10/2001, FHWA011003C			030-191-017		P	1948	8a2 | o351	4/5/2018	9/23/2022
	487994	90631	ATASCADERO HOSPITAL	40-3422-001^Survey Number | ATASCADERO OUTPATIENT CLINIC^Other Name	5575	HOSPITAL DR	ATASCADERO	SAN LUIS OBISPO	93423			2D2, 06/04/1987, 3422-0005-0008 | 2D2, 06/04/1987, FHWA870506A	487972				C	1919-1921	o35120d6	4/5/2018	9/23/2022
	541121	156699	ATASCADERO JUNIOR HIGH SCHOOL		6501	LEWIS AVE	ATASCADERO	SAN LUIS OBISPO	93422			6Y, 11/09/2005, FHWA050912A			029-337-001		D	1947		4/5/2018	9/23/2022
	487965	90598			5125	MAGDALENA AVE	ATASCADERO	San Luis Obispo	93423			6Y, 06/04/1987, 3422-0015-0000 | 6Y, 06/04/1987, FHWA870506A						1918	o35120d6	6/18/2020	9/23/2022
	487962	90595			5165	MAGDALENA AVE	ATASCADERO	San Luis Obispo	93423			6Y, 06/04/1987, 3422-0013-0000 | 6Y, 06/04/1987, FHWA870506A						1920	o35120d6	6/18/2020	9/23/2022
	487963	90596			5185	MAGDALENA AVE	ATASCADERO	San Luis Obispo	93423			6Y, 06/04/1987, 3422-0014-0000 | 6Y, 06/04/1987, FHWA870506A						1925	o35120d6	6/18/2020	9/23/2022
	487897	90585	JORGENS HOUSE	40-3422-001^Survey Number	5345	MAGNOLIA AVE	ATASCADERO	San Luis Obispo				2S2, 06/04/1987, 3422-0006-0000 | 2S2, 06/04/1987, FHWA870506A			28-381-25			1918	o35120d6	6/18/2020	9/23/2022
	487966	90599			5140	MERCEDES AVE	ATASCADERO	San Luis Obispo	93423			6Y, 06/04/1987, 3422-0016-0000 | 6Y, 06/04/1987, FHWA870506A						1918	o35120d6	6/18/2020	9/23/2022

Appendix B: Atascadero BERD Entries

Primary Number	OTIS ID	Property Number	Name	Aliases and Alias Types	St Number	St Name	City	County	Zip	Vicinity	Other Geography	Evaluation Info	Parent District	Assoc Resources	Parcel Num	MilePost	Owner-ship	Construction Year(s)	oCode	Date Modified	Export Date
	666240		Atascadero Readiness Center	Atascadero Armory^Other Name	6105	Olmeda Ave	Atascadero	San Luis Obispo	93422			7K, 07/15/2016, USA_2016_0603_001						1950	o35120d6	4/5/2018	9/23/2022
	487993	90630	ATASCADERO PRINTERY	40-3422-001^Survey Number | MASONIC TEMPLE^Other Name	6351	OLMEDA AVE	ATASCADERO	San Luis Obispo	93422			1S, 01/02/2004, NPS-00001368-0000 | 2D2, 06/04/1987, 3422-0005-0007 | 2D2, 06/04/1987, FHWA870506A | 2D2, 12/06/1994, HUD941024B | 2S, 12/01/2000, NPS-00001368-0000 | 3S,	487972					1915-1917	o35120d6	4/5/2018	9/23/2022
	487996	90633	STONE MASONRY RETAINING WALL	40-3422-001^Survey Number		PALMA AVE	ATASCADERO	SAN LUIS OBISPO				2D2, 06/04/1987, 3422-0005-0010 | 2D2, 06/04/1987, FHWA870506A	487972				U	1916		4/5/2018	9/23/2022
	421404	18660	Atascadero Administration Veteran's Memorial Bld	40-3422-001^Survey Number | ATASCADERO COLONY^Other Name | The Administration Building, Atascadero Colony^Official Historic Name | VETERAN'S MEMORIAL ADMINISTRATION	6500	PALMA AVE	ATASCADERO	San Luis Obispo	93422		ATASCADERO CREEK (Corridor)	1CL, 08/16/1983, SHL-0958-0000 | 1S, 11/17/1977, 3422-0001-0000 | 1S, 11/17/1977, NPS-77000336-0000 | 2D2, 06/04/1987, 3422-0005-0006 | 2D2, 06/04/1987, FHWA870506A | 3S, 12/28/1984, 619.0-84-HP-40-001 | 7K, 02/03/2011, FEMA070504A	487972					1914-1918	o35120d6	8/1/2022	9/23/2022
	675772				11255	Santa Lucia Rd	Atascadero	San Luis Obispo	93422			6Y, 12/21/2017, FHWA_2017_1204_001			054-271-004			1960		4/17/2018	9/23/2022
	565944	132093			6205	SANTA YNEZ	ATASCADERO	SAN LUIS OBISPO	93423			6Y, 12/10/2001, DOE-40-01-0019-0000 | 6Y, 12/10/2001, FHWA011003C			030-281-036		P	1918	o35120d6	4/5/2018	9/23/2022
	421405	18661	BRIDGE #49-100	40-3422-001^Survey Number		SR 41	ATASCADERO	SAN LUIS OBISPO		X	ATASCADERO CREEK (Corridor)	2D2, 06/04/1987, 3422-0005-0003 | 2D2, 06/04/1987, FHWA870506A | 7R, , 3422-0002-0000	487972		002 053 07	R 41 MP 16.9	S	1921	o35120d6	4/5/2018	9/23/2022
	421406	18662	BRIDGE #49-101			SR 41	ATASCADERO	SAN LUIS OBISPO		X	SPRR CO (Corridor)	7N, , 3422-0003-0000			002 053 07	R 41 MP 17.2	S	1902	o35120d6	4/5/2018	9/23/2022
	421407	18663	BRIDGE #49-102			SR 41	ATASCADERO	SAN LUIS OBISPO		X	SALINAS RIVER	7N, , 3422-0004-0000			002 053 07	R 41 MP 18.4	S	1933	o35120d6	4/5/2018	9/23/2022
	487967	90600				SR 41	ATASCADERO	SAN LUIS OBISPO			TEMPLETON RD (Corridor)	6Y, 06/04/1987, 3422-0017-0000 | 6Y, 06/04/1987, FHWA870506A					P	1930	o35120d6	4/5/2018	9/23/2022
	487991	90628	THE MALL	40-3422-001^Survey Number		TRAFFIC WY	ATASCADERO	SAN LUIS OBISPO			EL CAMINO REAL	2D2, 06/04/1987, 3422-0005-0004 | 2D2, 06/04/1987, FHWA870506A	487972				M	1914-1915	o35120d6	4/5/2018	9/23/2022
	529981	168122			5440	TRAFFIC WY	ATASCADERO	SAN LUIS OBISPO	93422			6Y, 09/25/2007, HUD070911B			029-062-013		P	1950	o36119c3	4/5/2018	9/23/2022
	493247	97294	CARLTON HOTEL		5995	TRAFFIC WY	ATASCADERO	SAN LUIS OBISPO	93422			2S2, 09/11/1995, HUD941024A | 7J, 09/27/1995, 537.9-40-0003					P	1929		4/5/2018	9/23/2022
	471778	70093			16575	WALNUT ST	ATASCADERO	SAN LUIS OBISPO				6Y, 03/18/1991, HUD910219D					U	1940		4/5/2018	9/23/2022

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6.10 Acronyms and Key Terms

AB-52	Assembly Bill 52
AERHD	Atascadero Estate Residential Historic District
BERD	California Built Environment Resource Directory
CEQA	California Environmental Quality Act
CHL	California Historical Landmark
CHSC	California Health and Safety Code
CHRIS	California Historic Resources Information System
CalPoly	California Polytechnic University, San Luis Obispo
CRHR	California Register of Historical Resources
CFR	Code of Federal Regulations
DPR	California Department of Parks and Recreation
HS	Historic Site (referring to Atascadero overlay zoning designation)
LOC	Land Use, Open Space and Conservation
NHPA	National Historic Preservation Act of 1966
NPS	National Park Service
NRHP	National Register of Historic Places
OHP	California Office of Historic Preservation
PRC	California Public Resources Code
SHPO	California State Historic Preservation Officer

APPENDIX G

Noise Impact Analysis

NOISE IMPACT ANALYSIS

FOR

CITY OF ATASCADERO GENERAL PLAN UPDATE & CORRESPONDING ZONING CODE UPDATE

APRIL 2026

PREPARED BY:

AMBIENT
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Appendix A Noise Modeling

LIST OF COMMON TERMS AND ACRONYMS

ADT	Average Daily Traffic
ANSI	Acoustical National Standards Institute, Inc.
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
CNEL	Community Noise Equivalent Level
dB	Decibels
dBA	A-Weighted Decibels
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GPU	General Plan Update
Hz	Hertz
HVAC	Heating Ventilation & Air Conditioning
in/sec	Inches per Second
L_{dn}	Day-Night Level
L_{eq}	Equivalent Sound Level
L_{max}	Maximum Sound Level
ppv	Peak Particle Velocity
UPRR	Union Pacific Railroad
U.S. EPA	United States Environmental Protection Agency
VMT	Vehicle Miles Traveled
ZCU	Zoning Code Update

INTRODUCTION

This report provides a discussion of existing conditions, applicable regulatory framework, and an analysis of noise and groundborne vibration impacts associated with the proposed City of Atascadero 2045 General Plan Update (2045 GPU) and corresponding Zoning Code Update (ZCU).

PROPOSED CITY OF ATASCADERO GENERAL PLAN UPDATE

The 2045 GPU is a long-range policy document that provides context and establishes guidance for decision-making, design and development of new projects, conservation of natural resources, promotion of economic development, improvements to mobility and infrastructure systems, expansion of public services, and enhancement of community amenities. The 2045 GPU identifies year 2045 as a horizon year; however, the City recognizes that not all initiatives and goals in the 2045 GPU may be achieved by 2045. The Zoning Code implements the General Plan and provides an administrative and development framework for parcels throughout the City. The Zoning Code will be revised to accommodate new General Plan Placetypes and will incorporate administrative and process updates aligned with General Plan policies, existing city processes, and permit streamlining directives.

EXISTING SETTING

Acoustic Fundamentals

Noise is generally defined as sound that is loud, disagreeable, or unexpected. Sound is mechanical energy transmitted in the form of a wave because of a disturbance or vibration. Sound levels are described in terms of both amplitude and frequency.

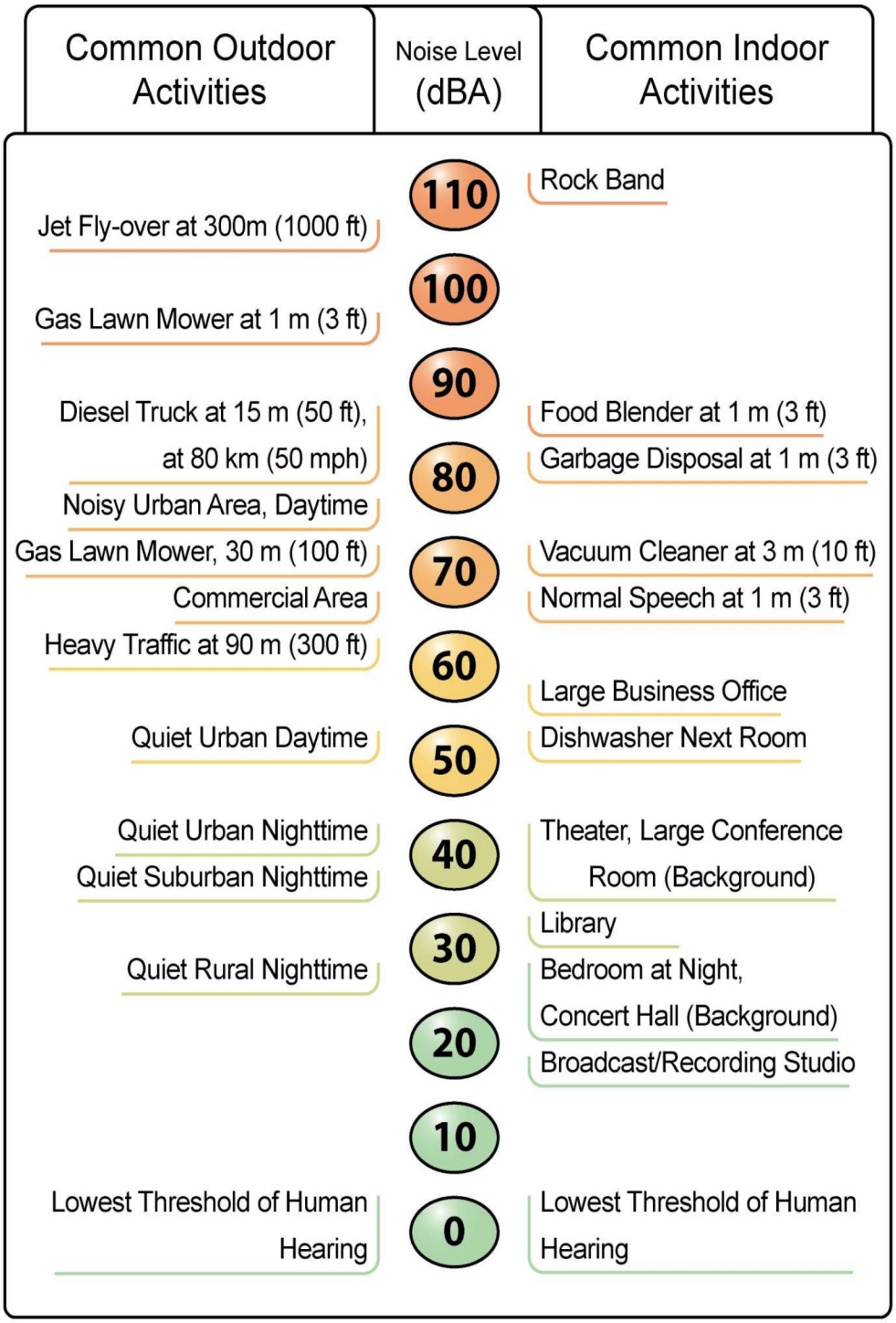
Amplitude

Amplitude is defined as the difference between ambient air pressure and the peak pressure of the sound wave. Amplitude is measured in decibels (dB) on a logarithmic scale. For example, a 65 dB source of sound, such as a truck, when joined by another 65 dB source results in a sound amplitude of 68 dB, not 130 dB (i.e., doubling the source strength increases the sound pressure by 3 dB). Amplitude is interpreted by the ear as corresponding to different degrees of loudness. Laboratory measurements correlate a 10 dB increase in amplitude with a perceived doubling of loudness and establish a 3 dB change in amplitude as the minimum audible difference perceptible to the average person.

Frequency

The frequency of a sound is defined as the number of fluctuations of the pressure wave per second. The unit of frequency is the Hertz (Hz). One Hz equals one cycle per second. The human ear is not equally sensitive to sound of different frequencies. For instance, the human ear is more sensitive to sound in the higher portion of this range than in the lower and sound waves below 16 Hz or above 20,000 Hz cannot be heard at all. To approximate the sensitivity of the human ear to changes in frequency, environmental sound is usually measured in what is referred to as “A-weighted decibels” (dBA). On this scale, the normal range of human hearing extends from about 10 dBA to about 140 dBA. Common community noise sources and associated noise levels, in dBA, are depicted in Figure 1.

Figure 1. Common Noise Levels



Source: Caltrans 2022

Addition of Decibels

Because decibels are logarithmic units, sound levels cannot be added or subtracted through ordinary arithmetic. Under the decibel scale, a doubling of sound energy corresponds to a 3-dB increase. In other words, when two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be 3 dB higher than one source under the same conditions. For example, if one automobile produces a sound level of 70 dB when it passes an observer, two cars passing simultaneously would not produce 140 dB; rather, they would combine to produce 73 dB. Under the decibel scale, three sources of equal loudness together would produce an increase of 5 dB.

Sound Propagation & Attenuation

Geometric Spreading

Noise sources are generally characterized as either a localized source (i.e., point source) or a line source. Examples of point sources include construction equipment, vehicle horns, alarms, and amplified sound systems. Examples of a line sources include trains and on-road vehicular traffic. Sound from a point source propagates uniformly outward in a spherical pattern.

For a point source, sound levels generally decrease (attenuate) at a rate of approximately 6 decibels for each doubling of distance from the source, depending on ground surface characteristics. For acoustically hard sites (i.e., sites with a reflective surface between the source and the receiver), no excess ground attenuation is assumed. Parking lots and bodies of water are examples of hard surfaces which generally attenuate at this rate. For acoustically absorptive or soft sites (i.e., those sites with an absorptive ground surface between the source and the receiver, such as soft dirt, grass, or scattered bushes and trees), an excess ground-attenuation value of 1.5 decibels per doubling of distance is normally assumed. When soft surfaces are present, the excess ground attenuation for soft surfaces generally results in an overall attenuation rate of approximately 7.5 decibels per doubling of distance from the point source.

On-road vehicle traffic consists of several localized noise sources on a defined path, and hence can be treated as a line source, which approximates the effect of several point sources. Noise from a line source propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels for line sources attenuate at a rate of approximately 3 decibels for each doubling of distance for hard sites and approximately 4.5 decibels per doubling of distance for soft sites.

Atmospheric Effects

Receptors located downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lowered noise levels. Sound levels can be increased at large distances (e.g., more than 500 feet) from the highway due to atmospheric temperature inversion (i.e., increasing temperature with elevation). Other factors such as air temperature, humidity, and turbulence can also have significant effects.

Shielding by Natural or Human-Made Features

A large object or barrier in the path between a noise source and a receiver can substantially attenuate noise levels at the receiver. The amount of attenuation provided by shielding depends on the size of the object and the frequency content of the noise source. Natural terrain features (e.g., hills and dense woods) and human-made features (e.g., buildings and walls) can substantially reduce noise levels. Walls are often constructed between a source and a receiver specifically to reduce noise. A barrier that breaks the line of

sight between a source and a receiver will typically result in minimum 5 dB of noise reduction. Taller barriers provide increased noise reduction.

Noise reductions afforded by building construction can vary depending on construction materials and techniques. Standard construction practices typically provide approximately 15 dBA exterior-to-interior noise reductions for building facades, with windows open, and approximately 20-25 dBA, with windows closed. With compliance with current building construction and insulation requirements, exterior-to-interior noise reductions typically average approximately 25 dBA. The absorptive characteristics of interior rooms, such as carpeted floors, draperies and furniture, can result in further reductions in interior noise.

Human Response to Noise

The human response to environmental noise is subjective and varies considerably from individual to individual. Noise in the community has often been cited as a health problem, not in terms of actual physiological damage, such as hearing impairment, but in terms of inhibiting general well-being and contributing to undue stress and annoyance. The health effects of noise in the community arise from interference with human activities, including sleep, speech, recreation, and tasks that demand concentration or coordination. Hearing loss can occur at the highest noise intensity levels. When community noise interferes with human activities or contributes to stress, public annoyance with the noise source increases. The acceptability of noise and the threat to public well-being are the basis for land use planning policies preventing exposure to excessive community noise levels.

Unfortunately, there is no completely satisfactory way to measure the subjective effects of noise or of the corresponding reactions of annoyance and dissatisfaction. This is primarily because of the wide variation in individual thresholds of annoyance and habituation to noise over differing individual experiences with noise. Thus, an important way of determining a person's subjective reaction to a new noise is the comparison of it to the existing environment to which one has adapted: the so-called "ambient" environment. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged. Regarding increases in A-weighted noise levels, knowledge of the following relationships will be helpful in understanding this analysis:

- Except in carefully controlled laboratory experiments, a change of 1 dB cannot be perceived by humans;
- Outside of the laboratory, a 3 dB change is considered a just-perceivable difference;
- A change in level of at least 5 dB is required before any noticeable change in community response would be expected. An increase of 5 dB is typically considered substantial;
- A 10-dB change is subjectively heard as an approximate doubling in loudness and would almost certainly cause an adverse change in community response.

A limitation of using a single noise-level increase value to evaluate noise impacts, as discussed above, is that it fails to account for pre-development noise conditions. With this in mind, the Federal Interagency Committee on Noise (FICON) developed guidance to be used for the assessment of project-generated increases in noise levels that take into account the ambient noise level. The FICON recommendations are based upon studies that relate aircraft noise levels to the percentage of persons highly annoyed by aircraft noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, these recommendations are often used in environmental noise impact assessments involving the use of

cumulative noise exposure metrics, such as the average-daily noise level (i.e., CNEL, L_{dn}). FICON-recommended noise evaluation criteria are summarized in Table 1 (FICON 2000).

Table 1. Federal Interagency Committee on Noise Recommended Criteria for Evaluation of Increases in Ambient Noise Levels

Ambient Noise Level Without Project	Increase Required for Significant Impact
< 60 dB	5.0 dB, or greater
60-65 dB	3.0 dB, or greater
> 65 dB	1.5 dB, or greater
Source: FICON 2000	

As depicted in Table 1, an increase in the traffic noise level of 5.0, or greater, would typically be considered to result in increased levels of annoyance where existing ambient noise levels are less than 60 dB. Within areas where the ambient noise level ranges from 60 to 65 dB, increased levels of annoyance would be anticipated at increases of 3 dB, or greater. Increases of 1.5 dB, or greater, could result in increased levels of annoyance in areas where the ambient noise level exceeds 65 dB. The rationale for the FICON-recommended criteria is that as ambient noise levels increase, a smaller increase in noise resulting from a project is sufficient to cause significant increases in annoyance (FICON 2000). These criteria are commonly applied for analysis of environmental noise impacts.

Existing Noise Environment

Ambient Noise Monitoring

Short-term (10-minute) and long-term (24-hours) noise level measurements were conducted from October 10, 2022, through October 13, 2022, for the purpose of documenting and measuring the existing noise environment at various locations throughout the City. Measurement locations were selected near major noise sources and other locations of interest within the community.

Short-Term Ambient Noise Measurements

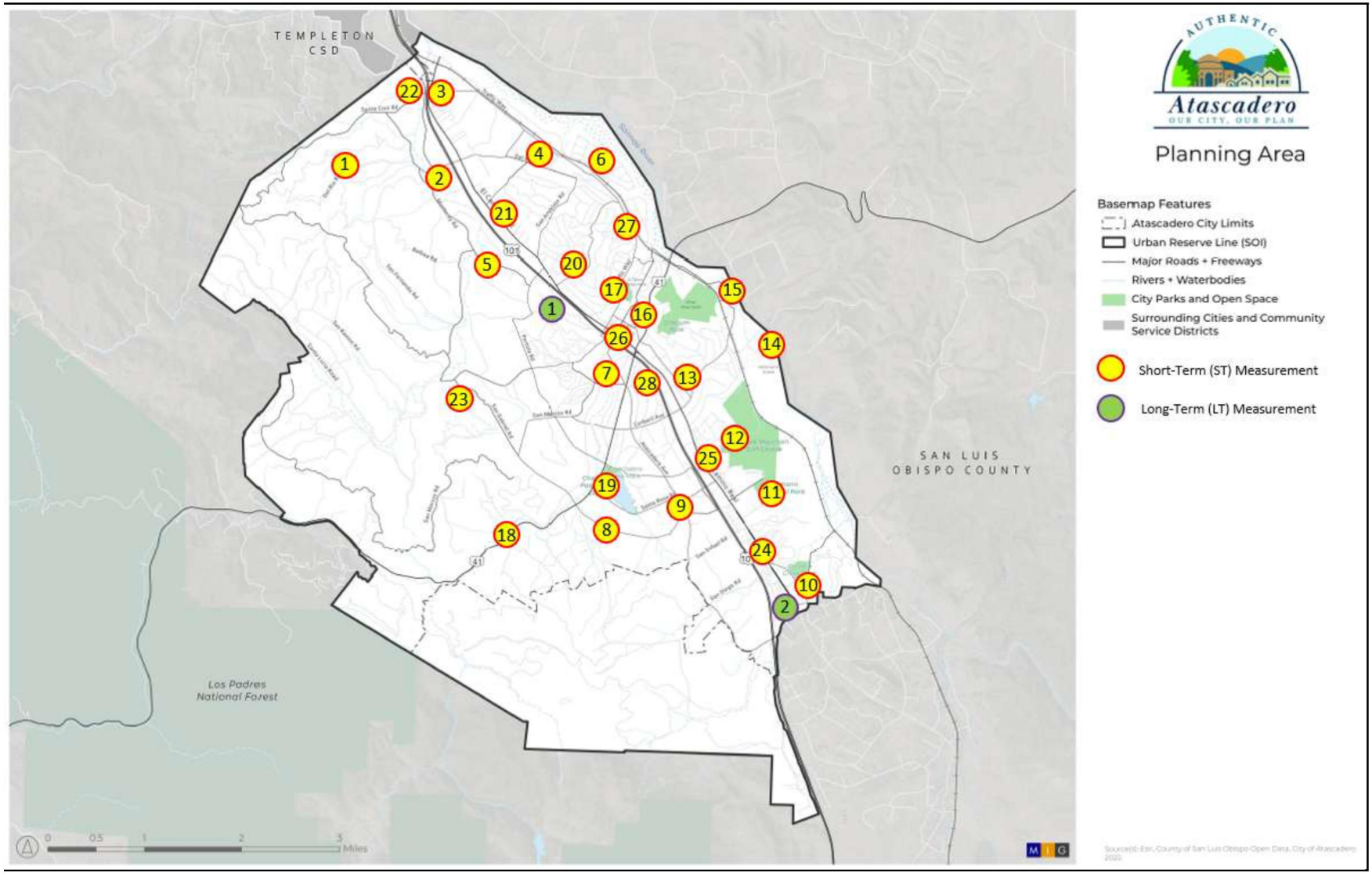
Twenty-eight short-term measurement were conducted. Short-term ambient noise measurement locations and corresponding measured average-hourly noise levels (in dBA L_{eq}) are summarized in Table 2. Noise measurement locations are depicted in Figure 2.

As noted in Table 2, measured daytime noise levels ranged from approximately 40 to 73 dBA L_{eq}. Ambient noise levels are largely influenced by vehicle traffic on area roadways. To a lesser extent, aircraft overflights and other noise sources within the community (e.g., landscaping, industrial activities, construction activities) also contribute to the ambient noise environment.

Long-Term Ambient Noise Measurements

Two long-term measurements were conducted, which are identified as LT-1 and LT-2 in Figure 8-2. Noise measurement location LT-1 was located approximately 110 feet from U.S. Highway 101, near San Palo Road. Noise measurement location LT-2 was located approximately 500 feet from U.S Highway 101 and 300 feet from El Camino Real. Measured ambient noise levels for noise measurement locations LT-1 and LT-2 are summarized in Tables 3 and 4, respectively.

Figure 2: Ambient Noise Measurement Locations



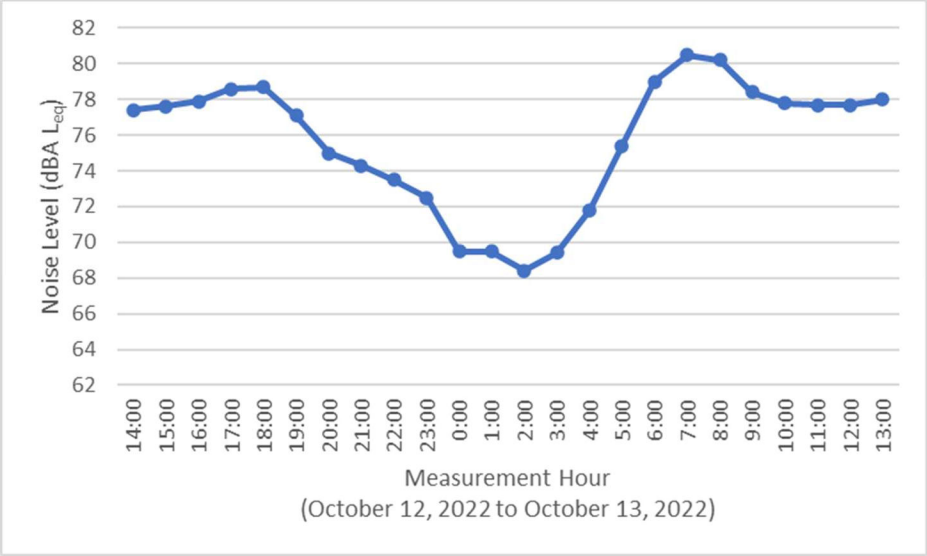
Refer to Tables 2, 3, and 4 for corresponding noise measurement data.

Table 2. Summary of Short-Term Measured Ambient Noise Levels

Measurement	Location	Measurement Period	Primary Noise Sources	Noise Level (dBA L_{eq})
October 10, 2022				
ST1	7800 Del Rio Road	10:41 – 10:51	Birds, Electrical Equipment	44.3
ST2	Apple Valley Park	11:03 – 11:13	Birds, Traffic, People Walking on Path	45.3
ST3	5400 Santa Cruz Road	11:50 – 12:00	Distant Traffic, Birds	57.7
ST4	San Benito Elementary School	12:10 – 12:20	Birds, Truck Passby	50.3
ST5	Monterey Road Elementary School	12:32 – 12:42	Traffic, Birds	63.2
ST6	The Lakes Lake	12:57 – 13:07	Birds	41.5
ST7	High School Hill Road	15:08 – 15:18	Traffic, Dogs	52.6
October 11, 2022				
ST8	Hope Lutheran Church	10:02 – 10:12	Traffic, Propeller Plane Overflight, Dogs, Birds	50.7
ST9	9600 Atascadero Avenue	10:26 – 10:36	Traffic, Birds	60.5
ST10	Paloma Creek Park	10:47 – 10:57	Distant Traffic, Children, Birds	44.4
ST11	Heilmann Regional Park	11:10 – 11:20	Traffic, Golf Cart, Birds, Squirrels	40.4
ST12	8500 El Corte Road	11:31 – 11:41	Traffic	52.5
ST13	Pueblo Avenue/Sombrilla Avenue	11:53 – 12:03	Traffic, Conversation, Propeller Plane Overflight, Dogs	53.5
ST14	7700 Aragon Road	12:16 – 12:26	Dogs, Birds	49.6
ST15	7100 Sycamore Road	12:40 – 12:50	Traffic, Birds, Children, Sheep/Goat	64.7
ST16	5454 CA-41 Parking	13:03 – 13:13	Traffic	64.8
ST17	Traffic Way Park	13:24 – 13:34	Traffic	57.8
October 12, 2022				
ST18	12500 CA-41	10:51 – 11:01	Traffic	67.9
ST19	Atascadero Lake Park	11:25 – 11:35	Traffic	63.9
ST20	Nogales Avenue/Lobos Avenue	11:56 – 12:06	Traffic, Birds, Dog, Distant Power Tool	53.4
ST21	3300 El Camino Real	12:19 – 12:29	Traffic	68.2
ST22	1000 San Ramon Road	13:24 – 13:34	Traffic	71.2
ST23	6000 San Gabriel Road	14:06 – 14:16	Traffic, Propeller Plane Overflight	56.8
October 13, 2022				
ST24	10700 El Camino Real	10:40 – 10:50	Traffic	66.9
ST25	8965 El Camino Real	11:00 – 11:10	Traffic	71.7
ST26	Sunken Gardens	11:22 – 11:32	Traffic, Water Fountain	58.3
ST27	4890 Alamo Avenue	11:45 – 11:55	Dogs, Vehicle Passby	56.0
ST28	6050 Marchant Avenue	12:56 – 13:06	Traffic	73.1

Noise measurements were conducted from October10, 2022 to October 13, 2022. Refer to Figure 2 for noise measurement locations.

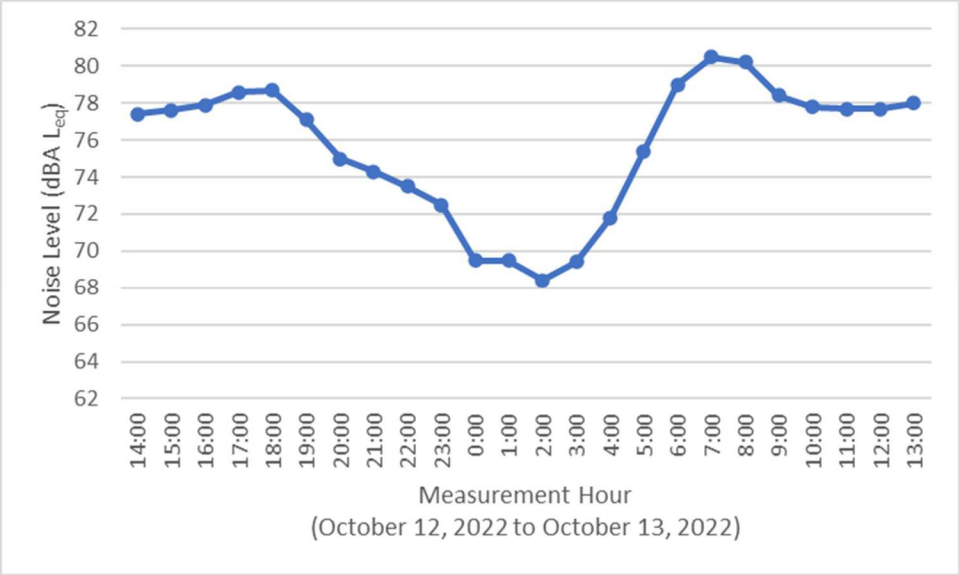
Table 3. Measured Long-Term Noise Levels – Measurement Location LT-1



Measurement Hour	Noise Level (dBA L_{eq})
14:00	77.4
15:00	77.6
16:00	77.9
17:00	78.6
18:00	78.7
19:00	77.1
20:00	75
21:00	74.3
22:00	73.5
23:00	72.5
0:00	69.5
1:00	69.5
2:00	68.4
3:00	69.4
4:00	71.8
5:00	75.4
6:00	79
7:00	80.5
8:00	80.2
9:00	78.4
10:00	77.8
11:00	77.7
12:00	77.7
13:00	78

Notes: Average-daily noise level measured 81 dBA CNEL/L_{dn}. Refer to Figure 2 for noise measurement locations.

Table 4. Measured Long-Term Noise Levels – Measurement Location LT-2



Measurement Hour	Noise Level (dBA L_{eq})
15:00	55.7
16:00	57.5
17:00	54.9
18:00	53.3
19:00	53.8
20:00	52
21:00	51.2
22:00	50.3
23:00	49.7
0:00	48.1
1:00	48.6
2:00	47.5
3:00	47.7
4:00	49.3
5:00	49.3
6:00	53.9
7:00	53.5
8:00	52.7
9:00	52.4
10:00	54.5
11:00	55.8
12:00	53.4
13:00	52
14:00	52.3

Notes: Average-daily noise level measured 57 dBA CNEL/L_{dn}. Refer to Figure 2 for noise measurement locations.

As noted in Tables 3, measured ambient noise levels at location LT-1 ranged from approximately 68 dBA L_{eq} during the nighttime hours to a high of approximately 81 dBA L_{eq}, during the daytime hours. Average-daily noise levels at location LT-1 measured 81 dBA CNEL/L_{dn}. As noted in Tables 4, measured ambient noise levels at location LT-2 ranged from approximately 48 dBA L_{eq} during the nighttime hours to a high of approximately 58 dBA L_{eq} during the daytime hours. Average-daily noise levels at location LT-2 measured 57 dBA CNEL/L_{dn}. In general, nighttime noise levels are typically 5-10 dB lower than daytime noise levels.

Noise Sources

Surface Transportation Sources

Roadway Vehicular Traffic

As noted earlier in this report, noise from vehicular traffic on area roadways is a primary source of ambient noise in the City. Major sources of roadway traffic noise within the City of Atascadero include United States Highway 101 (US-101) and State Route 41 (SR-41). To a lesser extent, other major roadways, such as El Camino Real, also contribute to ambient traffic noise levels. Existing noise-sensitive land uses located along these traffic corridors consist predominantly of residential land uses the nearest of which are generally located approximately 50 feet from the near-travel-lane centerline of US-101 and approximately 27 feet from the near-travel-lane centerline of SR-41. Other noise-sensitive land uses generally located along these corridors include, but are not limited to, places of worship, hotels, and recreational uses.

Traffic noise levels were calculated using the Federal Highway Administration (FHWA) Roadway Noise Prediction Model (FHWA RD-77-108) based on average-daily traffic (ADT) volumes obtained from the traffic analysis prepared for the 2045 GPU/ZCU (CCTC 2025). Predicted existing traffic noise levels and distances to traffic noise contours for major roadway segments are summarized in Table 5. Based on the modeling conducted, existing traffic noise levels along area roadways range from approximately 61 to 79 dBA CNEL at 50 feet from the near-travel-lane centerline. Existing transportation noise contours for major roadway segments within the City of Atascadero are depicted in Figure 3.

Railroad Traffic

The Union Pacific Railroad (UPRR) runs north-south through the City near the western City limits with a portion of the tracks adjacent to Traffic Way. Depending on demand, approximately five trains pass through the City on a daily basis. including three freight trains and two passenger trains (Amtrak Coast Starlight). Existing noise-sensitive land uses located along the UPRR corridor consist predominantly of residential land uses the nearest of which are generally located approximately 25 feet from the UPRR track centerline. Other nearby noise-sensitive land uses include Chalk Mountain Golf Course, which is located approximately 70 feet from the track centerline.

Existing train noise levels and distance to noise contours are summarized in Table 6. Based on a conservative estimate of 5 trains per day, average-daily noise levels along the railroad corridor would be approximately 66 dBA CNEL at 100 feet from the rail corridor centerline. Train noise events can also be a source of intermittent noise, including noise generated by locomotive engines, wheel squeal, and warning horns. These instantaneous noise events can contribute to increased levels of annoyance to occupants of nearby noise-sensitive land uses. Existing transportation noise contours within the City of Atascadero are depicted in Figure 3.

Table 5. Existing Roadway Traffic Noise Levels & Contour Distances

Roadway Segment	ADT Volumes	CNEL at 50 ft. from Near-travel-lane Centerline	Distance to CNEL Contour (Feet from Road Centerline)		
			70	65	60
US-101: Santa Barbara Rd. to Santa Rosa Rd.	55,000	78.7	313	670	1,441
US-101: Santa Rosa Rd. to Curbaril Ave.	55,000	78.7	313	670	1,441
US-101: Curbaril Ave. to SR-41	55,000	78.7	313	670	1,441
US-101: SR-41 to Traffic Way	63,000	77.5	261	557	1,196
US-101: Traffic Way to San Anselmo Rd.	63,000	77.5	261	557	1,196
US-101: San Anselmo Rd to del Rio Rd.	63,000	77.5	261	557	1,196
US-101: del Rio Rd to San Ramon Rd.	65,000	77.6	266	568	1,221
US-101: San Ramon Rd to Vineyard Rd.	65,000	77.6	262	558	1,221
SR-41: Atascadero Ave. to Curbaril Ave.	10,200	67.3	WR	95	201
SR-41: Santa Rosa Rd to Curbaril Ave.	11,100	67.6	WR	100	212
SR-41: US 101 to Atascadero Ave.	13,700	66.1	WR	80	169
SR-41: Santa Ysabel Ave. to Mercedes Ave.	6,300	66.3	WR	68	145
SR-41: Rocky Canyon Rd to Mercedes Ave.	5,600	67.7	WR	85	182
El Camino Real: San Ramon Rd to Del Rio Rd.	10,200	66.0	WR	98	295
El Camino Real: Del Rio Rd to Rosario Ave.	11,100	66.3	WR	105	321
El Camino Real: Rosario Ave. to Highway 41	13,700	61.1	WR	WR	100
El Camino Real: Highway 41 to San Diego Rd.	6,300	63.9	WR	65	184
El Camino Real: San Diego Rd. to Santa Barbara Rd.	5,600	63.4	WR	59	164

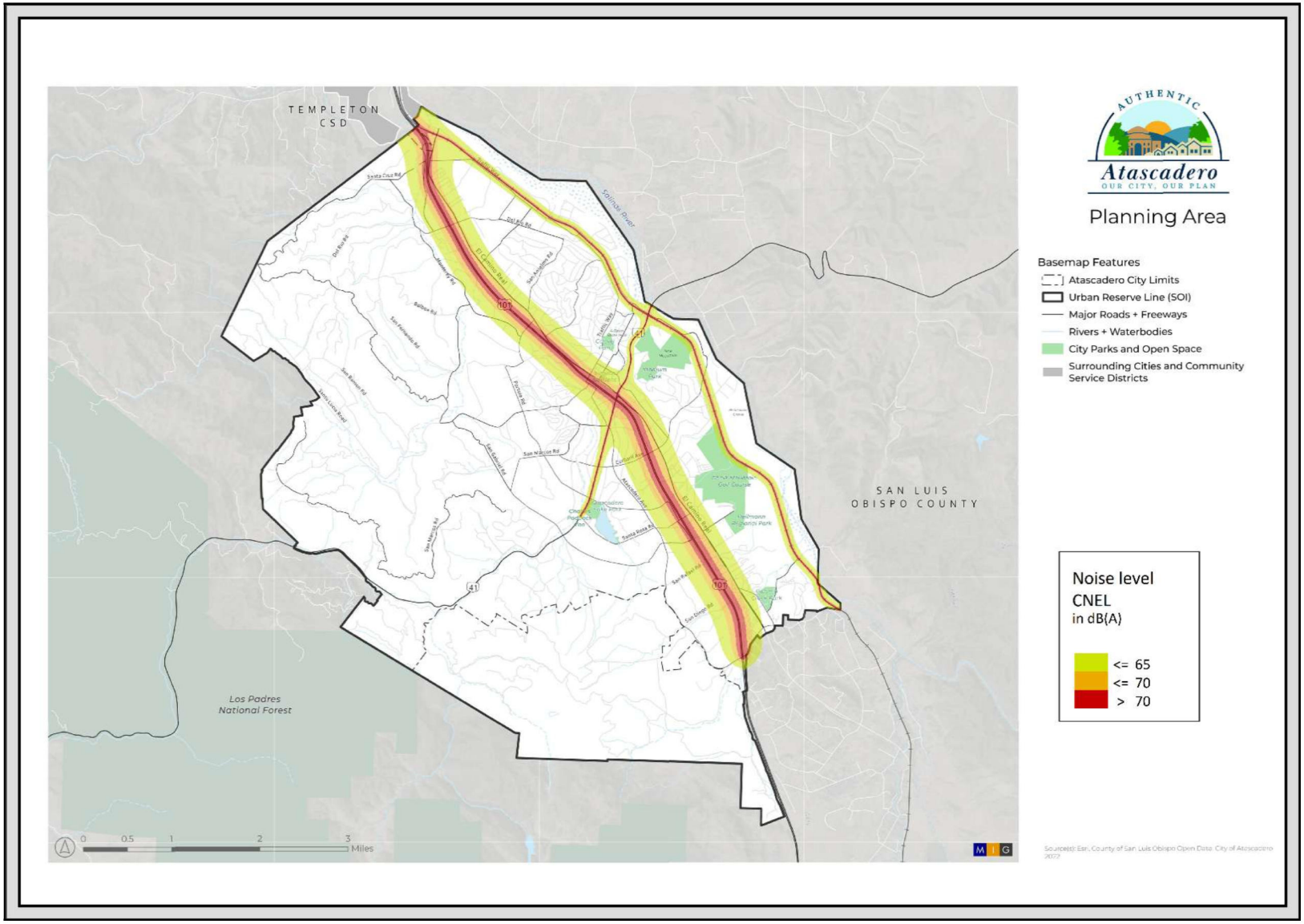
Traffic volumes were derived from the traffic analysis prepared for this project (CCTC 2025). Does not include shielding from intervening structures or terrain.
WR= Contour is located within road right-of-way

Table 6. Existing Railroad Traffic Noise Levels

Train Type	Number of Trains/Day	CNEL at 100 feet from Railroad Track Centerline	Distance to CNEL Contours (feet) from Railroad Track Centerline		
			70	65	60
Freight & Passenger	5	66	51	108	233

UPRR freight trains distributed equally over a 24-hour period. Does not include shielding provided by intervening terrain or structures. Does not include shielding from intervening structures or terrain. Projected railroad noise contours are depicted in Figure 8-3.

Figure 3. Existing Major Transportation Noise Contours



Predicted noise contours do not include shielding from intervening structures or terrain.

Non-Transportation Sources

Within the City, major non-transportation noise sources consist predominantly of industrial and commercial land uses. Many industrial processes produce noise, even when the best available noise control technology is applied. Noise exposures within industrial facilities are controlled by federal and state employee health and safety regulations (i.e., regulations of the Occupational Safety and Health Administration of the U.S. Department of Labor [OSHA] and the California Division of Occupational Safety and Health [Cal-OSHA]). Exterior noise levels that affect neighboring parcels are typically subject to local standards. Commercial, recreational, and public facility activities can also produce noise that may affect adjacent noise-sensitive land uses. These noise sources can be continuous or intermittent and may contain tonal components that are annoying to individuals who live nearby. For instance, emergency-use sirens and backup alarms are often considered nuisance noise sources but may not occur frequently enough to be considered incompatible with noise-sensitive land uses. In addition, noise generation from fixed noise sources may vary based upon climate conditions, time of day, and existing ambient noise levels.

From a land-use planning perspective, stationary-source noise control issues focus on two goals: (1) preventing the introduction of new noise-producing uses in noise-sensitive areas; and (2) preventing encroachment of noise-sensitive uses upon existing noise-producing facilities. The first goal can be achieved by applying noise performance standards to proposed new noise producing uses. The second goal can be met by requiring new noise-sensitive uses near noise-producing facilities include noise-reduction measures to ensure compliance with noise performance standards. Each of these goals stresses the importance of avoiding the location of new uses that may be incompatible with adjoining uses.

The following discussions of existing non-transportation noise sources in the community are intended to be representative of the sources and relative noise levels associated with such uses. The average-hourly noise levels (in dBA L_{eq}) discussed for these sources provide an indication of the noise levels that can generally be expected to occur over an extended period of time. The L_{eq} noise levels do not necessarily reflect possible intermittent high noise levels associated with the various uses but are useful for general planning purposes. Actual noise levels at nearby noise-sensitive receptors will vary depending on the operational characteristics of the facility, meteorological conditions, and the physical landscape.

Non-transportation noise sources within the City consist predominantly of commercial and industrial uses. To a somewhat lesser extent, other non-transportation noise sources would also include automotive/equipment repair and maintenance facilities, and construction activities. Noise levels associated with some of the more common non-transportation noise sources located throughout the community are discussed in more detail, as follows:

Commercial and Industrial Uses

Within the City planning area, commercial and industrial land uses are located primarily along major roadway and the UPRR corridor. Noise sources commonly associated with these land uses include truck traffic, loading dock activities, heavy-equipment operation, and building mechanical systems. There are no major industrial and commercial operations within the community (i.e. recycling centers, truck distribution centers, and food and agricultural products processing) and primary noise sources are associated with vehicle transportation along Highway 101, Highway 41, and El Camino Real. Various other activities, such as loading dock activities, can result in temporary or intermittent increases in ambient noise levels. In general, noise levels associated with these uses can range from approximately 55 to 85 dBA L_{eq} at 50 feet.

Noise levels associated with commercial and industrial land uses can vary depending on various factors, including site conditions, equipment operated, and the specific activities being conducted. As a result, actual noise levels at nearby noise-sensitive receptors varies depending on the above-mentioned conditions and other influences, such as location, distance from source, shielding provided by intervening terrain and structures, and ground attenuation rates. For this reason, noise generated by proposed commercial and industrial uses currently requires a site-specific analysis and compliance with municipal code standards.

Other Non-Transportation Noise Sources

Various other non-transportation noise sources can contribute to noticeable increases in ambient noise levels. Such sources would include, but are not limited to, recreational uses or events, particularly those that utilize amplified sound systems (e.g., sporting events, concerts, festivals, public actions, animal/vehicle exhibitions, etc.); automotive repair facilities; building mechanical systems, and landscape maintenance activities. Noise generated by such sources are often directional and can vary depending on site and operational characteristics.

Concerts and Live Music

Outdoor live music, festivals, and concert events are hosted at several locations within the City; such as, the Atascadero Lake Park, the Sunken Gardens, and The Plaza. Noise levels associated with live music and concerts can vary depending on musical style (e.g., rock, pop, metal, hip-hop, classical, etc.) and amplification. Additionally, noise generated from amplification (speakers) is directional, which can greatly affect operational noise levels at offsite locations.

Landscape Maintenance

Landscape maintenance activities often result in sporadic and intermittent increases in ambient noise levels. Equipment used for landscape maintenance often include the use of power mowers and leaf blowers. Leaf blowers and gasoline-powered lawnmowers can result in intermittent noise levels of up to approximately 100 dBA at 3 feet (EPA 1971). Resultant exterior noise levels could reach intermittent levels of approximately 75 dBA L_{max} at 50 feet. The use of leaf blowers, particularly when used during the more noise-sensitive evening and nighttime hours, may result in increased levels of annoyance.

Automotive Maintenance & Repair

Typical automotive maintenance and repair activities often include the use of pneumatic tools, air compressors, and power generators. Other equipment operations such as the use of power hand tools (e.g., sanders, drills, grinders, pneumatic wrenches, etc.), typically generate a lesser degree of noise. The use of air compressors, power generators, and pneumatic tools can generate noise levels of up to approximately 85 dBA at 50 feet. Noise levels generated by the use of hand-held tools, such as sanders, drills, and grinders, typically average between 63 and 87 dBA at 3 feet. The use of multiple hand tools, such as grinders being used on metal, can generate levels of 87 to 97 dBA at 3 feet (EPA 1971, FHWA 2008). Noise levels associated with these facilities would be dependent on the specific activities performed and source/facility characteristics.

Building Mechanical Systems

The majority of electrical and mechanical equipment in buildings is used for air circulation systems. Mechanical systems may also include pumping systems, elevators and escalators, and various other material conveyance systems. Much of this equipment is located in mechanical equipment rooms or in areas that provide shielding from direct public/personnel exposure (i.e., above ceilings, in walls, or behind enclosures.) Equipment located within exterior areas can result in increases in ambient noise levels,

particularly when located in unshielded areas and within line-of-sight of nearby receptors. Such equipment would include air-conditioning units, cooling towers, compressors, fans/turbines, electrical transformers, chillers, and pumps. Noise levels associated with these sources can vary depending on the specific equipment being operated, facility/equipment design, and operational characteristics. Typical noise levels associated with building mechanical equipment can range from less than 50 to 110 dBA at 3 feet, with the highest noise levels reaching approximately 85 dBA at 50 feet from the source.

Construction Activities

Construction noise typically occurs intermittently and varies depending upon the nature or phase (e.g., demolition/land clearing, grading, and excavation, erection) of construction. Noise generated by construction equipment, including pile drivers, material handling equipment, pavers, jackhammers, and portable generators, can result in intermittent and prolonged increases in ambient noise levels. Although construction noise impacts are generally short-term, they can result in increased levels of annoyance to occupants of nearby residential dwellings. In general, noise levels generated by construction activities can range from approximately 71 to 83 dBA L_{eq} at 50 feet from the source.

Noise-generating construction activities are currently regulated through implementation of the City's Noise Control ordinance, which generally limits these activities to the less noise-sensitive daytime hours (City of Atascadero 2022).

Noise-Sensitive Land Uses

Noise-sensitive land uses are generally considered to include those uses that would result in noise exposure that could cause health-related risks to individuals. Places where quiet is essential are also considered noise-sensitive uses. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Other land uses such as parks, historic sites, cemeteries, and recreation areas are also considered potentially sensitive to increases in exterior noise levels. School classrooms, places of assembly, hotels, libraries, and other places where low interior noise levels are essential are also considered noise-sensitive land uses. The following noise-sensitive land uses have been identified within the City of Atascadero:

- Residential land uses, including single-family units and multi-family units
- Schools
- Atascadero State Hospital
- Assisted living/care facilities
- Places of worship
- Hotels and lodging
- Community parks
- Public Library

REGULATORY SETTING

Federal, state, and local governments have established noise standards and guidelines to protect citizens from potential hearing damage and various other adverse physiological and social effects associated with noise. Those regulations most applicable to the community are summarized, as follows:

Federal

U.S. Environmental Protection Agency

In 1974, the U.S. Environmental Protection Agency (EPA) Office of Noise Abatement and Control published a report entitled *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*. Although this document does not constitute EPA regulations or standards, it is useful in identifying noise levels at which increased levels of annoyance would be anticipated. Based on an annual-average day-night noise level (expressed as L_{dn} or DNL), the document states that "undue interference with activity and annoyance" will not occur if outdoor noise levels in residential areas are below 55 dBA L_{dn} and indoor levels are below 45 dBA L_{dn} (EPA 1974).

Department of Housing and Urban Development

The Federal Department of Housing and Urban Development (HUD) guidelines for the acceptability of residential land uses are set forth in the Code of Federal Regulations, Title 24, Part 51, "Environmental Criteria and Standards." These guidelines identify a noise exposure of 65 dBA L_{dn}, or less, as acceptable. Exterior noise levels of 65 to 75 dBA L_{dn} are considered normally acceptable, provided appropriate sound attenuation is provided to reduce interior noise levels to within acceptable levels. Exterior noise levels above 75 dBA L_{dn} are considered unacceptable. The goal of the interior noise levels for residential, hotel, and hospital/nursing home uses is 45 dBA L_{dn}. These guidelines apply only to new construction supported by HUD grants and are not binding upon local communities.

Train Horn Rule

Under the federal train horn rule (49 CFR Part 222), locomotive engineers must begin to sound train horns at least 15 seconds, and no more than 20 seconds, in advance of all public grade crossings. In general, depending on train speed, train horns are often sounded within one-quarter mile of a grade crossing. Local communities may reduce the effects of train horns by establishing "quiet zones", which typically incorporate measures to reduce public risk caused by the absence of horn sounding (FRA 2026). No railroad quiet zones were identified in the City.

State

California Building Code

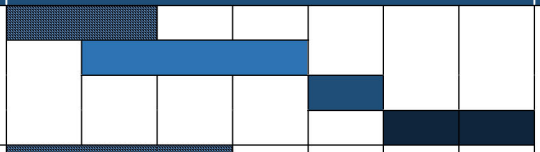
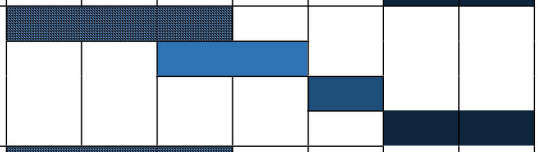
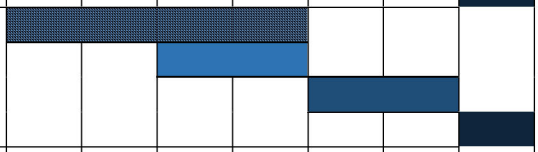
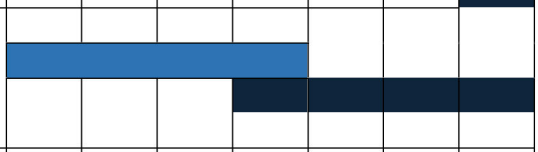
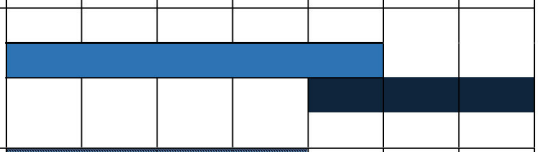
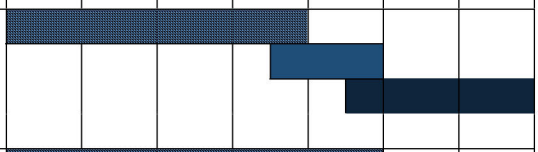
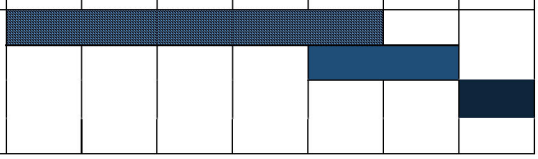
Title 24 of the California Code of Regulations contains standards for allowable interior noise levels associated with exterior noise sources (California Building Code, 1998 edition, Volume 1, Appendix Chapter 12, Section 1208A). The standards apply to new hotels, motels, dormitories, apartment houses, and dwellings other than detached single-family residences. The standards state that the interior noise level attributable to exterior sources shall not exceed 45 dBA CNEL in any habitable room. Proposed multi-family residential structures to be located where the CNEL exceeds 60 dBA shall require an acoustical analysis showing that the proposed building design would achieve the prescribed allowable interior noise standard.

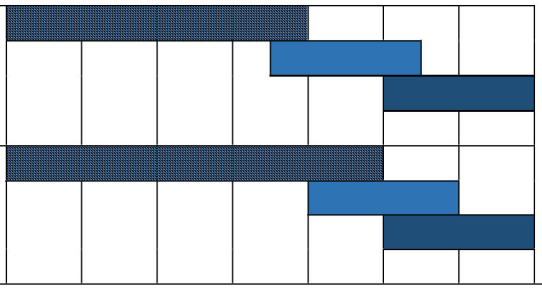
State of California General Plan Guidelines

The *State of California General Plan Guidelines*, published by the Governor's Office of Planning and Research (OPR), provides guidance for the acceptability of new land uses within specific noise environments. The goal of these recommended noise standards is, in part, to allow for a "normally acceptable" interior noise level of 45 dBA CNEL. For instance, assuming an average exterior-to-interior

noise reduction of 15 dBA (with windows partially open), an exterior noise level of 60 dBA CNEL for residential land uses, or less, would be sufficient to achieve an interior noise level of 45 dBA CNEL. Higher exterior noise levels may be allowed provided that noise-reduction measures are incorporated to achieve acceptable interior noise levels. Within "conditionally acceptable" exterior noise environments, conventional construction with incorporation of fresh air circulation systems sufficient to allow windows to remain closed would normally suffice. Compliance with current building code requirements and with windows closed, exterior-to-interior noise reductions typically average approximately 25 dBA, or more. The State's guidelines can be modified to reflect communities' sensitivities to noise. The State recommended noise criteria for land use compatibility are summarized in Table 7 (State of California 2017).

Table 7. State of California Land Use Compatibility Noise Criteria

Land Use Category	Community Noise Exposure (L_{dn} or CNEL, dBA) 55 60 65 70 75 80	Interpretation
Residential – Low Density Single Family, Duplex, Mobile Homes		**Normally Acceptable** Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
Residential – Multiple Family		
Transient Lodging – Motels, Hotels		**Conditionally Acceptable** New construction or development should be undertaken only after a detailed analysis of noise reduction requirements and needed noise insulation features included in the design.
Schools, Libraries, Churches, Hospitals, Nursing Homes		
Auditoriums, Concert Halls, Amphitheaters		**Normally Unacceptable** New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
Sports Arena, Outdoor Spectator Sports		
Playgrounds, Neighborhood Parks		
Golf Courses, Riding Stables, Water Recreation, Cemeteries		**Clearly Unacceptable**

Office Buildings, Business Commercial and Professional		New construction or development should generally not be undertaken
Industrial, Manufacturing, Utilities, Agriculture		

Source: California OPR 2017

City of Atascadero General Plan

The *Atascadero General Plan Safety and Noise Element*, Chapter IV, Section B, identifies exterior average-daily noise standards for the primary purpose of ensuring the compatibility of proposed land uses within exterior noise environments and ensure that noise levels at adjacent land uses do not exceed acceptable levels. These standards are also designed to protect existing land uses, including transportation and industry, from encroaching on urban uses. The City's existing General Plan noise standards for transportation and stationary (non-transportation) noise sources are summarized in Table 8 and Table 9, respectively (City of Atascadero 2002).

The *City's Current General Plan presents five goals for the Noise Element* (City of Atascadero 2002)*:*

- **SFN 6 —** Protect the citizens of Atascadero from harmful and annoying effects of exposure to excessive noise.
- **SFN 7 —** Protect the economic base of Atascadero by preventing incompatible land uses from encroaching upon existing or planned noise-producing uses.
- **SFN 8 —** Preserve the tranquility of residential areas by preventing the encroachment of noise-producing sources.
- **SFN 9 —** Educate residents of Atascadero concerning the effects of exposure to excessive noise and the methods available for minimizing such exposure.
- **SFN 10 —** Avoid or reduce noise impacts through site planning and project design, giving second preference to the use of noise barriers and/or structural modifications to buildings containing noise-sensitive land uses.

The following policies have been adopted by the City to accomplish the goals presented in the Noise Element (City of Atascadero 2002):

- **Policy 1.** The noise standards in this chapter represent maximum acceptable noise levels. New development should minimize noise exposure and noise generation. The City shall maintain a Noise Ordinance that implements the requirements of the Noise Element.

Transportation Noise Sources:

- **Policy 2.** New development of noise-sensitive land uses shall not be permitted in areas exposed to existing or projected future levels of noise from transportation noise sources which exceed 60 dB or CNEL (70 L_{dn}/CNEL for playgrounds and neighborhood parks) unless the project design includes effective mitigation measures to reduce noise in outdoor activity areas and interior spaces to or below the levels specified for the given land use in Table 8.

- **Policy 3.** Noise created by new transportation noise sources, including roadway improvement projects, shall be mitigated so as not to exceed the levels specified in Table 8 within the outdoor activity areas and interior spaces of existing noise sensitive land uses.

Table 8. Maximum Allowable Noise Exposure — Transportation Noise Sources

Land Use	Outdoor Activity Areas[1]	Interior Spaces	
	(L_{dn}/CNEL dB)	(L_{dn}/CNEL dB)	(L_{eq}, dB)[2]
Residential	60[3]	45	--
Transient Lodging	60[3]	45	--
Hospitals, Nursing Homes	60[3]	45	--
Theaters, Auditoriums, Music Halls	--	--	35
Churches, Meeting Halls, Office Buildings	60[3]	--	45
Schools, Libraries, Museums	--	--	45
Playgrounds, Neighborhood Parks	70	--	--

1. *Where the location of outdoor activity areas is unknown, the exterior noise level standards shall be applied to the property line of the receiving land use.*
2. *As determined for a typical worst-case hour during periods of use.*
3. *Where it is not possible to reduce noise in outdoor activity areas to 60 dB L_{dn}/CNEL or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 L_{dn}/CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.*

Source: City of Atascadero 2002

Stationary Noise Sources:

- **Policy 4.** New development of noise-sensitive land uses shall not be permitted where the noise level due to existing stationary noise sources will exceed the noise level standards of Table 9 unless effective noise mitigation measures have been incorporated into the design of the development to reduce noise exposure to or below the levels specified in Table 9.
- **Policy 5.** Noise created by new proposed stationary noise sources or existing stationary noise sources which undergo modifications that may increase noise levels shall be mitigated so as not to exceed the noise level standards of Table 9 on lands designated for noise-sensitive uses. This policy does not apply to noise levels associated with agricultural operations.

Table 9. Allowable Noise Exposure — Stationary Noise Sources[1]

	Daytime	Nighttime
	(7:00 a.m. to 9:00 p.m.)	(9:00 p.m. to 7:00 a.m.)
Hourly Equivalent (L_{eq} dB)[2]	50	45
Maximum Level (dB)[2]	70	65
Maximum Impulse Level (dB)[3]	65	60

1. *As determined at the property line of the receiving land use. When determining the effectiveness of noise mitigation measures, the standards may be applied on the receptor side of the noise barriers or other property line noise mitigation measures.*
2. *Sound level measurements shall be made with slow meter response.*
3. *Sound level measurements shall be made with fast meter response.*

Source: City of Atascadero 2002

Existing and Cumulative Noise Impacts

- **Policy 6.** The City shall consider implementing mitigation measures where existing noise levels produce significant noise impacts to noise sensitive land uses or where new development may result in cumulative increases of noise upon noise-sensitive land uses.

City of Atascadero Municipal Code

The City's Municipal Code (Title 9, Planning and Zoning, Chapter 14, Noise) includes various provisions intended to protect community residents from prolonged unnecessary, excessive, and annoying sound levels that are detrimental to the public health, welfare, and safety, or are contrary to the public interest. Examples of noise sources subject to the City's municipal Code include, but are not limited to, industrial and commercial machinery and equipment, pumps, fans, compressors, generators, air conditioners, and refrigeration equipment (City of Atascadero 2026).

Noise sources associated with construction-related activities are typically exempt from the City's ordinance provided that the activities do not take place before the hours of seven a.m. or after nine p.m. or by special permit from the Community Development Director. Various other activities are also exempt, including, but not limited to, school entertainment and athletic events, mobile sources associated with agricultural activities, and emergency response activities (City of Atascadero 2026).

In addition, the City's Noise Ordinance sets exterior and interior (Title 9, Sections 9-14.05 and 9-14.06, respectively) noise level standards. The City's exterior and interior noise level standards are summarized in Table 10 and Table 11, respectively. The exterior noise level standards are applied at the property line of the receiving land use. Where practical, the microphone shall be positioned three to five feet above the ground and away from reflective surfaces. The interior standards applied within the affected dwelling unit, when both the source and receiver are residential land uses. The reported interior noise level shall be determined by taking the arithmetic average of the readings taken at the various microphone locations (City of Atascadero 2026).

Table 10. City of Atascadero Municipal Code Exterior Noise Level Standards[1]

	Daytime (7:00 a.m. to 9:00 p.m.)	Nighttime (9:00 p.m. to 7:00 a.m.)
Hourly Equivalent (L_{eq} dB)[2, 3]	50	45
Maximum Level (dB)[2, 3]	70	65

1. *It is unlawful for any person at any location within the incorporated area of the City to create any noise, or to allow the creation of any noise, on property owned, leased, occupied, or otherwise controlled by such person which causes the exterior noise level when measured at any affected single or multiple-family residence, school, hospital, church or public library situated in the City to exceed the noise level standards as set forth in the table.*
2. *In the event the measured ambient noise level exceeds the applicable noise level standard in any category above, the applicable standard shall be adjusted so as to equal the ambient noise level.*
3. *Each of the noise level standards specified above shall be reduced by five (5) dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises.*

Source: City of Atascadero 2026

Table 11. City of Atascadero Municipal Code Interior Noise Level Standards[1]

	Daytime (7:00 a.m. to 9:00 p.m.)	Nighttime (9:00 p.m. to 7:00 a.m.)
Hourly Equivalent (L_{eq} dB)[2, 3]	40	35
Maximum Level (dB)[2, 3]	60	55

1. *It is unlawful for any person at any location within the incorporated area of the City to create any noise, or to allow the creation of any noise, on property owned, leased, occupied, or otherwise controlled by such person which causes the exterior noise level when measured at any affected single or multiple-family residence, school, hospital, church or public library situated in the City to exceed the noise level standards as set forth in the table.*
2. *In the event the measured ambient noise level exceeds the applicable noise level standard in any category above, the applicable standard shall be adjusted so as to equal the ambient noise level.*
3. *Each of the noise level standards specified above shall be reduced by five (5) dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises.*

Source: City of Atascadero 2026

ENVIRONMENTAL IMPACTS

SIGNIFICANCE THRESHOLD CRITERIA

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would result in:

1: Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

2: Generation of excessive groundborne vibration or groundborne noise levels.

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

Substantial increases in ambient noise levels that would exceed applicable City of Atascadero's noise standards would be considered to have a potentially significant impact. The City's General Plan transportation noise standards are summarized in Table 8. The City's General Plan noise standards for non-transportation noise sources are summarized in Table 9. The City's Municipal Code exterior and interior noise standards for non-transportation noise sources are summarized in Tables 10 and 11, respectively. For purposes of this analysis, substantial increases in average-hourly ambient noise levels attributable to non-transportation noise sources would be based on an increase of 5 dBA, or greater. Increases in transportation noise levels that would exceed the FICON average-daily noise thresholds identified in Table 1 would be considered substantial.

The nearest active public airport to the City of Atascadero is the Paso Robles Municipal Airport, located approximately 10 miles to the north. The nearest private airports include the Santa Margarita Ranch Airport located approximately 2.4 miles south of the City and the Oak Country Ranch Airport located approximately 5.6 miles northwest of the City. The City of Atascadero is not located within two miles of nearby airports or within the airport planning area of the Paso Robles Municipal Airport (City of Paso Robles 2004, SLOALUP 2026). As a result, no impact is anticipated to occur with regard to the exposure of sensitive receptors to aircraft noise levels. Therefore, impacts related to exposure to aircraft noise are not discussed further in this report.

METHODOLOGY

A combination of existing literature and general application of accepted noise thresholds was used to determine the impact of ambient noise levels resulting from and on development within the 2045 GPU Planning Area. Short- and long-term impacts associated with transportation and non-transportation noise sources were qualitatively assessed based on potential increases in ambient noise levels anticipated to occur at noise-sensitive land uses. Traffic noise levels along major area roadways were estimated using the FHWA Highway Traffic Noise Prediction model (FHWA-RD-77-108.) The FHWA modeling was based upon the Calveno noise-emission factors for automobiles and medium- and heavy-duty trucks. Input data used in the model included average-daily traffic volumes, day/night percentages of automobiles and medium and heavy trucks, vehicle speeds, ground attenuation factors, roadway widths, and ground elevation data. Traffic volumes for major roadway segments within the City were derived from the traffic analysis prepared for this project (CCTC 2045).

Predicted train noise levels and corresponding distances to noise contours for the UPRR railroad corridor were calculated in accordance with the Federal Transit Administration's (FTA's) *Transit Noise and Vibration Impact Assessment* guidance (FTA 2018). Train noise levels were quantified taking into account passenger and freight train traffic along the UPRR corridor, with the sounding of train horns.

RELEVANT PROPOSED 2045 GPU GOALS AND POLICIES

The 2045 GPU includes numerous goals and policies that would reduce noise impacts on sensitive receptors. Some of the most relevant of these goals and policies include, but are not limited to, the following:

Goal SEP-5: Neighborhoods that maintain a strong quality of life while supporting a vibrant and thriving economy.

Policy SEP-5.1: Noise Ordinance. Maintain and update the City's Noise Ordinance to balance the economic, social, and rural vision of Atascadero.

- **Action A:** Update the Noise Ordinance to incorporate construction best management practices to minimize construction noise when construction activities would be located within 1,000 feet of noise-sensitive land uses.
- **Action B:** Update the Noise Ordinance to add conditions that would allow for temporary increases in noise in certain locations, such as Downtown, mixed-use areas, key commercial nodes, and parks, to accommodate special events. Encourage and allow these uses with appropriate noise thresholds.
- **Action C:** Require projects to reduce noise exceeding the City's maximum allowable exterior and interior noise standards, unless exceptions are granted.

Policy SEP- 5.2: Land Use Compatibility. Prevent noise-sensitive land uses from encroaching upon existing or planned noise-producing uses, such as permitted industrial businesses and commercial activities, to allow businesses enterprises to thrive.

Policy SEP-5.3: Residential Noise Reduction. Preserve the tranquility of rural single-family residential areas by preventing the encroachment of noise-producing uses.

Policy SEP-5.4: Site Planning. Avoid or reduce noise impacts through site planning, project design, and implementation of the California Building Code and Health and Safety Code.

- **Action A:** Consider updating the Municipal Code to provide options for new development to provide buffers other than sound walls when required.

Policy SEP-5.6: Transportation Noise. Reduce the impacts of transportation-related noise.

- **Action A:** Avoid new development of noise-sensitive land uses in areas exposed to existing or projected future levels of noise from transportation noise sources which exceed the City's "normally acceptable" noise standards for land use compatibility unless the project design includes effective measures to reduce noise in outdoor activity areas and interior spaces to or below the "conditionally-acceptable levels," as specified for the given land use in Table 12.
- **Action B:** Work with Caltrans to evaluate and develop traffic noise mitigation programs along Highway 101 and State Route 41.

Policy SEP-5.7: Stationary Noise. Reduce the impacts of stationary noise sources.

- **Action A:** Avoid new development of noise-sensitive land uses where the noise level due to existing stationary noise sources will exceed the noise level standards of Table 13 unless effective noise mitigation measures have been incorporated into the design of the development to reduce noise exposure to or below the levels specified in Table 13.

- **Action B:** Require mitigation of noise created by new proposed stationary noise sources or existing stationary noise sources which undergo modifications so such uses do not to exceed the noise level standards of Table 13 on properties designated for noise-sensitive uses.
- **Action C:** Maintain exceptions for Agricultural activities within the Agricultural land use designations during reasonable hours.
- **Action D:** Work with private parties to reduce or mitigate noise exceeding allowed levels from existing industrial and commercial stationary-noise sources that impact nearby noise-sensitive land uses.

Table 12. Maximum Allowable Noise Standards for Transportation Noise Sources

Noise Sensitive Land Use	Interior Occupied Spaces (dBA)		Outdoor Activity Areas (dBA)[1]
	CNEL	L_{eq}[6]	
Residential	45[4]	--	65[2,3]
Mixed-Use Residential	45[4]	--	--
Convalescent Care Facilities, Hospitals	45[4]	--	70[2,3]
Transient Lodging	45	--	65[2,3]
Schools, Libraries, Museums and Places of Worship	--	45	--
Playgrounds, Neighborhood Parks	--	--	70[5]
Office Buildings	--	45	70[3]

1. To be applied at outdoor activity areas. Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied at the property line of the receiving land use.
2. Where it is not possible to reduce exterior noise levels to 65 dBA CNEL, or less, an exterior noise level of 70 dBA CNEL may be allowed provided that an acoustical analysis has been prepared for the project to identify available exterior noise-reduction measures to be incorporated and interior noise levels are in compliance with this table. For multi-family development, the exterior noise standard may be applied at a designated on-site outdoor common-use area in lieu of individual unit patios or balconies.
3. Where outdoor activity areas are not included in the project design, only the interior noise level standard shall apply.
4. In locations where railroad noise is the predominant noise source, the interior noise standard for residential land uses shall be reduced by 5 dB to account for the increased potential for sleep disruption to building occupants.
5. Where quiet is a basis for use.
6. This standard is intended to apply to land uses with operational hours predominantly during the daytime hours. The interior noise standard applies to a typical worst-case hour during the period of use.

Table 13. Maximum Allowable Noise Standards for Non-Transportation Noise Sources

	Daytime 7:00 AM to 7:00 PM	Evening 7:00 PM to 10:00 PM	Nighttime 10:00 PM to 7:00 AM
Exterior Noise Standards[1,2]			
Hourly Equivalent (L_{eq} dBA)[3,5]	55	50	45
Maximum Level (L_{max} dBA)[4,5]	75	70	65
Interior Noise Standards[6]			
Hourly Equivalent (L_{eq} dBA)[3,5]	45	40	35
Maximum Level (L_{max} dBA)[4,5]	60	55	45

1. As determined at the outdoor activity area of the receiving noise-sensitive land use. Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied at the property line of the receiving land use. In the event the measured ambient noise level exceeds the applicable noise level standard the applicable standard shall be adjusted so as to equal the ambient noise level.
2. Exterior noise standards are to be applied in noise-sensitive outdoor activity areas. Excludes mixed-use residential and school playgrounds.
3. L_{eq} = Average or "Equivalent" noise level during the worst-case operational hour of use. Sound level measurements shall be made with slow meter response.
4. L_{max} = Highest measured sound level occurring during a given interval of time (e.g., 1 hour). Sound level measurements shall be made with fast meter response.
5. Where the noise source in question consists of speech or music, or is impulsive in nature, or contains a pure tone, the noise standards are reduced by 5 dB.
6. As determined within occupied areas of the receiving noise-sensitive structure. In the event the measured ambient noise level exceeds the applicable noise level standard the applicable standard shall be adjusted so as to equal the ambient noise level.

Goal MO-1: A safe, multimodal, interconnected, and efficient circulation system that serves all community members

Policy MO-1.2: Multimodal Options. Increase pedestrian and bicycle connections and safety between residential areas and commercial areas along major corridors, parks and recreation opportunities, and neighboring communities.

Policy MO-1.3: Regional Facilities. Provide regional roadway facilities that minimize through-traffic intrusion on local streets and mitigate impacts on local traffic.

Policy MO-1.4: Congestion Management and Trip Reduction. Encourage mixed-use and jobs focused infill development that is served by multi-modal facilities to support reductions in regional and local vehicle miles traveled (VMT).

Policy MO-1.6: Truck Routes. Ensure the new and existing business that use large trucks as a core part of their operations, more than just routine delivery, minimize maintenance impacts on City infrastructure and noise impacts on residents.

IMPACTS AND MITIGATION MEASURES

Impact N-1: Would the General Plan result in exposure of persons or generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Short-term construction and long-term operational noise impacts associated with future development are discussed as follows:

Short-term Exposure to Construction Noise

Construction noise typically occurs intermittently and varies depending upon the nature or phase (e.g., demolition/land clearing, grading and excavation, erection) of construction. Noise generated by construction equipment, including earth movers, material handlers, and portable generators, can reach high levels. Temporary increases in ambient noise levels, particularly during the nighttime hours, could result in increased levels of annoyance and potential sleep disruption. Although noise ranges were found to be similar for all construction phases, the grading phase tends to involve the most equipment and resulted in slightly higher average-hourly noise levels. Typical noise levels for individual pieces of construction equipment and distances to predicted noise contours are summarized in Table 14. As depicted, individual equipment noise levels typically range from approximately 74 to 88 dBA L_{eq} at 50 feet. Typical operating cycles may involve 2 minutes of full power, followed by 3 or 4 minutes at lower settings. Intermittent noise levels can range from approximately 77 to 95 dBA L_{max}, the loudest of which include the use of pile drivers and impact devices (e.g., hoe rams, impact hammers).

Assuming a construction noise level of 88 dBA L_{eq} and an average attenuation rate of 6 dBA per doubling of distance from the source, exterior noise levels at sensitive receptors located within approximately 1,330 feet of the construction activity could reach and/or exceed 60 dBA L_{eq}. Depending on distances from nearby noise-sensitive land uses, the specific construction activities conducted, and intervening shielding, construction activities may result in temporary and periodic increases in ambient noise levels at nearby receptors. Of particular concern, are activities that occur during the evening and nighttime hours, however, construction activities in the City of Atascadero are generally permitted between 7:00 a.m. and 9:00 p.m., and construction occurring outside of these hours requires approval from the Community Development Director pursuant to the City's Municipal Code (Atascadero Municipal Code Section 9-

14.03(c)). If construction activities occur during more noise-sensitive hours, these activities may result in increased levels of annoyance and potential sleep disruption to occupants of nearby residential dwellings. As a result, because such increases could result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project and could result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance or of applicable standards of other agencies or neighboring jurisdictions, this impact is considered **potentially significant**.

Table 14. Typical Individual Construction Equipment Noise Levels

Equipment	Typical Noise Level (dBA) 50 feet from Source		Distance to Noise Contours (feet, dBA L_{eq})		
	L_{max}	L_{eq}	70 dBA	65 dBA	60 dBA
Air Compressor	80	76	105	187	334
Auger/Rock Drill	85	78	133	236	420
Backhoe/Front End Loader	80	76	105	187	334
Blasting	94	74	83	149	265
Boring Hydraulic Jack/Power Unit	80	77	118	210	374
Compactor (Ground)	80	73	74	133	236
Concrete Batch Plant	83	75	94	167	297
Concrete Mixer Truck	85	81	187	334	594
Concrete Mixer (Vibratory)	80	73	74	133	236
Concrete Pump Truck	82	75	94	167	297
Concrete Saw	90	83	236	420	748
Crane	85	77	118	210	374
Dozer/Grader/Excavator/Scraper	85	81	187	334	594
Drill Rig Truck	84	77	118	210	374
Generator	82	79	149	265	472
Gradall	85	81	187	334	594
Hydraulic Break Ram	90	80	167	297	529
Jack Hammer	85	78	133	236	420
Impact Hammer/Hoe Ram (Mounted)	90	83	236	420	748
Pavement Scarifier/Roller	85	78	133	236	420
Paver	85	82	210	374	667
Pile Driver (Impact/Vibratory)	95	88	420	748	1,330
Pneumatic Tools	85	82	210	374	667
Pumps	77	74	83	149	265
Truck (Dump/Flat Bed)	84	80	167	297	529
Sources: FTA 2018, FHWA 2008					

Proposed General Plan Policies that Provide Mitigation

Proposed 2045 GPU Policy SEP-5.1, Action A, would require the update of the City's Noise Ordinance to incorporate construction best management practices to minimize construction noise when construction activities would be located within 1,000 feet of noise-sensitive land uses.

Due to the short-term and intermittent frequency of construction noise, and the required compliance with the City's municipal code and 2045 GPU SEP-5.1, Action A, construction noise level increases would not result in a substantial temporary or periodic increase in ambient noise levels in excess of standards established in the local general plan or noise ordinance. As a result, this impact would be considered **less than significant**.

Long-term Exposure to Non-Transportation Noise

The proposed 2045 GPU/ZCU would primarily facilitate new residential, commercial, and industrial land uses within the city limits. Potential noise/land use conflicts would occur at the interface between planned residential and commercial land uses due to noise sources typically associated with commercial and industrial activities, such as rooftop-mounted HVAC equipment, delivery trucks, car washes, equipment/vehicle repair, and amplified sound. The City's existing General Plan includes noise standards for non-transportation noise sources (see Table 9). In addition, the City's Municipal Code also includes noise standards for non-transportation noise sources (see Tables 10 and 11). Depending on the uses proposed and the location of nearby noise-sensitive land uses, predicted non-transportation levels could potentially exceed the City's noise standards and, therefore, would be considered to have a **potentially significant** impact.

Proposed General Plan Policies that Provide Mitigation

The proposed 2045 GPU includes numerous goals and policies that would help to further reduce criteria noise impacts on receptors. Relevant policies include policies: SEP-5.1, 5.2, 5.3, 5.4, and 5.7. Compliance with these policies and the City's noise ordinance would ensure specific projects adhere to the Municipal Code and would mitigate any significant nuisance noise from commercial activities, rooftop-mounted HVAC equipment, delivery trucks, car washes, and amplified sound. Therefore, implementation of the 2045 GPU/ZCU would not result in ambient noise level environments at noise-sensitive uses that exceed the City's maximum allowable noise exposure standards set forth in Table 5. Consequently, future noise/land use conflicts between planned residential and commercial land would be **less than significant**.

Long-term Exposure to Transportation Noise

Major noise sources in the planning area consist predominantly of vehicle traffic on area roadways. Major roadway segments in the City include, but are not limited to, US-101, SR-41, and El Camino Real. In addition, as noted earlier in this report, rail traffic along the UPRR also contributes to transportation noise levels in the community. Roadway traffic noise and UPRR noise impacts are discussed in greater detail, as follows:

<u>Roadway Traffic Noise</u>

Traffic noise levels were estimated using the FHWA Highway Traffic Noise Prediction model (FHWA-RD-77-108) for existing and future cumulative (year 2045) conditions. Predicted future cumulative traffic noise levels and distances to projected noise contours are summarized in Tables 16. It is important to note that predicted noise contours are approximate and do not take into account shielding or reflection of noise due to intervening terrain or structures. As a result, predicted noise contours should be considered to represent bands of similar noise exposure along roadway segments, rather than absolute lines of demarcation. Although these predicted noise contours are not considered site-specific, they are useful for determining potential land use conflicts.

Predicted increases in future cumulative traffic noise levels, in comparison to existing traffic noise levels, are summarized in Table 17. Under future cumulative conditions with buildout of the 2045 GPU/ZCU and in comparison, to existing conditions, the 2045 GPU/ZCU would contribute to significant increases in traffic noise levels along various roadway segments, including potions of U.S. Highway 101 (Refer to Table 11). In addition, depending on the type of land uses developed and location, future development could be exposed to traffic noise levels in excess of the City's current noise standards for land use compatibility (refer to Table 8). As a result, exposure to vehicular traffic noise on area roadways would be considered a **potentially significant** impact.

Railroad Traffic Noise

The Union Pacific Railroad (UPRR) runs north-south through the City near the western City limits with a portion of the tracks adjacent to Traffic Way. Depending on demand, approximately five trains pass through the City on a daily basis. including three freight trains and two passenger trains (Amtrak Coast Starlight). By year 2045, freight trains traveling along this corridor could potentially increase, depending on future demand. However, projected future train volumes along the UPRR are currently not available.

Predicted train noise levels and distance to noise contours are summarized in Table 16. Based on a conservative estimate of 5 trains per day, average-daily noise levels along the railroad corridor would be approximately 66 dBA CNEL at 100 feet from the rail corridor centerline. Train noise events can also be a source of intermittent noise, including noise generated by locomotive engines, wheel squeal, and warning horns. These instantaneous noise events could contribute to increased levels of annoyance to occupants of nearby noise-sensitive land uses. Although the proposed 2045 GPU/ZCU would not result in an increase in train traffic, the development of future land uses near the train tracks, and could be exposed to train noise levels in excess of the City's current noise standards for land use compatibility (refer to Table 5). Land uses permitted along the rail corridor under the proposed 2045 General Plan are primarily industrial and employment-oriented uses, similar to existing development patterns. Existing residential areas located near the rail corridor would generally remain the same as today, and the proposed 2045 General Plan does not designate new residential land uses immediately adjacent to the tracks. Some development could continue to occur on underutilized parcels. As a result, exposure to railroad traffic noise levels would be considered a **potentially significant** impact.

Table 15. Predicted Railroad Traffic Noise Levels

Train Type	Number of Trains/Day	CNEL at 100 feet from Railroad Track Centerline	Distance to CNEL Contours (feet) from Railroad Track Centerline		
			70	65	60
Freight & Passenger	5	66	51	108	233

UPRR freight trains distributed equally over a 24-hour period. Does not include shielding provided by intervening terrain or structures. Does not include shielding from intervening structures or terrain. Projected railroad noise contours are depicted in Figure 4.

Proposed General Plan Policies that Provide Mitigation

The proposed 2045 GPU includes numerous goals and policies that would help to reduce potential transportation noise impacts to noise-sensitive land uses. Relevant policies include, but are not limited to, policies: SEP-5.2, SEP-5.3, SEP-5.4, SEP-5.6; as well as, MO-1.2, MO-1.3, MO-1.4, AND MO-1.6.

Implementation of the proposed 2045 GPU policies would reduce potential transportation noise impacts. Future development projects would be required to analyze project-related noise impacts and incorporate necessary noise-reduction measures. Noise-reduction measures typically implemented to reduce traffic noise include increased insulation, setbacks, and construction of sound barriers. Additional policies have been proposed to promote alternative means of transportation and to minimize noise impacts to residents associated with heavy truck traffic. Implementation of these policies and actions will help to reduce impacts associated with future development. In addition, the 2045 GPU includes noise standards for transportation noise sources (refer to Table 12). With implementation of the proposed 2045 GPU policies, this impact would be considered **less than significant**.

Table 16. 2045 GPU Buildout Roadway Traffic Noise Levels & Contour Distances

Road Segment	ADT Volumes	Speed	CNEL at 50ft. From Near travel-lane Centerline	Distance to CNEL Contour (feet)		
				70 dBA	65 dBA	60 dBA
US-101: Santa Barbara Rd. to Santa Rosa Rd.	63,000	65	79.3	341	731	1,573
US-101: Santa Rosa Rd. to Curbaril Ave.	64,000	65	79.4	345	739	1,589
US-101: Curbaril Ave. to SR-41	63,000	65	79.3	341	731	1,573
US-101: SR-41 to Traffic Way	73,000	65	80	376	806	1,735
US-101: Traffic Way to San Anselmo Rd.	72,000	65	79.9	373	799	1,719
US-101: San Anselmo Rd. to del Rio Rd.	68,000	65	79.6	359	769	1,655
US-101: Del Rio Rd. to San Ramon Rd.	70,000	65	79.8	366	784	1,687
US-101: San Ramon Rd. to Vineyard Rd.	71,000	65	79.8	369	791	1,703
SR-41: Atascadero Ave. to Curbaril Ave.	13,900	45	68.6	56	116	246
SR-41: Santa Rosa Rd. to Curbaril Ave.	13,400	45	68.5	55	113	241
SR-41: US 101 to Atascadero Ave.	17,500	35	67.2	WR	94	199
SR-41: Santa Ysabel Ave. to Mercedes Ave.	8,300	45	67.5	WR	81	175
SR-41: Rocky Canyon Rd. to Mercedes Ave.	7,700	55	69.1	WR	105	226
El Camino Real: San Ramon Rd. to Del Rio Rd.	13,900	45	67.3	WR	130	401
El Camino Real: Del Rio Rd. to Rosario Ave.	13,400	45	67.2	WR	126	387
El Camino Real: Rosario Ave. to Highway 41	17,500	25	62.2	WR	WR	126
El Camino Real: Highway 41 to San Diego Rd.	8,300	45	65.1	WR	81	241
El Camino Real: San Diego Rd. to Santa Barbara Rd.	7,700	45	64.8	WR	76	224

Traffic volumes were derived from the traffic analysis prepared for this project (CCTC 2025). Does not include shielding provided by intervening terrain or structures.
Predicted 2045 roadway traffic noise contours for US-101 and SR-41 are depicted in Figure 4.
WR = Contour is located within road right-of-way

Table 17. Traffic Noise Levels - Existing Compared to 2045 GPU

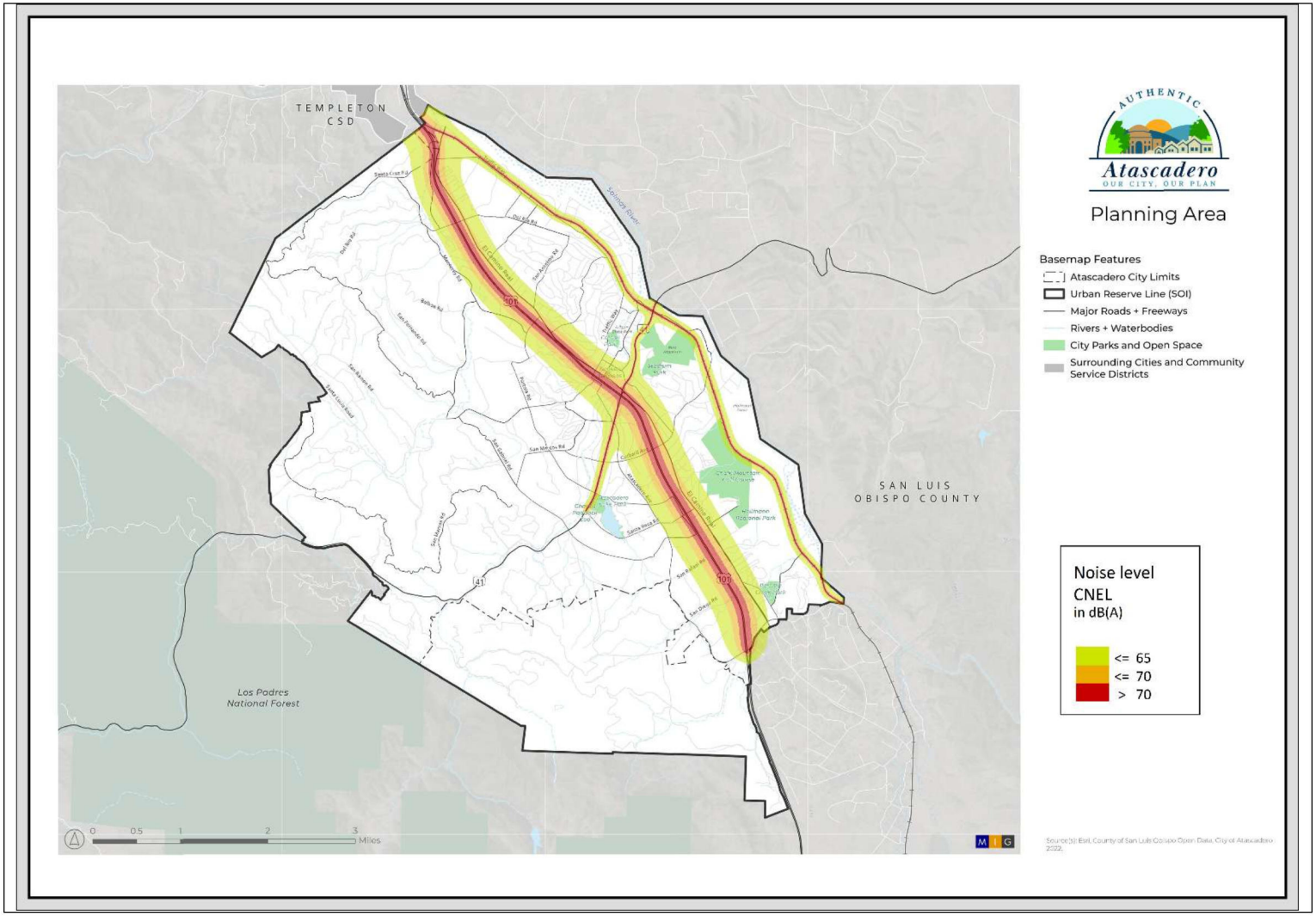
Roadway Segment	CNEL at 50 feet from Near-Travel-Lane Centerline			Potentially Significant?[1]
	Existing Conditions	2045 GPU Buildout	Increase	
US-101: Santa Barbara Rd. to Santa Rosa Rd.	78.7	79.3	0.6	No
US-101: Santa Rosa Rd. to Curbaril Ave.	78.7	79.4	0.7	No
US-101: Curbaril Ave. to SR-41	78.7	79.3	0.6	No
US-101: SR-41 to Traffic Way	77.5	80.0	2.5	**Yes**
US-101: Traffic Way to San Anselmo Rd.	77.5	79.9	2.4	**Yes**
US-101: San Anselmo Rd. to del Rio Rd.	77.5	79.6	2.1	**Yes**
US-101: Del Rio Rd. to San Ramon Rd.	77.6	79.8	2.2	**Yes**
US-101: San Ramon Rd. to Vineyard Rd.	77.6	79.8	2.2	**Yes**
SR-41: Atascadero Ave. to Curbaril Ave.	67.3	68.6	1.3	No
SR-41: Santa Rosa Rd. to Curbaril Ave.	67.6	68.5	0.9	No
SR-41: US 101 to Atascadero Ave.	66.1	67.2	1.1	No
SR-41: Santa Ysabel Ave. to Mercedes Ave.	66.3	67.5	1.2	No
SR-41: Rocky Canyon Rd. to Mercedes Ave.	67.7	69.1	1.4	No
El Camino Real: San Ramon Rd. to Del Rio Rd.	66.0	67.3	1.3	No
El Camino Real: Del Rio Rd. to Rosario Ave.	66.3	67.2	0.9	No
El Camino Real: Rosario Ave. to Highway 41	61.1	62.2	1.1	No
El Camino Real: Highway 41 to San Diego Rd.	63.9	65.1	1.2	No
El Camino Real: San Diego Rd. to Santa Barbara Rd.	63.4	64.8	1.4	No

1. Traffic noise levels were calculated based on traffic volumes derived from the traffic analysis prepared for this project, refer to Table 16 (CCTC 2025).

2. Significant increases are based on the following thresholds (Refer to Table 1):

- *5.0, or greater, where the existing noise level is less than 60 dBA*
- *3.0, or greater, where the existing noise level is 60-65 dBA*
- *1.5, or greater, where the existing noise level is greater than 65 dBA*

Figure 4. Future Noise Contours – Major Surface Transportation Noise Sources



Predicted noise contours do not include shielding from intervening structures or terrain.

Impact N-2: Would the General Plan result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

The effects of ground vibration can vary from no perceptible effects at the lowest levels, low rumbling sounds and detectable vibrations at moderate levels, and slight damage to nearby structures at the highest levels. At the highest levels of vibration, damage to structures is primarily architectural (e.g., loosening and cracking of plaster or stucco coatings) and rarely results in structural damage. The effects of ground vibration are influenced by the duration of the vibration and the distance from the vibration source.

Table 18. Summary of Groundborne Vibration Levels and Potential Effects

Vibration Level (in/sec ppv)	Human Reaction	Effect on Buildings
0.006-0.019	Threshold of perception; possibility of intrusion.	Vibrations unlikely to cause damage of any type.
0.08	Vibrations readily perceptible.	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected.
0.10	Level at which continuous vibrations begin to annoy people.	Virtually no risk of "architectural" damage to normal buildings.
0.20	Vibrations annoying to people in buildings (this agrees with the levels established for people standing on bridges and subjected to relative short periods of vibrations).	Threshold at which there is a risk of "architectural" damage to fragile buildings.
0.4-0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges.	Potential risk of "architectural" damage may occur at levels above 0.3 in/sec ppv for older residential structures and above 0.5 in/sec ppv for newer structures.

The vibration levels are based on peak particle velocity in the vertical direction for continuous vibration sources, which includes most construction activities.
Source: Caltrans 2020

There are no federal, state, or local regulatory standards for vibration. However, various criteria have been established to assist in the evaluation of vibration impacts. For instance, Caltrans has developed vibration criteria based on human perception and structural damage risks. For newer structures, Caltrans considers a peak-particle velocity (ppv) threshold of 0.5 inches per second (in/sec) to be the level at which architectural damage (i.e., minor cracking of plaster walls and ceilings) to normal structures may occur. Below 0.10 in/sec there is "virtually no risk of 'architectural' damage to normal buildings." Damage to historic or ancient buildings could occur at levels of 0.08 in/sec ppv. In terms of human annoyance, continuous vibrations in excess of 0.1 in/sec ppv are identified by Caltrans as the minimum level perceptible level for ground vibration. Short periods of ground vibration in excess of 0.2 in/sec ppv can be expected to result in increased levels of annoyance to people within buildings (Caltrans, 2020).

Groundborne vibration sources located within the City that could potentially affect future development would be primarily associated with construction activities. With the exception of pavement breaking and pile driving, construction activities and related equipment typically generate groundborne vibration levels of less than 0.2 in/sec, which is the architectural damage risk threshold recommended by Caltrans. Based on Caltrans measurement data, use of off-road tractors, dozers, earthmovers, and haul trucks generates groundborne vibration levels of less than 0.10 in/sec, or one half of the architectural damage risk level, at 10 feet. The highest vibration level associated with a pavement breaker was 2.88 in/sec at 10 feet. During pile driving, vibration levels near the source depend mainly on the soil's penetration resistance as well as

the type of pile driver used. Impact pile drivers tend to generate higher vibration levels than vibratory or drilled piles. Groundborne vibration levels of pile drivers can range from approximately 0.17 to 1.5 in/sec ppv. Caltrans indicates that the distance to the 0.2 in/sec ppv criterion for pile driving activities would occur at a distance of approximately 50 feet. However, as with construction-generated noise levels, pile driving can result in a high potential for human annoyance from vibrations, and pile-driving activities are typically considered as being potentially significant if these activities are performed within 200 feet of occupied structures (Caltrans, 2020). As a result, depending on the activities conducted and distance to nearby sensitive land uses, short-term exposure to vibration levels would be considered a **potentially significant impact**.

Proposed General Plan Policies that Provide Mitigation

Proposed 2045 GPU Policy SEP-5.1, Action A, would require the update of the City's Noise Ordinance to incorporate construction best management practices to minimize construction noise when construction activities would be located within 1,000 feet of noise-sensitive land uses. This policy would also help to reduce potential nuisance-related vibration impacts to nearby sensitive land uses.

In addition, standard construction best management practices, such as maintaining equipment in good working condition, locating stationary equipment away from sensitive receptors, and avoiding high-vibration construction methods where feasible, would help reduce groundborne vibration levels during construction. Compliance with the City's Noise Ordinance, which generally limits construction activities to daytime hours (7:00 a.m. to 9:00 p.m.; Atascadero Municipal Code Section 9-14.03(c)), would reduce the potential for construction-related groundborne vibration to affect nearby sensitive receptors during nighttime periods when occupants are more likely to be present and disturbance would be more noticeable.

Due to the short-term nature of construction vibrations, the intermittent frequency of construction vibrations, and the required compliance with the City's hourly restrictions related to construction activities, construction vibration level increases will not result in exposure of persons to or generation of excessive groundborne vibration that would result in a significant increase in annoyance. By restricting the hours of construction to avoid vibrations during times when it could potentially be more of a nuisance, the impact of new construction vibration is reduced to a **less-than-significant** level through the application of the 2045 GPU's mitigating policies.

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APPENDIX A

Noise Modeling

	Segment	% of LDA Day	% of MDT Day	% of HDT Day	% of LDA Evening	% of MDT Evening	% of HDT Evening	% of LDA Night	% of MDT Night	% of HDT Night	Total %	Lanes	Speed Limit	AHW
US-101	Santa Barbara Rd to Santa Rosa Rd	71.28	0.85	6.09	11.87	0.05	0.19	8.82	0.1	0.75	100	4	65	41
US-101	Santa Rosa Rd to Curbaril Ave	71.28	0.85	6.09	11.87	0.05	0.19	8.82	0.1	0.75	100	4	65	41
US-101	Curbaril Ave to SR-41	71.28	0.85	6.09	11.87	0.05	0.19	8.82	0.1	0.75	100	4	65	41
US-101	SR-41 to Traffic Way	74.63	0.63	2.58	12.42	0.04	0.08	9.23	0.08	0.31	100	4	65	41
US-101	Traffic Way to San Anselmo Rd	74.63	0.63	2.58	12.42	0.04	0.08	9.23	0.08	0.31	100	4	65	41
US-101	San Anselmo Rd to del Rio Rd	74.63	0.63	2.58	12.42	0.04	0.08	9.23	0.08	0.31	100	4	65	41
US-101	Del Rio Rd to San Ramon Rd	74.63	0.63	2.58	12.42	0.04	0.08	9.23	0.08	0.31	100	4	65	41
US-101	San Ramon Rd to Vineyard Rd	74.79	0.6	2.42	12.45	0.03	0.08	9.25	0.07	0.31	100	4	65	41
SR-41	Atascadero Ave to Curbaril Ave	73.87	2.26	1.75	12.3	0.13	0.05	9.14	0.28	0.22	100	2	45	18
SR-41	Santa Rosa Rd to Curbaril Ave	73.87	2.26	1.75	12.3	0.13	0.05	9.14	0.28	0.22	100	2	45	18
SR-41	US 101 to Atascadero Ave	73.87	2.26	1.75	12.3	0.13	0.05	9.14	0.28	0.22	100	2	35	18
SR-41	Santa Ysabel Ave to Mercedes Ave	73.87	2.26	1.75	12.3	0.13	0.05	9.14	0.28	0.22	100	2	45	18
SR-41	Rocky Canyon Rd to Mercedes Ave	73.87	2.26	1.75	12.3	0.13	0.05	9.14	0.28	0.22	100	2	55	18
SR-41	El Camino Real: San Ramon Rd to Del Rio Rd	75.51	1.56	0.64	12.57	0.09	0.02	9.34	0.19	0.08	100	4	45	30
SR-41	El Camino Real: Del Rio Rd to Rosario Ave	75.51	1.56	0.64	12.57	0.09	0.02	9.34	0.19	0.08	100	4	45	30
SR-41	El Camino Real: Rosario Ave to Highway 41	75.51	1.56	0.64	12.57	0.09	0.02	9.34	0.19	0.08	100	4	25	30
SR-41	El Camino Real: Highway 41 to San Diego Rd	75.51	1.56	0.64	12.57	0.09	0.02	9.34	0.19	0.08	100	4	45	30
SR-41	El Camino Real: San Diego Rd to Santa Barba	75.51	1.56	0.64	12.57	0.09	0.02	9.34	0.19	0.08	100	4	45	30

Road Segment	ADT Volumes	Speed	CNEL at 50ft. From Near travel-lane Centerline	CNEL Contour 70	CNEL Contour 65	CNEL Contour 60
US-101: Santa Barbara Rd to Santa Rosa Rd	55000	65	78.7	313	670	1441
US-101: Santa Rosa Rd to Curbaril Ave	55000	65	78.7	313	670	1441
US-101: Curbaril Ave to SR-41	55000	65	78.7	313	670	1441
US-101: SR-41 to Traffic Way	63000	65	77.5	261	557	1196
US-101: Traffic Way to San Anselmo Rd	63000	65	77.5	261	557	1196
US-101: San Anselmo Rd to del Rio Rd	63000	65	77.5	261	557	1196
US-101: Del Rio Rd to San Ramon Rd	65000	65	77.6	266	568	1221
US-101: San Ramon Rd to Vineyard Rd	65000	65	77.6	262	558	1200
SR-41: Atascadero Ave to Curbaril Ave	10200	45	67.3	NA	95	201
SR-41: Santa Rosa Rd to Curbaril Ave	11100	45	67.6	NA	100	212
SR-41: US 101 to Atascadero Ave	13700	35	66.1	NA	80	169
SR-41: Santa Ysabel Ave to Mercedes Ave	6300	45	66.3	NA	68	145
SR-41: Rocky Canyon Rd to Mercedes Ave	5600	55	67.7	NA	85	182
El Camino Real: San Ramon Rd to Del Rio Rd	10200	45	66.0	NA	98	295
El Camino Real: Del Rio Rd to Rosario Ave	11100	45	66.3	NA	105	321
El Camino Real: Rosario Ave to Highway 41	13700	25	61.1	NA	NA	100
El Camino Real: Highway 41 to San Diego Rd	6300	45	63.9	NA	65	184
El Camino Real: San Diego Rd to Santa Barbara Rd	5600	45	63.4	NA	59	164

Road Segment	ADT Volumes	Speed	CNEL at 50ft. From Near travel-lane Centerline	Distance to CNEL Contour (feet)		
				CNEL Contour 70	CNEL Contour 65	CNEL Contour 60
US-101: Santa Barbara Rd to Santa Rosa Rd	63000	65	79.3	341	731	1573
US-101: Santa Rosa Rd to Curbaril Ave	64000	65	79.4	345	739	1589
US-101: Curbaril Ave to SR-41	63000	65	79.3	341	731	1573
US-101: SR-41 to Traffic Way	73000	65	80	376	806	1735
US-101: Traffic Way to San Anselmo Rd	72000	65	79.9	373	799	1719
US-101: San Anselmo Rd to del Rio Rd	68000	65	79.6	359	769	1655
US-101: Del Rio Rd to San Ramon Rd	70000	65	79.8	366	784	1687
US-101: San Ramon Rd to Vineyard Rd	71000	65	79.8	369	791	1703
SR-41: Atascadero Ave to Curbaril Ave	13900	45	68.6	56	116	246
SR-41: Santa Rosa Rd to Curbaril Ave	13400	45	68.5	55	113	241
SR-41: US 101 to Atascadero Ave	17500	35	67.2	NA	94	199
SR-41: Santa Ysabel Ave to Mercedes Ave	8300	45	67.5	NA	81	175
SR-41: Rocky Canyon Rd to Mercedes Ave	7700	55	69.1	NA	105	226
El Camino Real: San Ramon Rd to Del Rio Rd	13900	45	67.3	NA	130	401
El Camino Real: Del Rio Rd to Rosario Ave	13400	45	67.2	NA	126	387
El Camino Real: Rosario Ave to Highway 41	17500	25	62.2	NA	NA	126
El Camino Real: Highway 41 to San Diego Rd	8300	45	65.1	NA	81	241
El Camino Real: San Diego Rd to Santa Barbara Rd	7700	45	64.8	NA	76	224

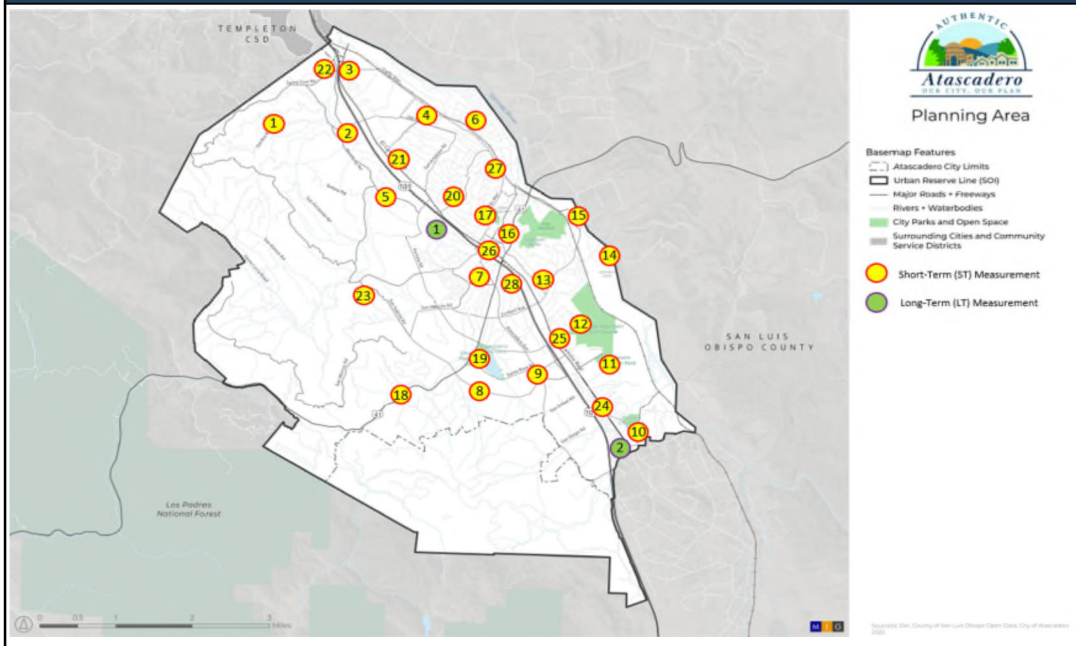
	CNEL at 50 feet from Near-Travel-Lane Centerline		
Roadway Segment	**Existing Conditions**	**2045 GPU Buildout**	**Increase**
US-101: Santa Barbara Rd to Santa Rosa Rd	78.7	79.3	0.6
US-101: Santa Rosa Rd to Curbaril Ave	78.7	79.4	0.7
US-101: Curbaril Ave to SR-41	78.7	79.3	0.6
US-101: SR-41 to Traffic Way	77.5	80.0	2.5
US-101: Traffic Way to San Anselmo Rd	77.5	79.9	2.4
US-101: San Anselmo Rd to del Rio Rd	77.5	79.6	2.1
US-101: Del Rio Rd to San Ramon Rd	77.6	79.8	2.2
US-101: San Ramon Rd to Vineyard Rd	77.6	79.8	2.3
SR-41: Atascadero Ave to Curbaril Ave	67.3	68.6	1.3
SR-41: Santa Rosa Rd to Curbaril Ave	67.6	68.5	0.9
SR-41: US 101 to Atascadero Ave	66.1	67.2	1.1
SR-41: Santa Ysabel Ave to Mercedes Ave	66.3	67.5	1.2
SR-41: Rocky Canyon Rd to Mercedes Ave	67.7	69.1	1.4
El Camino Real: San Ramon Rd to Del Rio Rd	66.0	67.3	1.3
El Camino Real: Del Rio Rd to Rosario Ave	66.3	67.2	0.9
El Camino Real: Rosario Ave to Highway 41	61.1	62.2	1.1
El Camino Real: Highway 41 to San Diego Rd	63.9	65.1	1.2
El Camino Real: San Diego Rd to Santa Barbara Rd	63.4	64.8	1.4

NOISE MEASUREMENT SURVEY FORM

SHEET	*1*	*OF*	*2*

DATE:	October 10-13, 2022
PROJECT:	2045 Atascadero GPU
LOCATION:	Atascadero, CA
MONITORING STAFF:	Jon Pambakian/Kurt Legleiter

LOCATION MAP:



NOISE MEASUREMENT CONDITIONS & EQUIPMENT

MET CONDITIONS & MONITORING EQUIPMENT:	10/10: TEMP: 72-86 F. | HUMIDITY: 31-70 % | WIND SPEED: 2-5 MPH | SKY: CLEAR | GROUND: DRY					
	10/11: TEMP: 59-85 F. | HUMIDITY: 35-76 % | WIND SPEED: 1-3 MPH | SKY: CLEAR | GROUND: DRY					
	10/12: TEMP: 59-86 F. | HUMIDITY: 32-78 % | WIND SPEED: 2-5 MPH | SKY: CLEAR | GROUND: DRY					
	10/13: TEMP: 52-81 F. | HUMIDITY: 38-93 % | WIND SPEED: 3-4 MPH | SKY: CLEAR | GROUND: DRY					
	CLOUD COVER BY CLASS (OC=OVERCAST):	3	(1. HEAVY OC, 2. LIGHT OC, 3. SUNNY, 4. CLEAR NIGHT, 5. OC NIGHT)			
	MET. METER:	KESTREL 5500				
NOISE MONITORING EQUIPMENT:	LARSON DAVIS SLM MODEL:	SoftdB Picollo Type II/LD LxT				
	CALIBRATOR:	CAL200/250				
NOISE MONITORING SETUP:	WITHIN 10 FT OF REFLECTIVE SURFACE?:	NO	MICROPHONE HEIGHT AGL (FT):	5		
	CALIBRATED PRIOR TO AND UPON COMPLETION OF MEASUREMENTS:	YES	METER SETTINGS:	A-WHT	SLOW	

NOISE MEASUREMENT SURVEY FORM

SHEET	2	OF	2

DATE:	October 10-13, 2022
PROJECT:	2045 Atascadero GPU
LOCATION:	Atascadero, CA
MONITORING STAFF:	Jon Pambakian/Kurt Legleiter

MEASUREMENT LOCATION		DURATION (Minutes)	PRIMARY NOISE SOURCES NOTED	MEASURED NOISE LEVELS LEQ							
10-Oct-22											
ST1	7800 Del Rio Road	10:41 – 10:51	Birds, Electrical Equipment	44.3							
ST2	Apple Valley Park	11:03 – 11:13	Birds, Traffic, People Walking on Path	45.3							
ST3	5400 Santa Cruz Road	11:50 – 12:00	Distant Traffic, Birds	57.7							
ST4	San Benito Elementary School	12:10 – 12:20	Birds, Truck Passby	50.3							
ST5	Monterey Road Elementary School	12:32 – 12:42	Traffic, Birds	63.2							
ST6	The Lakes Lake	12:57 – 13:07	Birds	41.5							
ST7	High School Hill Road	15:08 – 15:18	Traffic, Dogs	52.6							
11-Oct-22											
ST8	Hope Lutheran Church	10:02 – 10:12	Traffic, Propeller Plane Overflight, Dogs, Birds	50.7							
ST9	9600 Atascadero Avenue	10:26 – 10:36	Traffic, Birds	60.5							
ST10	Paloma Creek Park	10:47 – 10:57	Distant Traffic, Children, Birds	44.4							
ST11	Heilmann Regional Park	11:10 – 11:20	Traffic, Golf Cart, Birds, Squirrels	40.4							
ST12	8500 El Corte Road	11:31 – 11:41	Traffic	52.5							
ST13	Pueblo Avenue/Sombrilla Avenue	11:53 – 12:03	Traffic, Conversation, Propeller Plane Overflight, Dogs	53.5							
ST14	7700 Aragon Road	12:16 – 12:26	Dogs, Birds	49.6							
ST15	7100 Sycamore Road	12:40 – 12:50	Traffic, Birds, Children, Sheep/Goat	64.7							
ST16	5454 CA-41 Parking	13:03 – 13:13	Traffic	64.8							
ST17	Traffic Way Park	13:24 – 13:34	Traffic	57.8							
12-Oct-22											
ST18	12500 CA-41	10:51 – 11:01	Traffic	67.9							
ST19	Atascadero Lake Park	11:25 – 11:35	Traffic	63.9							
ST20	Nogales Avenue/Lobos Avenue	11:56 – 12:06	Traffic, Birds, Dog, Distant Power Tool	53.4							
ST21	3300 El Camino Real	12:19 – 12:29	Traffic	68.2							
ST22	1000 San Ramon Road	13:24 – 13:34	Traffic	71.2							
ST23	6000 San Gabriel Road	14:06 – 14:16	Traffic, Propeller Plane Overflight	56.8							
13-Oct-22											
ST24	10700 El Camino Real	10:40 – 10:50	Traffic	66.9							
ST25	8965 El Camino Real	11:00 – 11:10	Traffic	71.7							
ST26	Sunken Gardens	11:22 – 11:32	Traffic, Water Fountain	58.3							
ST27	4890 Alamo Avenue	11:45 – 11:55	Dogs, Vehicle Passby	56							
ST28	6050 Marchant Avenue	12:56 – 13:06	Traffic	73.1							

APPENDIX H

2045 General Plan Existing Conditions Report | Chapter 8: Noise

2045 General Plan Existing Conditions Report

Chapter 8: Noise

Noise Findings

Primary Noise Sources

1. Roadways and freeways are the primary noise sources in the City of Atascadero. Primary transportation noise sources include vehicular traffic along US-101 and SR-41.
2. Freight and Amtrak train traffic along the Union Pacific Railroad corridor result in localized and intermittent noise events.
3. Non-transportation-related noise sources within the City of Atascadero are predominantly associated with industrial and commercial operations and building mechanical equipment. Other noise sources can result in intermittent increases in ambient noise levels, such as short-term construction activities, as well as school and public events.

Opportunities

1. The City's existing General Plan Noise Element includes noise policies and standards to reduce public exposure to transportation and non-transportation (stationary) noise sources. The continued application of these standards, could hinder development of some future land uses, particularly where higher-density residential development is located near major transportation or non-transportation noise sources, such as mixed-use development projects.

8.1 Introduction

This report examines existing noise conditions in the City of Atascadero. The purpose of this report is to provide a context for the General Plan Noise Element by identifying current noise conditions. The information presented in this report will be used by the City to develop noise element policies and objectives and to define programs that will implement those polices.

The intent of this report is to identify and evaluate existing noise problems in the community, and to provide guidance to avoid noise and land use incompatibility problems in the future. The report will address existing noise sources in the community and identifies potential noise impacts. This noise information will serve as the basis for developing guidelines for identifying compatible land uses, identifying the proper distribution of land uses, and establishing proper development standards. A discussion of acoustic fundamentals and terminology is also included.

This chapter is organized into the following sections:

Section 8.1: Introduction
Section 8.2: Regulatory Setting
Section 8.3: Acoustical Fundamentals
Section 8.4: Existing Noise Environment
Section 8.5: Sensitive Land Uses
Section 8.6: Sources
Section 8.7: Acronyms and Key Terms

8.2 Regulatory Setting

Federal, state, and local governments have established noise standards and guidelines to protect citizens from potential hearing damage and various other adverse physiological and social effects associated with noise. Existing regulations most applicable to the City are summarized, as follows:

Federal

U.S. Environmental Protection Agency

In 1974, the U.S. Environmental Protection Agency (EPA) Office of Noise Abatement and Control published a report entitled *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*. Although this document does not constitute EPA regulations or standards, it is useful in identifying noise levels at which increased levels of annoyance would be anticipated. Based on an annual-average day-night noise level (expressed as L_{dn} or DNL), the document states that "undue interference with activity and annoyance" will not occur if outdoor noise levels in residential areas are below 55 dBA L_{dn} and indoor levels are below 45 dBA L_{dn} (EPA 1974).

Department of Housing and Urban Development

The Federal Department of Housing and Urban Development (HUD) guidelines for the acceptability of residential land uses are set forth in the Code of Federal Regulations, Title 24, Part 51, "Environmental Criteria and Standards." These guidelines identify an average-daily noise exposure of 65 dBA L_{dn}, or less, as acceptable for residential development. Exterior noise levels of 65 to 75 dBA L_{dn} are considered normally acceptable, provided appropriate sound attenuation is provided to reduce interior noise levels to within acceptable levels. Exterior noise levels above 75 dBA L_{dn} are considered unacceptable. The goal of the interior noise levels for residential, hotel, and hospital/nursing home uses is 45 dBA L_{dn}. These guidelines apply only to new construction supported by HUD grants and are not binding upon local communities (HUD 2021).

Train Horn Rule

Under the federal train horn rule (49 CFR Part 222), locomotive engineers must begin to sound train horns at least 15 seconds, and no more than 20 seconds, in advance of all public grade crossings. In general, depending on train speed, train horns are often sounded within one-quarter mile of a grade crossing. Local communities may reduce the effects of train horns by establishing "quiet zones", which typically incorporate measures to reduce public risk caused by the absence of horn sounding (FRA 2021). No railroad quiet zones were identified in the City.

State

California Building Code

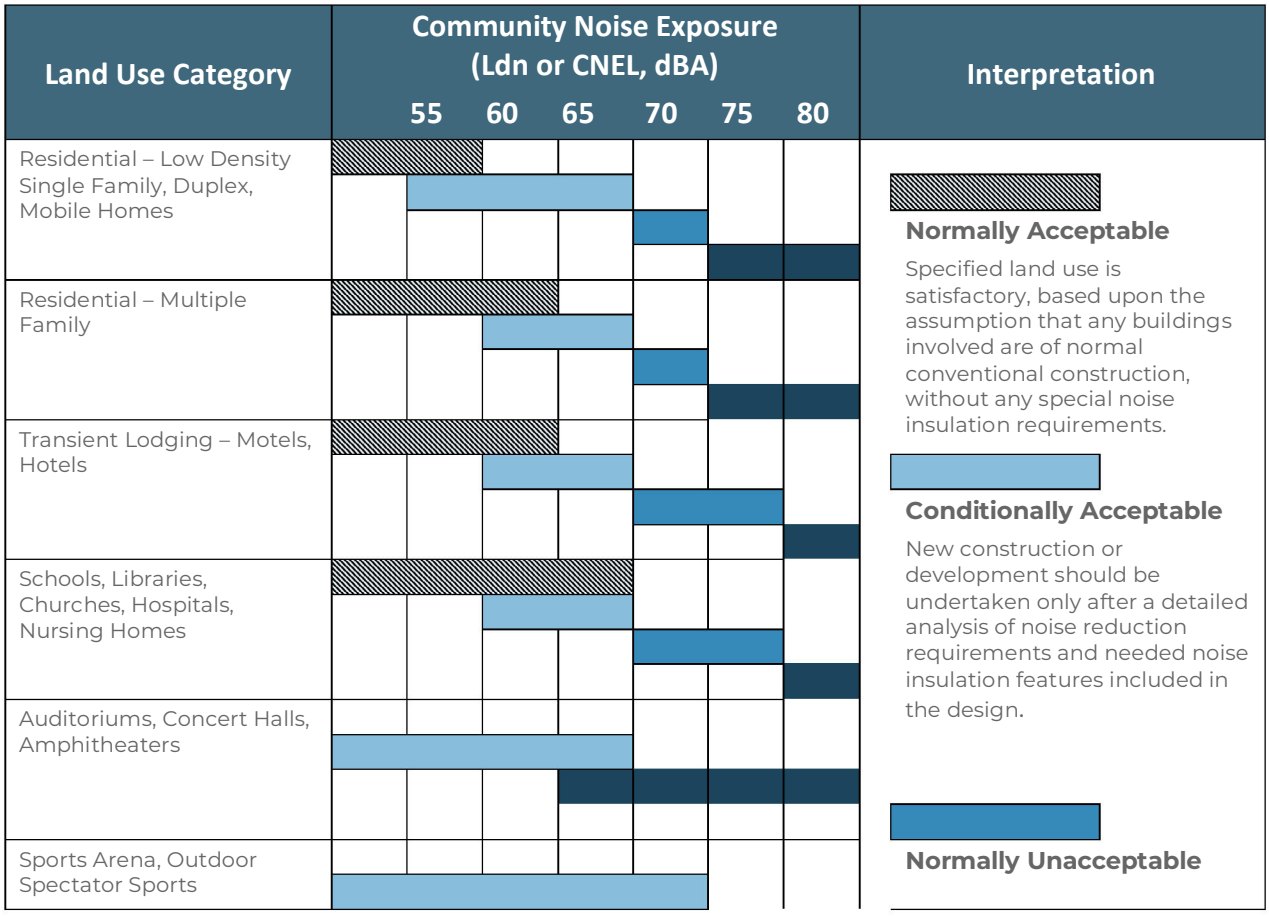
Title 24 of the California Code of Regulations contains standards for allowable interior noise levels associated with exterior noise sources (California Building Code, 1998 edition, Volume 1, Appendix Chapter 12, Section 1208A). The standards apply to new hotels, motels, dormitories, apartment houses, and dwellings other than detached single-family residences. The standards state that the interior noise level attributable to exterior sources shall not exceed

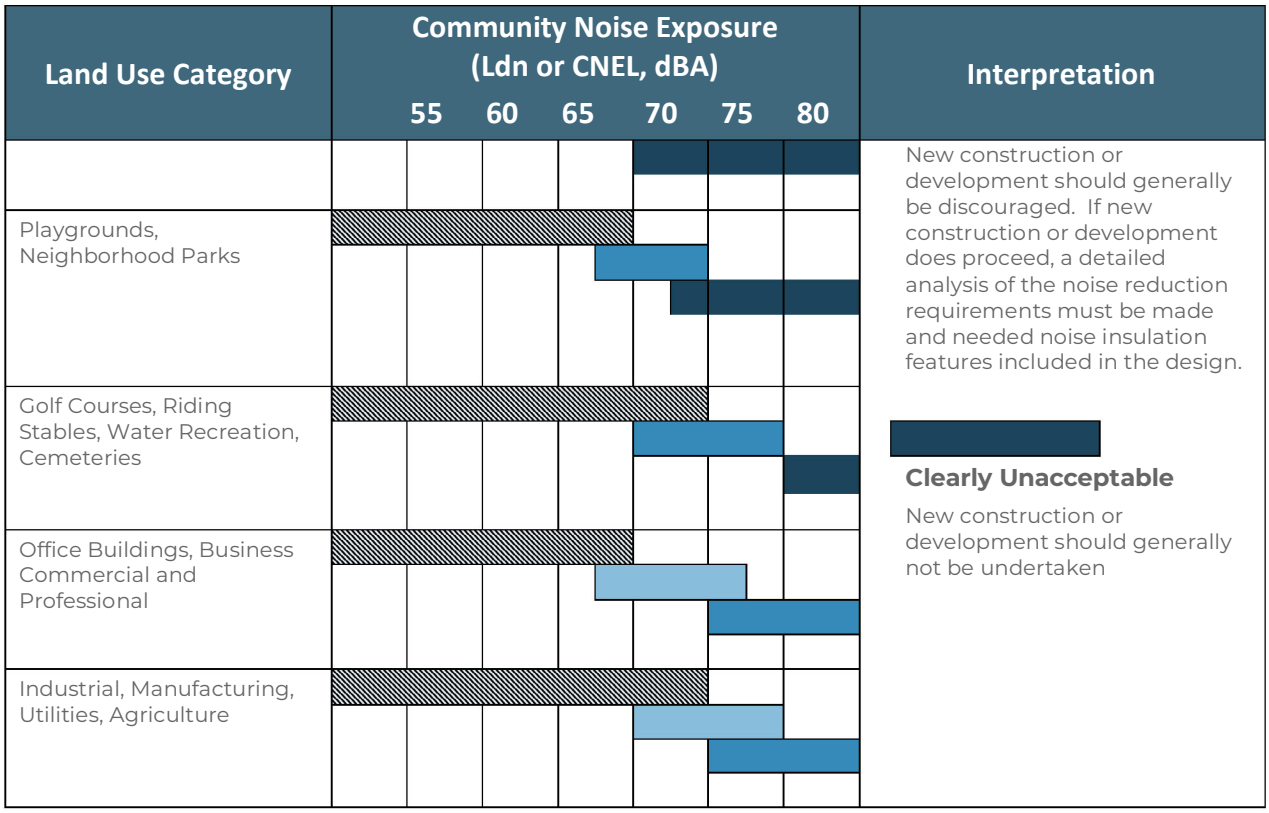
45 dBA CNEL in any habitable room. Proposed multi-family residential structures to be located where the CNEL exceeds 60 dBA shall require an acoustical analysis showing that the proposed building design would achieve the prescribed allowable interior noise standard.

State of California General Plan Guidelines

The *State of California General Plan Guidelines*, published by the Governor's Office of Planning and Research (OPR), provides guidance for the acceptability of new land uses within specific noise environments. The goal of these recommended noise standards is, in part, to allow for a "normally acceptable" interior noise level of 45 dBA CNEL. For instance, assuming an average exterior-to-interior noise reduction of 15 dBA (with windows partially open), an exterior noise level of 60 dBA CNEL for residential land uses, or less, would be sufficient to achieve an interior noise level of 45 dBA CNEL. Higher exterior noise levels may be allowed provided that noise-reduction measures are incorporated to achieve acceptable interior noise levels. Within "conditionally acceptable" exterior noise environments, conventional construction with incorporation of fresh air circulation systems sufficient to allow windows to remain closed would normally suffice. Compliance with current building code requirements and with windows closed, exterior-to-interior noise reductions typically average approximately 25 dBA, or more. The State's guidelines can be modified to reflect communities' sensitivities to noise. The State recommended noise criteria for land use compatibility are summarized in Table 8-1 (State of California 2017).

TABLE 8-1. STATE OF CALIFORNIA LAND USE COMPATIBILITY NOISE CRITERIA





Source(s): California OPR 2017

Local

City of Atascadero General Plan 2025

A general plan is a high-level policy document that is often described as the blueprint for development. A general plan establishes the "ground rules" for conserving resources, designing new projects, expanding public services, and improving community amenities. It articulates the community's vision and guides growth, change, and development over a 20-25-year period. Adopted in June 2002, the City of Atascadero General Plan 2025 (General Plan 2025) sets the course of all planning efforts both City-initiated and developer-proposed, and includes four chapters:

- Land Use, Open Space, and Conservation Element
- Circulation Element
- Safety and Noise Element
- Housing Element

The following section lists the Noise Element goals, as they relate to this chapter of the 2045 General Plan Existing Conditions Report.

Noise Element Goals

The Noise Element provides a policy framework for addressing potential noise impacts in the planning process. It identifies exterior average-daily noise standards for the primary purpose of ensuring the compatibility of proposed land uses within exterior noise environments and

ensure that noise levels at adjacent land uses do not exceed acceptable levels. These standards are also designed to protect existing land uses, including transportation and industry, from encroaching on urban uses. These noise standards are largely consistent with those identified in the State of California's General Plan Guidelines, as discussed above, and summarized in Table 8-2 and Table 8-3 (City of Atascadero 2002). The goals of the 2002 Noise Element included:

- **SFN 6:** Protect the citizens of Atascadero from the harmful and annoying effects of exposure to excessive noise.
- **SFN 7:** Protect the economic base of Atascadero by preventing incompatible land uses from encroaching upon existing or planned noise-producing uses.
- **SFN 8:** Preserve the tranquility of residential areas by preventing the encroachment of noise-producing uses.
- **SFN 9:** Educate the residents of Atascadero concerning the effects of exposure to excessive noise and the methods available for minimizing such exposure.
- **SFN 10:** Avoid or reduce noise impacts through site planning and project design, giving second preference to the use of noise barriers and/or structural modifications to buildings containing noise-sensitive land uses.

Noise Element Policies

The following policies have been adopted by the City to accomplish the goals presented in the Noise Element:

- **Policy 1.** The noise standards in this chapter represent maximum acceptable noise levels. New development should minimize noise exposure and noise generation. The City shall maintain a Noise Ordinance that implements the requirements of the Noise Element.

Transportation Noise Sources:

- **Policy 2.** New development of noise-sensitive land uses shall not be permitted in areas exposed to existing or projected future levels of noise from transportation noise sources which exceed 60 dB or CNEL (70 L_d/CNEL for playgrounds and neighborhood parks) unless the project design includes effective mitigation measures to reduce noise in outdoor activity areas and interior spaces to or below the levels specified for the given land use in Table 8-2.
- **Policy 3.** Noise created by new transportation noise sources, including roadway improvement projects, shall be mitigated so as not to exceed the levels specified in Table 8-2 within the outdoor activity areas and interior spaces of existing noise sensitive land uses.

Stationary Noise Sources:

- **Policy 4.** New development of noise-sensitive land uses shall not be permitted where the noise level due to existing stationary noise sources will exceed the noise level standards of Table 8-3 unless effective noise mitigation measures have been incorporated into the design of the development to reduce noise exposure to or below the levels specified in Table 8-3.
- **Policy 5.** Noise created by new proposed stationary noise sources or existing stationary noise sources which undergo modifications that may increase noise levels shall be mitigated so as not to exceed the noise level standards of Table 8-3 on lands designated for noise-sensitive uses. This policy does not apply to noise levels associated with agricultural operations.

Existing and Cumulative Noise Impacts:

- **Policy 6.** The City shall consider implementing mitigation measures where existing noise levels produce significant noise impacts to noise sensitive land uses or where new development may result in cumulative increases of noise upon noise-sensitive land uses.

Table 8-2: Maximum Allowable Noise Exposure — Transportation Noise Sources

Land Use	Outdoor Activity Areas[1]	Interior Spaces	
	(Ldn/CNEL dB)	(Ldn/CNEL dB)	(Leq, dB)2
Residential	60[3]	45	--
Transient Lodging	60[3]	45	--
Hospitals, Nursing Homes	60[3]	45	--
Theaters, Auditoriums, Music Halls	--	--	35
Churches, Meeting Halls, Office Buildings	60[3]	--	45
Schools, Libraries, Museums	--	--	45
Playgrounds, Neighborhood Parks	70	--	--

1. *Where the location of outdoor activity areas is unknown, the exterior noise level standards shall be applied to the property line of the receiving land use.*
2. *As determined for a typical worst-case hour during periods of use.*
3. *Where it is not possible to reduce noise in outdoor activity areas to 60 dB L_{dn}/CNEL or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 L_{dn}/CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.*

Source(s): City of Atascadero 2002

Table 8-3: Allowable Noise Exposure — Stationary Noise Sources[1]

	Daytime	Nighttime
	(7:00 a.m. to 9:00 p.m.)	(9:00 p.m. to 7:00 a.m.)
Hourly Equivalent (L_{eq} dB)[2]	50	45
Maximum Level (dB)[2]	70	65
Maximum Impulse Level (dB)[3]	65	60

1. *As determined at the property line of the receiving land use. When determining the effectiveness of noise mitigation measures, the standards may be applied on the receptor side of the noise barriers or other property line noise mitigation measures.*
2. *Sound level measurements shall be made with slow meter response.*
3. *Sound level measurements shall be made with fast meter response.*

Source(s): City of Atascadero 2002

The City's Municipal Code (Title 9, Planning and Zoning, Chapter 14, Noise) includes various provisions intended to protect community residents from prolonged unnecessary, excessive, and annoying sound levels that are detrimental to the public health, welfare, and safety, or are contrary to the public interest. Examples of noise sources subject to the City's municipal Code include, but are not limited to, industrial and commercial machinery and equipment, pumps, fans, compressors, generators, air conditioners, and refrigeration equipment (City of Atascadero 2022).

Noise sources associated with construction-related activities are typically exempt from the City's ordinance provided that the activities do not take place before the hours of seven a.m. or after nine p.m. or by special permit from the Community Development Director. Various other activities are also exempt, including, but not limited to, school entertainment and athletic events, mobile sources associated with agricultural activities, and emergency response activities (City of Atascadero 2022).

In addition, the City's Noise Ordinance sets exterior and interior (Title 9, Sections 9-14.05 and 9-14.06, respectively) noise level standards. The City's exterior and interior noise level standards are summarized in Table 8-4 and Table 8-5, respectively. The exterior noise level standards are applied at the property line of the receiving land use. Where practical, the microphone shall be positioned three to five feet above the ground and away from reflective surfaces. The interior standards applied within the affected dwelling unit, when both the source and receiver are residential land uses. The reported interior noise level shall be determined by taking the arithmetic average of the readings taken at the various microphone locations (City of Atascadero 2022).

Table 8-4: City of Atascadero Municipal Code Exterior Noise Level Standards[1]

	Daytime	Nighttime
	(7:00 a.m. to 9:00 p.m.)	(9:00 p.m. to 7:00 a.m.)
Hourly Equivalent (L_{eq} dB)[2, 3]	50	45
Maximum Level (dB)[2, 3]	70	65

1. *It is unlawful for any person at any location within the incorporated area of the City to create any noise, or to allow the creation of any noise, on property owned, leased, occupied, or otherwise controlled by such person which causes the exterior noise level when measured at any affected single or multiple-family residence, school, hospital, church or public library situated in the City to exceed the noise level standards as set forth in the table.*
2. *In the event the measured ambient noise level exceeds the applicable noise level standard in any category above, the applicable standard shall be adjusted so as to equal the ambient noise level.*
3. *Each of the noise level standards specified above shall be reduced by five (5) dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises.*

Source(s): City of Atascadero 2022

Table 8-5: City of Atascadero Municipal Code Interior Noise Level Standards[1]

	Daytime	Nighttime
	(7:00 a.m. to 9:00 p.m.)	(9:00 p.m. to 7:00 a.m.)
Hourly Equivalent (L_{eq} dB)[2, 3]	40	35
Maximum Level (dB)[2, 3]	60	55

1. *It is unlawful for any person at any location within the incorporated area of the City to create any noise, or to allow the creation of any noise, on property owned, leased, occupied, or otherwise controlled by such person which causes the exterior noise level*

	Daytime	Nighttime
	(7:00 a.m. to 9:00 p.m.)	(9:00 p.m. to 7:00 a.m.)
	when measured at any affected single or multiple-family residence, school, hospital, church or public library situated in the City to exceed the noise level standards as set forth in the table.	
	2. *In the event the measured ambient noise level exceeds the applicable noise level standard in any category above, the applicable standard shall be adjusted so as to equal the ambient noise level.*	
	3. *Each of the noise level standards specified above shall be reduced by five (5) dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises.*	

Source(s): City of Atascadero 2022

8.3 Acoustic Fundamentals

Introduction

Noise is generally defined as sound that is loud, disagreeable, or unexpected. Sound is mechanical energy transmitted in the form of a wave because of a disturbance or vibration. Sound levels are described in terms of both amplitude and frequency.

Amplitude

Amplitude is defined as the difference between ambient air pressure and the peak pressure of the sound wave. Amplitude is measured in decibels (dB) on a logarithmic scale. For example, a 65 dB source of sound, such as a truck, when joined by another 65 dB source results in a sound amplitude of 68 dB, not 130 dB (i.e., doubling the source strength increases the sound pressure by 3 dB). Amplitude is interpreted by the ear as corresponding to different degrees of loudness. Laboratory measurements correlate a 10 dB increase in amplitude with a perceived doubling of loudness and establish a 3 dB change in amplitude as the minimum audible difference perceptible to the average person.

Frequency

The frequency of a sound is defined as the number of fluctuations of the pressure wave per second. The unit of frequency is the Hertz (Hz). One Hz equals one cycle per second. The human ear is not equally sensitive to sound of different frequencies. For instance, the human ear is more sensitive to sound in the higher portion of this range than in the lower and sound waves below 16 Hz or above 20,000 Hz cannot be heard at all. To approximate the sensitivity of the human ear to changes in frequency, environmental sound is usually measured in what is referred to as “A-weighted decibels” (dBA). On this scale, the normal range of human hearing extends from about 10 dBA to about 140 dBA. Common community noise sources and associated noise levels, in dBA, are depicted in Figure 8-1.

Addition of Decibels

Because decibels are logarithmic units, sound levels cannot be added or subtracted through ordinary arithmetic. Under the decibel scale, a doubling of sound energy corresponds to a 3-dB increase. In other words, when two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be 3 dB higher than one source under the same conditions. For example, if one automobile produces a sound level of 70 dB when it passes an observer, two cars passing simultaneously would not produce 140

dB; rather, they would combine to produce 73 dB. Under the decibel scale, three sources of equal loudness together would produce an increase of 5 dB.

Sound Propagation & Attenuation

Geometric Spreading

Noise sources are generally characterized as either a localized source (i.e., point source) or a line source. Examples of point sources include construction equipment, vehicle horns, alarms, and amplified sound systems. Examples of a line sources include trains and on-road vehicular traffic. Sound from a point source propagates uniformly outward in a spherical pattern.

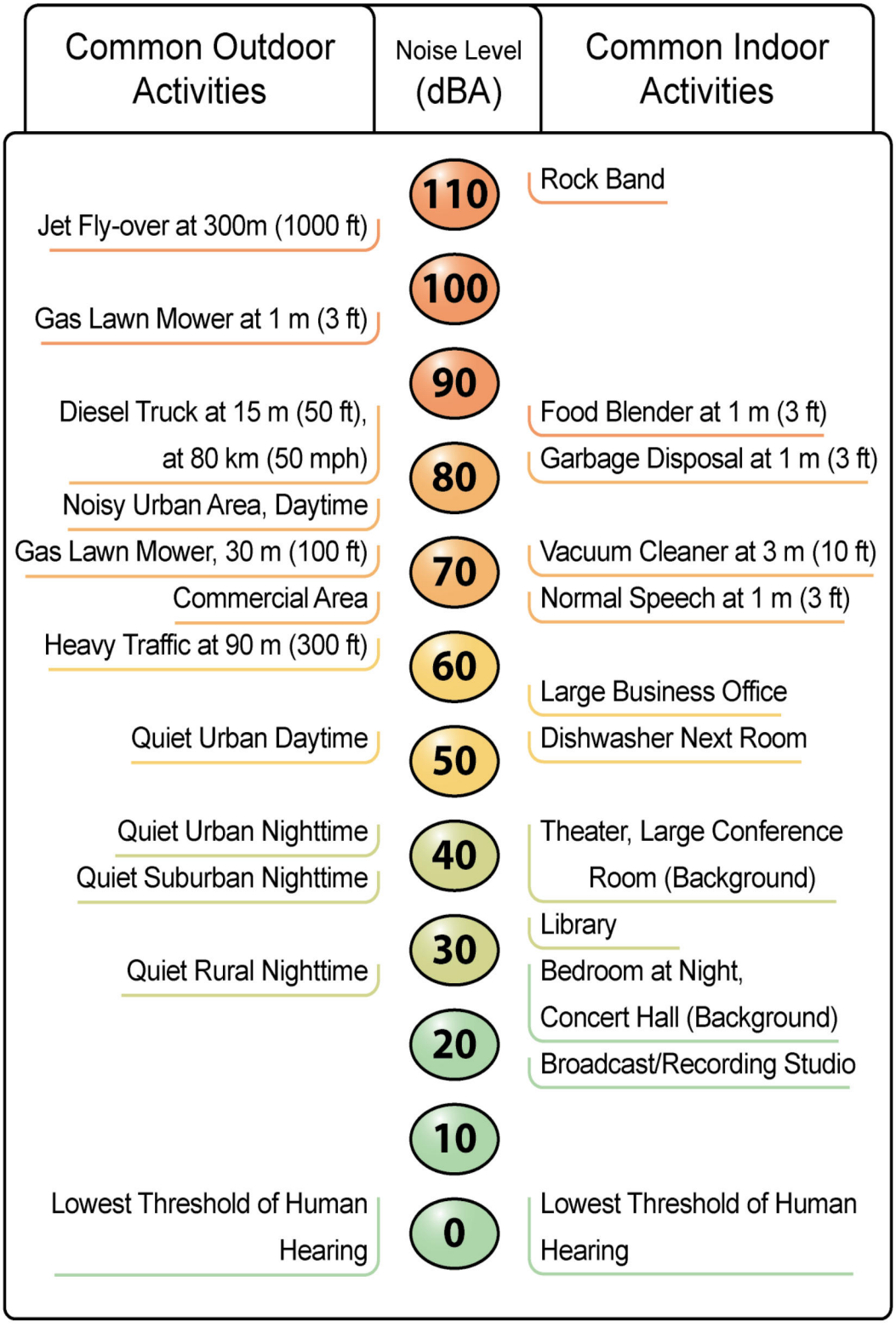
For a point source, sound levels generally decrease (attenuate) at a rate of approximately 6 decibels for each doubling of distance from the source, depending on ground surface characteristics. For acoustically hard sites (i.e., sites with a reflective surface between the source and the receiver), no excess ground attenuation is assumed. Parking lots and bodies of water are examples of hard surfaces which generally attenuate at this rate. For acoustically absorptive or soft sites (i.e., those sites with an absorptive ground surface between the source and the receiver, such as soft dirt, grass, or scattered bushes and trees), an excess ground-attenuation value of 1.5 decibels per doubling of distance is normally assumed. When soft surfaces are present, the excess ground attenuation for soft surfaces generally results in an overall attenuation rate of approximately 7.5 decibels per doubling of distance from the point source.

On-road vehicle traffic consists of several localized noise sources on a defined path, and hence can be treated as a line source, which approximates the effect of several point sources. Noise from a line source propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels for line sources attenuate at a rate of approximately 3 decibels for each doubling of distance for hard sites and approximately 4.5 decibels per doubling of distance for soft sites.

Atmospheric Effects

Receptors located downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lowered noise levels. Sound levels can be increased at large distances (e.g., more than 500 feet) from the highway due to atmospheric temperature inversion (i.e., increasing temperature with elevation). Other factors such as air temperature, humidity, and turbulence can also have significant effects.

Figure 8-1: Common Noise Levels



Source(s): Caltrans 2021

Shielding by Natural or Human-Made Features

A large object or barrier in the path between a noise source and a receiver can substantially attenuate noise levels at the receiver. The amount of attenuation provided by shielding depends on the size of the object and the frequency content of the noise source. Natural terrain features (e.g., hills and dense woods) and human-made features (e.g., buildings and walls) can substantially reduce noise levels. Walls are often constructed between a source and a receiver specifically to reduce noise. A barrier that breaks the line of sight between a source and a receiver will typically result in minimum 5 dB of noise reduction. Taller barriers provide increased noise reduction.

Noise reductions afforded by building construction can vary depending on construction materials and techniques. Standard construction practices typically provide approximately 15 dBA exterior-to-interior noise reductions for building facades, with windows open, and approximately 20-25 dBA, with windows closed. With compliance with current building construction and insulation requirements, exterior-to-interior noise reductions typically average approximately 25 dBA. The absorptive characteristics of interior rooms, such as carpeted floors, draperies, and furniture, can result in further reductions in interior noise.

Human Response to Noise

The human response to environmental noise is subjective and varies considerably from individual to individual. Noise in the community has often been cited as a health problem, not in terms of actual physiological damage, such as hearing impairment, but in terms of inhibiting general well-being and contributing to undue stress and annoyance. The health effects of noise in the community arise from interference with human activities, including sleep, speech, recreation, and tasks that demand concentration or coordination. Hearing loss can occur at the highest noise intensity levels. When community noise interferes with human activities or contributes to stress, public annoyance with the noise source increases. The acceptability of noise and the threat to public well-being are the basis for land use planning policies preventing exposure to excessive community noise levels.

Unfortunately, there is no completely satisfactory way to measure the subjective effects of noise or of the corresponding reactions of annoyance and dissatisfaction. This is primarily because of the wide variation in individual thresholds of annoyance and habituation to noise over differing individual experiences with noise. Thus, an important way of determining a person's subjective reaction to a new noise is the comparison of it to the existing environment to which one has adapted: the so-called "ambient" environment. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged. Regarding increases in A-weighted noise levels, knowledge of the following relationships will be helpful in understanding this analysis:

Except in carefully controlled laboratory experiments, a change of 1 dB cannot be perceived by humans;
Outside of the laboratory, a 3-dB change is considered a just-perceivable difference;
A change in level of at least 5 dB is required before any noticeable change in community response would be expected. An increase of 5 dB is typically considered substantial;
A 10-dB change is subjectively heard as an approximate doubling in loudness and would almost certainly cause an adverse change in community response.

8.4 Existing Noise Environment

Monitoring

Short-term (10-minute) and long-term (24-hours) noise level measurements were conducted from October 10, 2022 through October 13, 2022 for the purpose of documenting and measuring the existing noise environment at various locations throughout the City. Measurement locations were selected near major noise sources and other locations of interest within the community.

Short-Term Ambient Noise Measurements

Twenty eight short-term measurement were conducted. Short-term ambient noise measurement locations and corresponding measured average-hourly noise levels (in dBA L_{eq}) are summarized in Table 8-6. Noise measurement locations are depicted in Figure 8-2.

As noted in Table 8-6, measured daytime noise levels ranged from approximately 40 to 73 dBA L_{eq}. Ambient noise levels are largely influenced by vehicle traffic on area roadways. To a lesser extent, aircraft overflights and other noise sources within the community (e.g., landscaping, industrial activities, construction activities) also contribute to the ambient noise environment.

Long-Term Ambient Noise Measurements

Two long-term measurements were conducted, which are identified as LT-1 and LT-2 in Figure 8-2. Noise measurement location LT-1 was located approximately 110 feet from U.S. Highway 101, near San Palo Road. Noise measurement location LT-2 was located approximately 500 feet from U.S Highway 101 and 300 feet from El Camino Real. Measured ambient noise levels for noise measurement locations LT-1 and LT-2 are summarized in Tables 8-7 through 8-8, respectively.

As noted in Tables 8-7, measured ambient noise levels at location LT-1 ranged from approximately 68 dBA L_{eq} during the nighttime hours to a high of approximately 81 dBA L_{eq}, during the daytime hours. Average-daily noise levels at location LT-1 measured 81 dBA CNEL/L_{dn}. Measured ambient noise levels at location LT-2 ranged from approximately 48 dBA L_{eq} during the nighttime hours to a high of approximately 58 dBA L_{eq} during the daytime hours. Average-daily noise levels at location LT-2measured 57 dBA CNEL/L_{dn}. In general, nighttime noise levels are typically 5-10 dB lower than daytime noise levels.

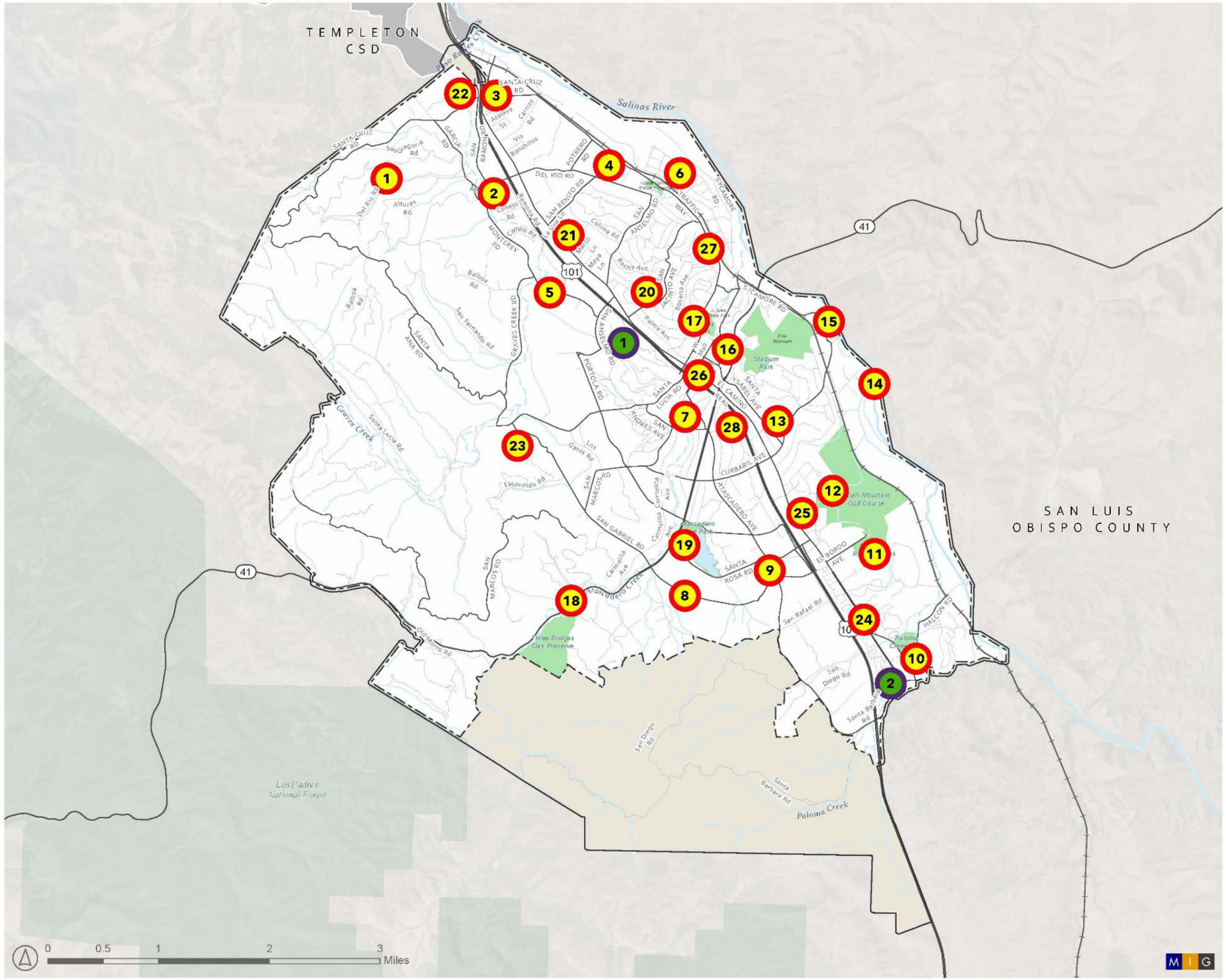


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Figure 8-2
Ambient Noise Measurement Locations

Basemap Features
- Atascadero City Limits
- Atascadero Planning Area
- Rivers + Waterbodies
- Parks + Open Space
- Sphere of Influence
- Major Roads + Freeways

Noise Measurement Locations
- Long-Term (LT) Measurement
- Short-Term (ST) Measurement

Notes and Sources:
Refer to Tables 8-6, 8-7, and 8-8 for corresponding noise measurement data. Ambient Air Quality & Noise Consulting, Esri, US Census, County of San Luis Obispo Open Data, City of Atascadero 2023.

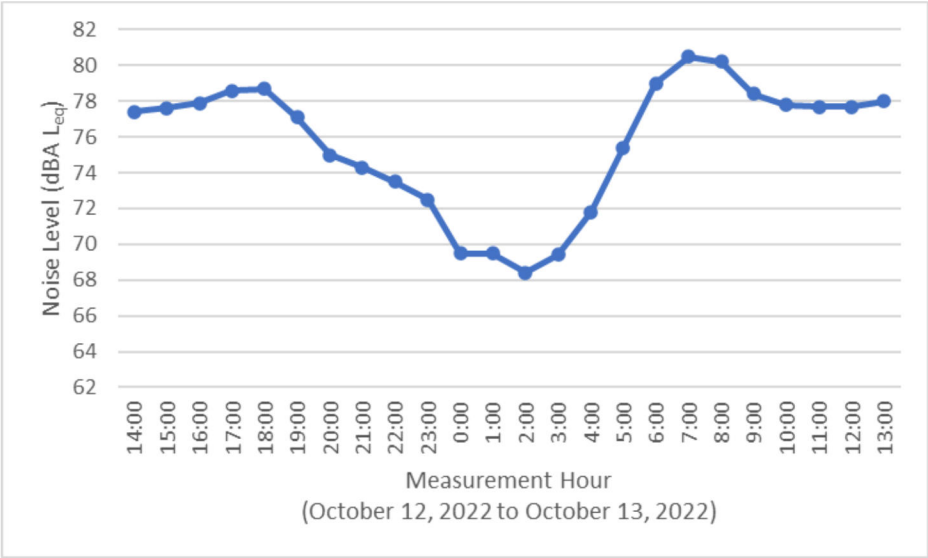
Table 8-6: Summary of Short-Term Measured Ambient Noise Levels

Measurement	Location	Measurement Period	Primary Noise Sources	Noise Level (dBA L_{eq})
October 10, 2022				
ST1	7800 Del Rio Road	10:41 – 10:51	Birds, Electrical Equipment	44.3
ST2	Apple Valley Park	11:03 – 11:13	Birds, Traffic, People Walking on Path	45.3
ST3	5400 Santa Cruz Road	11:50 – 12:00	Distant Traffic, Birds	57.7
ST4	San Benito Elementary School	12:10 – 12:20	Birds, Truck Passby	50.3
ST5	Monterey Road Elementary School	12:32 – 12:42	Traffic, Birds	63.2
ST6	The Lakes Lake	12:57 – 13:07	Birds	41.5
ST7	High School Hill Road	15:08 – 15:18	Traffic, Dogs	52.6
October 11, 2022				
ST8	Hope Lutheran Church	10:02 – 10:12	Traffic, Propeller Plane Overflight, Dogs, Birds	50.7
ST9	9600 Atascadero Avenue	10:26 – 10:36	Traffic, Birds	60.5
ST10	Paloma Creek Park	10:47 – 10:57	Distant Traffic, Children, Birds	44.4
ST11	Heilmann Regional Park	11:10 – 11:20	Traffic, Golf Cart, Birds, Squirrels	40.4
ST12	8500 El Corte Road	11:31 – 11:41	Traffic	52.5
ST13	Pueblo Avenue/ Sombrilla Avenue	11:53 – 12:03	Traffic, Conversation, Propeller Plane Overflight, Dogs	53.5
ST14	7700 Aragon Road	12:16 – 12:26	Dogs, Birds	49.6
ST15	7100 Sycamore Road	12:40 – 12:50	Traffic, Birds, Children, Sheep/Goat	64.7

Measurement	Location	Measurement Period	Primary Noise Sources	Noise Level (dBA L_{eq})
ST16	5454 CA-41 Parking	13:03 – 13:13	Traffic	64.8
ST17	Traffic Way Park	13:24 – 13:34	Traffic	57.8
October 12, 2022				
ST18	12500 CA-41	10:51 – 11:01	Traffic	67.9
ST19	Atascadero Lake Park	11:25 – 11:35	Traffic	63.9
ST20	Nogales Avenue/ Lobos Avenue	11:56 – 12:06	Traffic, Birds, Dog, Distant Power Tool	53.4
ST21	3300 El Camino Real	12:19 – 12:29	Traffic	68.2
ST22	1000 San Ramon Road	13:24 – 13:34	Traffic	71.2
ST23	6000 San Gabriel Road	14:06 – 14:16	Traffic, Propeller Plane Overflight	56.8
October 13, 2022				
ST24	10700 El Camino Real	10:40 – 10:50	Traffic	66.9
ST25	8965 El Camino Real	11:00 – 11:10	Traffic	71.7
ST26	Sunken Gardens	11:22 – 11:32	Traffic, Water Fountain	58.3
ST27	4890 Alamo Avenue	11:45 – 11:55	Dogs, Vehicle Passby	56.0
ST28	6050 Marchant Avenue	12:56 – 13:06	Traffic	73.1

Notes: Noise measurements were conducted from October10, 2022 through October 13, 2022. Refer to Figure 8-2 for noise measurement locations.

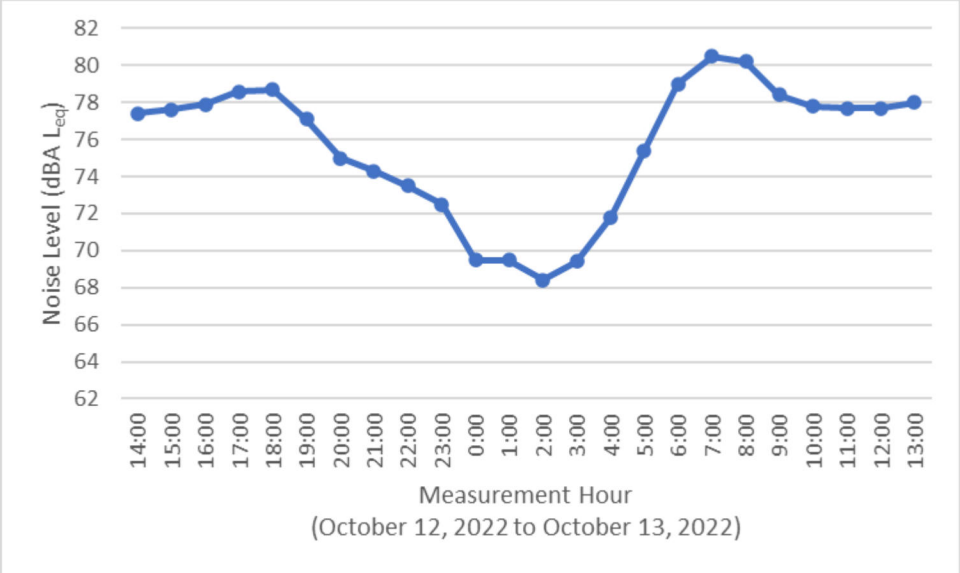
Table 8-7: Measured Long-Term Noise Levels – Measurement Location LT-1



Measurement Hour	Noise Level (dBA L_{eq})
14:00	77.4
15:00	77.6
16:00	77.9
17:00	78.6
18:00	78.7
19:00	77.1
20:00	75
21:00	74.3
22:00	73.5
23:00	72.5
0:00	69.5
1:00	69.5
2:00	68.4
3:00	69.4
4:00	71.8
5:00	75.4
6:00	79
7:00	80.5
8:00	80.2
9:00	78.4
10:00	77.8

Measurement Hour	Noise Level (dBA L_{eq})
11:00	77.7
12:00	77.7
13:00	78
Notes: Average-daily noise level measured 81 dBA CNEL/Ldn. Refer to Figure 8-2 for noise measurement location.	

Table 8-8: Measured Long-Term Noise Levels – Measurement Location LT-2



Measurement Hour	Noise Level (dBA L_{eq})
15:00	55.7
16:00	57.5
17:00	54.9
18:00	53.3
19:00	53.8
20:00	52
21:00	51.2
22:00	50.3
23:00	49.7
0:00	48.1
1:00	48.6
2:00	47.5
3:00	47.7
4:00	49.3

Measurement Hour	Noise Level (dBA L_{eq})
5:00	49.3
6:00	53.9
7:00	53.5
8:00	52.7
9:00	52.4
10:00	54.5
11:00	55.8
12:00	53.4
13:00	52
14:00	52.3
Notes: Average-daily noise level measured 57 dBA CNEL/L_{dn}. Refer to Figure 8-2 for noise measurement location.	

Noise Sources

Surface Transportation Sources

Roadway Vehicular Traffic

As noted earlier in this report, noise from vehicular traffic on area roadways is a primary source of ambient noise in the City. Major sources of roadway traffic noise within the City of Atascadero include United States Highway 101 (US-101), State Route 41 (SR-41). To a lesser extent, El Camino Real and Traffic Way contribute to roadway traffic noise.

Traffic noise levels were calculated using the Federal Highway Administration (FHWA) Roadway Noise Prediction Model (FHWA RD-77-108) based on average-daily traffic (ADT) volumes obtained from the Caltrans Traffic Census Program (Caltrans 2022). Predicted existing traffic noise levels and distances to traffic noise contours for major roadways are summarized in Table 8-9. Based on the modeling conducted, existing traffic noise levels along area roadways range from approximately 67 to 79 dBA CNEL at 50 feet from the near-travel-lane centerline. The primary generator of traffic noise within the City of Atascadero is US-101. Existing average-daily noise levels at 50 feet from the near-travel-lane centerline of US-101 are approximately 79 dBA CNEL. Existing transportation noise contours within the City of Atascadero are depicted in Figure 8-3.

Table 8-9. Existing Roadway Traffic Noise Levels & Contour Distances

Roadway Segment	ADT Volumes	CNEL at 50 ft. from Near-travel-lane Centerline	Distance to CNEL Contour (Feet from Road Centerline)		
			70	65	60
US-101: Santa Barbara Rd to Santa Rosa Rd	55,000	78.7	313	669.8	1,440.6
US-101: Santa Rosa Rd to Curbaril Ave	55,000	78.7	313	669.8	1,440.6
US-101: Curbaril Ave to SR-41	55,000	78.7	313	669.8	1,440.6
US-101: SR-41 to Traffic Way	63,000	77.5	260.9	556.5	1,196.1
US-101: Traffic Way to San Anselmo Rd	63,000	77.5	260.9	556.5	1,196.1
US-101: San Anselmo Rd to del Rio Rd	63,000	77.5	260.9	556.5	1,196.1
US-101: Del Rio Rd to San Ramon Rd	65,000	77.6	266.2	568.1	1,221.3
US-101: San Ramon Rd to Vineyard Rd	65,000	77.6	261.6	558.1	1,221.3
SR-41: Cerro Alto Rd to Santa Rosa Rd	10,000	70.4	59.8	128.4	276.3
SR-41: Santa Rosa Rd to US-101	12,000	66.6	WR	75.1	160.9
SR-41: US-101 to El Camino Real	12,000	70.2	82.2	167.5	356.2
SR-41: El Camino Real to CA-229	12,000	75.7	134.3	289.0	622.4

Notes: Traffic volumes for US-101 and SR-41 were derived from Caltrans Traffic Census Program for year 2020. Does not include shielding from intervening structures or terrain.

Source(s): Caltrans 2022

As noted in Table 8-9 and depicted in Figure 8-3, major roadway corridors located within the City include US-101 and SR-41. Existing noise-sensitive land uses located along these traffic corridors consist predominantly of residential land uses the nearest of which are generally located approximately 50 feet from the near-travel-lane centerline of US-101 and approximately 27 feet from the near-travel-lane centerline of SR-41. Other noise-sensitive land uses generally located along these corridors include, but are not limited to, places of worship, hotels, and recreational uses.

Railroad Traffic

The Union Pacific Railroad (UPRR) runs north-south through the City near the western City limits with a portion of the tracks adjacent to Traffic Way. Depending on demand, approximately five trains pass through the City on a daily basis. including three freight trains and two passenger trains (Amtrak Coast Starlight).

Existing train noise levels and distance to noise contours are summarized in Table 8-10. Based on a conservative estimate of 5 trains per day, average-daily noise levels along the railroad corridor would be approximately 66 dBA CNEL at 100 feet from the rail corridor centerline. Train noise events can also be a source of intermittent noise, including noise generated by locomotive engines, wheel squeal, and warning horns. These instantaneous noise events can contribute to increased levels of annoyance to occupants of nearby noise-sensitive land uses. Existing transportation noise contours within the City of Atascadero are depicted in Figure 8-3.

Table 8-10. Existing Railroad Traffic Noise Levels

Train Type	Number of Trains/Day	CNEL at 100 feet from Railroad Track Centerline	Distance to CNEL Contours (feet) from Railroad Track Centerline		
			70	65	60
Freight & Passenger	5	66	51	108	233

Notes: UPRR freight trains distributed equally over a 24-hour period. Does not include shielding provided by intervening terrain or structures. Does not include shielding from intervening structures or terrain. Projected railroad noise contours are depicted in Figure 8-3.

Existing noise-sensitive land uses located along the UPRR corridor consist predominantly of residential land uses the nearest of which are generally located approximately 25 feet from the UPRR track centerline. Other nearby noise-sensitive land uses include Chalk Mountain Golf Course, which is located approximately 70 feet from the track centerline.

Non-Transportation Sources

Within the City, major non-transportation noise sources consist predominantly of industrial and commercial land uses. Many industrial processes produce noise, even when the best available noise control technology is applied. Noise exposures within industrial facilities are controlled by federal and state employee health and safety regulations (i.e., regulations of the Occupational Safety and Health Administration of the U.S. Department of Labor [OSHA] and the California Division of Occupational Safety and Health [Cal-OSHA]). Exterior noise levels that affect neighboring parcels are typically subject to local standards. Commercial, recreational, and public facility activities can also produce noise that may affect adjacent noise-sensitive land uses. These noise sources can be continuous or intermittent and may contain tonal components that are annoying to individuals who live nearby. For instance, emergency-use sirens and backup alarms are often considered nuisance noise sources but may not occur frequently enough to be considered incompatible with noise-sensitive land uses. In addition, noise generation from fixed noise sources may vary based upon climate conditions, time of day, and existing ambient noise levels.

From a land-use planning perspective, stationary-source noise control issues focus on two goals: (1) preventing the introduction of new noise-producing uses in noise-sensitive areas; and (2) preventing encroachment of noise-sensitive uses upon existing noise-producing facilities. The first goal can be achieved by applying noise performance standards to proposed new noise producing uses. The second goal can be met by requiring that new noise-sensitive uses near noise-producing facilities include noise-reduction measures to

Figure 8-3
Transportation Noise Contours

Basemap Features
- Atascadero City Limits
- Atascadero Planning Area
- Rivers + Waterbodies
- Parks + Open Space
- Sphere of Influence
- Major Roads + Freeways

Existing Noise Contours
CNEL in dB(A)
- > 70
- 65 - 70

0 0.5 1 2 3 Miles

Notes and Sources:
Predicted noise contours do not include shielding from intervening structures or terrain. Ambient Air Quality & Noise Consulting, Esri, US Census, County of San Luis Obispo Open Data, City of Atascadero 2023.

ensure compliance with noise performance standards. Each of these goals stresses the importance of avoiding the location of new uses that may be incompatible with adjoining uses.

The following discussions of existing non-transportation noise sources in the community are intended to be representative of the sources and relative noise levels associated with such uses. The average-hourly noise levels (in dBA L_{eq}) discussed for these sources provide an indication of the noise levels that can generally be expected to occur over an extended period of time. The L_{eq} noise levels do not necessarily reflect possible intermittent high noise levels associated with the various uses but are useful for general planning purposes. Actual noise levels at nearby noise-sensitive receptors will vary depending on the operational characteristics of the facility, meteorological conditions, and the physical landscape.

Non-transportation noise sources within the City consist predominantly of commercial and industrial uses. To a somewhat lesser extent, other non-transportation noise sources would also include automotive/equipment repair and maintenance facilities, and construction activities. Noise levels associated with some of the more common non-transportation noise sources located throughout the community are discussed in more detail, as follows:

Commercial and Industrial Uses

Within the City planning area, commercial and industrial land uses are located primarily along major roadway and the UPRR corridor. Noise sources commonly associated with these land uses include truck traffic, loading dock activities, heavy-equipment operation, and building mechanical systems. Major industrial and commercial operations within the community include metal and glass recycling centers, trucking distribution centers, and food and agricultural products processing. Various other activities, such as loading dock activities, can result in temporary or intermittent increases in ambient noise levels. In general, noise levels associated with these uses can range from approximately 55 to 85 dBA L_{eq} at 50 feet.

Noise levels associated with commercial and industrial land uses can vary depending on various factors, including site conditions, equipment operated, and the specific activities being conducted. As a result, actual noise levels at nearby noise-sensitive receptors will likely vary depending on the above mentioned conditions and other influences, such as location, distance from source, shielding provided by intervening terrain and structures, and ground attenuation rates. For this reason, noise generated by commercial and industrial uses and impacts to nearby noise-sensitive land uses should be evaluated on a project-by-project and site-specific basis.

Other Non-Transportation Noise Sources

Various other non-transportation noise sources can contribute to noticeable increases in ambient noise levels. Such sources would include, but are not limited to, recreational uses or events, particularly those that utilize amplified sound systems (e.g., sporting events, concerts, festivals, public actions, animal/vehicle exhibitions, etc.); automotive repair facilities; building mechanical systems, and landscape maintenance activities. Noise generated by such sources are often directional and can vary depending on site and operational characteristics.

Concerts and Live Music

Outdoor live music, festivals, and concert events are hosted at several locations within the City; such as, the Atascadero Lake Park, the Sunken Gardens, and The Plaza. Noise levels associated with live music and concerts can vary depending on musical style (e.g., rock, pop,

metal, hip-hop, classical, etc.) and amplification. Additionally, noise generated from amplification (speakers) is directional, which can greatly affect operational noise levels at offsite locations.

Landscape Maintenance

Landscape maintenance activities often result in sporadic and intermittent increases in ambient noise levels. Equipment used for landscape maintenance often include the use of power mowers and leaf blowers. Leaf blowers and gasoline-powered lawnmowers can result in intermittent noise levels of up to approximately 100 dBA at 3 feet (EPA 1971). Resultant exterior noise levels could reach intermittent levels of approximately 75 dBA L_{max} at 50 feet. The use of leaf blowers, particularly when used during the more noise-sensitive evening and nighttime hours, may result in increased levels of annoyance.

Automotive Maintenance & Repair

Typical automotive maintenance and repair activities often include the use of pneumatic tools, air compressors, and power generators. Other equipment operations such as the use of power hand tools (e.g., sanders, drills, grinders, pneumatic wrenches, etc.), typically generate a lesser degree of noise. The use of air compressors, power generators, and pneumatic tools can generate noise levels of up to approximately 85 dBA at 50 feet. Noise levels generated by the use of hand-held tools, such as sanders, drills, and grinders, typically average between 63 and 87 dBA at 3 feet. The use of multiple hand tools, such as grinders being used on metal, can generate levels of 87 to 97 dBA at 3 feet (EPA 1971, FHWA 2008). Noise levels associated with these facilities would be dependent on the specific activities performed and source/facility characteristics.

Building Mechanical Systems

The majority of electrical and mechanical equipment in buildings is used for air circulation systems. Mechanical systems may also include pumping systems, elevators and escalators, and various other material conveyance systems. Much of this equipment is located in mechanical equipment rooms or in areas that provide shielding from direct public/personnel exposure (i.e., above ceilings, in walls, or behind enclosures.) Equipment located within exterior areas can result in increases in ambient noise levels, particularly when located in unshielded areas and within line-of-sight of nearby receptors. Such equipment would include air-conditioning units, cooling towers, compressors, fans/turbines, electrical transformers, chillers, and pumps. Noise levels associated with these sources can vary depending on the specific equipment being operated, facility/equipment design, and operational characteristics. Typical noise levels associated with building mechanical equipment can range from less than 50 to 110 dBA at 3 feet, with the highest noise levels reaching approximately 85 dBA at 50 feet from the source.

Construction Activities

Construction noise typically occurs intermittently and varies depending upon the nature or phase (e.g., demolition/land clearing, grading, and excavation, erection) of construction. Noise generated by construction equipment, including pile drivers, material handling equipment, pavers, jackhammers, and portable generators, can result in intermittent and prolonged increases in ambient noise levels. Although construction noise impacts are generally short-term, they can result in increased levels of annoyance to occupants of nearby

residential dwellings. In general, noise levels generated by construction activities can range from approximately 71 to 83 dBA L_{eq} at 50 feet from the source.

Noise-generating construction activities are currently regulated through implementation of the City's Noise Control ordinance, which generally limits these activities to the less noise-sensitive daytime hours (City of Atascadero 2022).

8.5 Sensitive Land Uses

Noise-Sensitive Land Uses

Noise-sensitive land uses are generally considered to include those uses that would result in noise exposure that could cause health-related risks to individuals. Places where quiet is essential are also considered noise-sensitive uses. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Other land uses such as parks, historic sites, cemeteries, and recreation areas are also considered potentially sensitive to increases in exterior noise levels. School classrooms, places of assembly, hotels, libraries, and other places where low interior noise levels are essential are also considered noise-sensitive land uses.

The following noise-sensitive land uses have been identified within the City of Atascadero:

Residential land uses, including single-family units and multi-family units
Schools
Atascadero State Hospital
Assisted living/care facilities
Places of worship
Hotels and lodging
Community parks
Public Library

8.6 Sources

Reports and Documents

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Data

California Department of Transportation (Caltrans). Accessed: October 25, 2022. *Traffic Census Program*. Website url: https://dot.ca.gov/ programs/traffic-operations/census.

8.7 Acronyms and Key Terms

ADT: Average-Daily Traffic

Caltrans: California Department of Transportation

CNEL: Community Noise Equivalent Level

dB: Decibels

dBA: A weighted decibels

EPA: U.S. Environmental Protection Agency

FHWA: Federal Highway Administration

HUD: Federal Department of Housing and Urban Development

Hz: Hertz

Ldn: Annual-Average Day-Night Noise Level

Leq: Equivalent Sound Level

OPR: Governor's Office of Planning and Research

OSHA: Occupational Safety and Health Administration

UPRR: Union Pacific Railroad

APPENDIX I

2045 General Plan Existing Conditions Report | Chapter 4: Transportation and Mobility

2045 General Plan Existing Conditions Report

Chapter 4: Transportation and Mobility

Transportation and Mobility Findings

Regulatory Setting

1. Recent changes to State law eliminated vehicular delay, typically measured as level of service (LOS), as an environmental impact since this metric discouraged infill and high-density development and was counterproductive for meeting the State's emissions goals. Instead, the State has mandated that vehicle miles traveled (VMT) be used to identify transportation impacts under the California Environmental Quality Act (CEQA). This change will likely reduce barriers to development projects that improve jobs-housing ratios, are well served by transit, and develop within mixed-use corridors like El Camino Real and Morro Road (SR 41). Infrequent transit and low density development is a challenge for reducing VMT due to transit service.

2. SLOCOG's Regional Transportation Plan (RTP) reflects a preferred land use alternative where land use growth is focused on mixed-use corridors like El Camino Real and Morro Road (SR 41) which are more transportation efficient. This preferred alternative is the basis for future year transportation modeling used to identify regional transportation projects. The RTP lists programmed funding for multiple projects in the city, including improvements to the US 101/Del Rio Road interchange, replacement of the Via Avenue bridge, installation of a pedestrian hybrid beacon at the El Camino Real/East Mall intersection, and implementation of Phase 2 of the planned SR 41 complete streets improvements from El Camino Real to San Gabriel Road.

Existing Roadway System

1. Atascadero has 145 miles of roadways, more than any other city in the county. Maintaining the extensive roadway network has been an ongoing challenge for the City since funding typically comes from the General Fund. Voters approved a one-half percent sales tax in 2014 (Measure F-14) that the City has used to fund roadway maintenance, with a 12-year term that generated $3.1 million in 2022 and $2.8 million in 2021. The existing pavement condition index (PCI) for the city's roads is 50, well below the target of 75. This translates into a current and ongoing need for roadway maintenance and surface improvements.

2. The El Camino Real corridor is identified as a priority for land use growth in multiple studies. The downtown portion of the corridor has planned improvements to enhance safety for multi-modal travel (e.g., reduce the number of vehicle travel lanes to make room for other parking, transit, bicycle, pedestrian, and/or streetscape improvements), improve pedestrian accessibility, and increase parking.

3. The US 101 freeway bisects Atascadero and limits east-west access. Of the eight freeway interchanges, most were constructed in the 1960s and are undersized or outdated, creating congestion and barriers for motorists, pedestrians, and bicyclists. Future interchange upgrades will be costly and will need to be prioritized in consultation with Caltrans.

Parking

1. Community members have identified parking as an important issue. Parking surveys show that the overall peak parking demand in Atascadero is less than half the available parking supply in the City core. However, many parking spaces are privately controlled, inefficiently allocated, or located away from key destinations. Parking within or near larger multi-family areas is also impacted, often due to limited on-street parking due to narrow roads in hilly areas. Parking management techniques, such as limited hour or permits, could be used to make parking areas more efficient.

Transit

1. Atascadero is served by fixed-route bus transit service along the El Camino Real corridor through the SLO Regional Transit Authority. The City also provides dial-a-ride services, and Amtrak provides bus services. Existing bus transit stops are largely concentrated along El Camino Real, with limited access to western residential neighborhoods. Bus service is also infrequent, which hinders the ability for the community to fully rely on transit.

Bicycle, Pedestrian, and Trail Facilities

1. Atascadero's climate, City core topography, and development patterns in mixed-use areas are conducive to recreational and commute bicycle trips. However, the bicycle commute mode share in the city is lower than the statewide average (1.6% versus 3.1%) due to a limited and incomplete bicycle network which is a function of the City's topography, rural nature, and large size. With a growing interest to encourage outdoor recreation and support local and regional emissions reduction goals, the City sees opportunities to expand the bicycle network and create improved connections to schools, commercial areas, and other destinations. The City's Bicycle Transportation Plan lists 18 planned bicycle infrastructure projects to improve the bicycle network.
2. Approximately 4.5% of commute trips in the city are made by walking, which is substantially higher than the statewide average of 2.7%. The city's steep topography and low-density land uses on the west side tend to discourage destination walking, but the higher densities and mix of uses on the east side generally support walking. Walking is hindered in more residential and rural parts of the city due to topography, physical constraints, sidewalk gaps or missing sidewalks, and limited crossings.
3. Safe Routes to School evaluations, led by SLOCOG, identified Santa Rosa Academic Academy, Atascadero Middle School, and Atascadero High School as having the greatest need for investment in the region and will be prioritized for capital improvements.
4. Many of the US 101 interchanges in the city serve as barriers to pedestrian and bicycle access.

Freight and Goods Movement

1. Union Pacific (UPRR) operates mainline rail freight service between the San Francisco Bay Area and Southern California along the Coast Line. Through Atascadero, the Coast Line runs generally north-south, parallel to and west of the Salinas River. There are

three at-grade railway crossings and three grade-separated crossings. There are no rail stops in the City limiting the potential for goods delivery via rail.

2. US 101, running north-south bisecting central Atascadero, serves as the main thoroughfare for the movement of commercial goods to and from the city.

Aviation

1. Atascadero does not contain any airports within its city limits but is served by airports in neighboring cities. The San Luis Obispo County Regional Airport is a regional hub for passenger air travel. The airport offers non-stop flights to Seattle, San Diego, Portland, Phoenix, Dallas-Fort Worth, Denver, San Francisco, and Los Angeles. The Paso Robles Municipal Airport serves private charter flights and seeks to become a space port.

Travel and Commute Patterns

1. Atascadero has a jobs-housing ratio of 0.80, indicating substantially more households than jobs in the city. Over 10,700 Atascadero residents were employed outside of the city in 2019, while 6,000 employees traveled to Atascadero for work. Nearly 3,000 residents live and work in the city. Nationally, the number of people primarily working from home tripled between 2019 and 2021.

2. Over 81% of commuters in Atascadero drive alone to work. An additional 11% of commuters carpool via car, truck, or van. Nearly 1.5% of commuters use public transportation and roughly 4.5% of commuters travel to work by walking, considerably higher than the statewide rate of 2.7%. The mean travel time to work for City residents is 23 minutes.

Network Performance and Safety

1. Congestion is typically localized near undersized Highway 101 interchanges and schools during pick-up and drop-off times. Generally, congestion is short-lived and most drivers experience low levels of delay outside of short peak periods. Traffic volumes on local streets have not increased substantially over the past 20 years.

2. Between 2015 and 2019, more than one-third of the collisions in Atascadero resulted from vehicles traveling at unsafe speeds. Over the past 10 years, 145 reported collisions involving cyclists or pedestrians have occurred, the majority along El Camino Real and Morro Road/State Route 41. Residents have highlighted roadway and traffic safety as a major concern.

3. The City's Local Road Safety Plan provides recommendations for 20 safety hot spots as well as systemic improvements to address collisions associated with lane departure, unsafe speed, traffic signals, lighting, DUI, pedestrian, and bicycle safety.

4.1 Introduction

The City of Atascadero is in northern San Luis Obispo County and was laid out as a part of the 1913 Atascadero Colony plan that reflected low-intensity land uses and the nascent automobile use of the time. The original roadway network used a radial pattern, expanding out from the City Hall area, that was connected by arterial rings. There were some limited areas in the city's core that formed a grid pattern. The construction of US 101 in 1954 effectively bisected the city and lead to commercial uses developing along the El Camino Real Corridor, along with numerous bottlenecks where local traffic crosses US 101 at eight interchanges.

This chapter is organized into the following sections:

Section 4.1: Introduction
Section 4.2: Regulatory Setting
Section 4.3: Transportation Agencies and Service Providers
Section 4.4: Existing Roadway System
Section 4.5: Parking
Section 4.6: Transit
Section 4.7: Bicycle and Trail Facilities
Section 4.8: Pedestrian Network
Section 4.9: Freight and Goods Movement
Section 4.10: Aviation
Section 4.11: Travel Characteristics and Commute Patterns
Section 4.12: Network Performance and Safety
Section 4.13: Appendix A: Existing Intersection Levels of Service
Section 4.14: Sources
Section 4.15: Acronyms and Key Terms

4.2 Regulatory Setting

Federal

Federal Highway Administration (FHWA)

The Federal Highway Administration (FHWA) is an agency within the U.S. Department of Transportation that supports State and local governments in the design, construction, and maintenance of the nation's highway system.

Federal Transit Administration (FTA)

The Federal Transit Administration (FTA) manages and participates in the environmental reviews of FTA-funded projects and has authority for the final environmental approvals. The Office of Planning and Environment supports the Regional Offices in the review of projects by providing in-house and contractor expertise on technical issues. The Office of Planning and Environment also provides technical assistance on general environmental protection and specific impact assessment methods including noise, vibration, and air quality to the Regional offices, as well as to project sponsors and the interested public.

State

Numerous State policies and plans affect Atascadero's circulation network and the planning and design of new facilities. State transportation policies are generally more detailed and stringent than Federal policies.

California Complete Streets Act of 2008

The Complete Streets Act requires that City general plans support the development of multimodal transportation facilities. Complete Streets policies seek to accommodate all users safely and efficiently, including pedestrians, cyclists, drivers, and transit riders.

California Senate Bill 288 (2020)

SB 288 provides exemptions under the California Environmental Quality Act (CEQA) for some transit, bike, and pedestrian projects.

California Environmental Quality Act (CEQA)

CEQA is a State law enacted in 1970 to require analysis of the impact of public and private land use actions intended to inform government decisionmakers and the public about the potential environmental effects of proposed projects and to prevent significant, avoidable environmental damage.

California Senate Bill 743 (2013)

SB 743 requires CEQA lead agencies (often the City of Atascadero) to use vehicle miles traveled (VMT) as the primary tool for identifying transportation impacts. This is a major change from past practices that were reliant on level of service (LOS), a measure of vehicular delay that discouraged infill, high density development in favor of sprawling greenfield development. The State Office of Planning and Research (OPR) published a Technical Advisory on Evaluating Transportation Impacts in CEQA in December 2018 that recommends thresholds and analysis methods for various project types.

California Department of Transportation (Caltrans)

Caltrans is a responsible agency under CEQA and reviews environmental documents that affect transportation facilities under their jurisdiction. Their jurisdiction includes all Highway 101 intersections in the city limits and Highway 41.

California Transportation Plan 2050 (CTP 2050)

The CTP 2050 is a statewide, long-range transportation policy plan designed to meet California's future mobility needs and reduce greenhouse gas (GHG) emissions. The plan envisions a fully integrated, multimodal, sustainable transportation system that supports economic vitality, protects natural resources, promotes the health and well-being of all Californians, and meets people's needs equitably.

Regional

The San Luis Obispo Council of Governments (SLOCOG) serves as both the Regional Transportation Planning Agency and Metropolitan Planning Organization for San Luis Obispo County and incorporated cities (including Atascadero). SLOCOG allocates Federal and State transportation funds as an association of local governments within the region.

Draft 2023 Regional Transportation Plan

SLOCOG is required to prepare and adopt a Regional Transportation Plan (RTP) every four years. The RTP outlines regional transportation policies and identifies projects and funding to support transportation needs. The Administrative Draft 2023 RTP was released in December 2022. It lists four constrained (i.e., funded) projects in Atascadero. These include improvements to the US 101/Del Rio Road interchange, replacement of the Via Avenue bridge over Atascadero Creek, installation of a pedestrian hybrid beacon at the El Camino Real/East Mall intersection, and implementation of Phase 2 of the planned SR 41 complete streets improvements from El Camino Real to San Gabriel Road. The RTP is scheduled to be released for public review in January 2023, and additional traffic modeling work related to VMT is currently underway.

Local

The City of Atascadero has a variety of local planning documents informing improvements to the transportation network.

Atascadero Bicycle Transportation Plan (2010)

The Bicycle Transportation Plan provides a blueprint for the development of bicycle facilities within Atascadero, with goals of encouraging recreational cycling by residents and visitors. The plan documents existing bicycle facilities and shows opportunities for additional improvements in the short and long term.

Atascadero Parking Utilization and Management Study (2006)

The Parking Utilization and Management Study reports that the downtown area has a total parking supply of 3,020 spaces, 85% of which are in off-street lots, many of them private. The maximum observed demand was 1,138 spaces, with more than half of available spaces both on- and off-street available. The study recommends the development of a parking in-lieu fee to encourage infill development where on-site parking is infeasible or undesirable. It

recommends the development of employee parking areas and designated areas for business loading and deliveries and recommends improved pedestrian lighting levels in parking areas and connecting pedestrian paths. The plan notes that there is currently adequate parking supply to accommodate both existing and planned development.

Atascadero Local Road Safety Plan (2022)

The Local Road Safety Plan (LRSP) systematically evaluates collision data on city streets to identify high-priority roadway safety issues. This analysis supports the development of appropriate countermeasures to best address safety priorities. More than 1/3 of collisions in the city had a primary collision factor of unsafe speed, which corresponds to a ranking of 13th highest number of speeding-related collisions out of 94 similar-sized cities in California. In addition to unsafe speeds, the LRSP focuses on collisions associated from lane departures, traffic signals, lighting, driving under the influence, pedestrian safety, and bicycle safety.

SR 41 Corridor Study

A Complete Streets Feasibility Study was completed for State Route 41 between El Camino Real and the City's western city limits. The study evaluated potential improvements to the roadway that would improve safety for all modes of transportation while continuing to provide access to businesses. Improvement to bicycle and pedestrian access along Atascadero Avenue was added to the plan. The final plan included Class IV protected bikeways on each side of the corridor.

Downtown Infrastructure Enhancement Plan

The Downtown Atascadero Infrastructure Enhancement Plan proposes repurposing a large portion of the street width of El Camino Real to accommodate all modes of transportation. The current design would drop a lane in each direction to make room for pedestrian and bicycle safety improvements, street spaces and angled parking.

The El Camino Plan (2019)

The El Camino Plan evaluated two disconnected segments of El Camino Real on either side of downtown Atascadero. The northern segment is 1.2 miles long and extends from San Anselmo Road to Madera Place. The southern segment is 1.9 miles long and extends from San Gabriel Road to SR 41. The plan notes that with 100 feet of right-of-way available there are opportunities to reallocate roadway space to better serve bicycles and pedestrians.

Interchange Operational Improvement Study (2008)

The Interchange Operation Improvement Study evaluated traffic operations at six key US 101 interchanges within the city. It includes near-term and long-term improvement recommendations for the interchanges, with a focus on improving capacity and safety by changing traffic control. Roundabouts are recommended at many of the ramp terminals, which will require further study to determine bridge widening needs to meet current design standards.

City of Atascadero General Plan 2025

A general plan is a high-level policy document that is often described as the blueprint for development. A general plan establishes the "ground rules" for conserving resources, designing new projects, expanding public services, and improving community amenities. It

articulates the community's vision and guides growth, change, and development over a 20-25-year period. Adopted in June 2002, the City of Atascadero General Plan 2025 (General Plan 2025) sets the course of all planning efforts both City-initiated and developer-proposed, and includes four chapters:

- Land Use, Open Space, and Conservation Element
- Circulation Element
- Safety and Noise Element
- Housing Element

The following section lists the Circulation Element goals, as they relate to this chapter of the 2045 General Plan Existing Conditions Report.

Circulation

The Circulation Element provides a long-range plan for the City of Atascadero to accommodate the transportation of people and goods within the city using a structured network of highways, streets, pathways, and trails. This includes all modes of transportation including transit, bicycles, pedestrians, and equestrians in addition to motorized vehicles. Circulation policies and programs have been developed to achieve consistency with the other elements of the General Plan, to reflect current community desires, and to provide a safe and efficient circulation system. The Circulation Element has been developed to be consistent with policies of the APCD, SLOCOG, San Luis Obispo Regional Transit Authority (SLORTA), Caltrans, and other regional agencies. The Circulation Element also reflects the importance of neighborhood quality as well as vehicle, bicyclist, and pedestrian safety, and emphasizes policies and programs to reduce vehicle use by promoting alternative modes of travel. The goals of the 2002 Circulation Element include:

- **CIR 1:** Provide a balanced, safe, and efficient circulation system that serves all segments of the community and is designed and constructed to preserve rural character.
- **CIR 2:** Provide for walkways, horse trails, and bikeways without curbs and sidewalks in rural areas. Provide a comprehensive system of routes to schools and parks which include creekside trails.
- **CIR 3:** Provide and promote alternative modes of travel to reduce traffic congestion and improve air quality by providing viable transit alternatives.

4.3 Transportation Agencies and Service Providers

Introduction

The City of Atascadero is served by both national and regional transportation agencies and providers. This section provides an overview of the various agencies and service providers.

San Luis Obispo County Regional Transit Authority (RTA)

RTA serves Atascadero with the Route 9 hourly fixed route bus service connecting the city to San Luis Obispo, Santa Margarita, Templeton, Paso Robles, and San Miguel. RTA Route 9 stops in Atascadero at Viejo Camino and Bocina and at the Atascadero Transit Center, in the downtown area, near the junction of US 101 and SR 41.Amtrak

Amtrak provides scheduled, national transit service via bus connections within Atascadero. Service is offered through two daily buses, one northward towards San Jose, and one southward towards Los Angeles. The only stop within Atascadero is the Transit Center in Downtown Atascadero. Train service is available in the Cities of Paso Robles and San Luis Obispo.

4.4 Existing Roadway System

Introduction

This section describes the existing transportation system in Atascadero. **Figure 4-1** shows the functional classifications of the city's roadways.

Study Locations

The following intersections were analyzed in Fall 2022 during weekday morning and evening peak hour periods:

1. El Camino Real/San Benito Road
2. El Camino Real/San Anselmo Road East
3. El Camino Real/San Anselmo Road West
4. El Camino Real/Curbaril Avenue
5. El Camino Real/Santa Rosa Road
6. El Camino Real/San Gabriel Road
7. El Camino Real/Santa Barbara Road
8. Traffic Way/Ardilla Avenue/US 101 SB Ramp
9. Traffic Way/Via Avenue
10. SR 41/Morro Road/Curbaril Avenue
11. SR 41/Morro Road/Atascadero Avenue
12. SR 41/Mercedes Avenue
13. Atascadero Avenue/Santa Rosa Road

The operational performance of the study intersections are discussed in Section 4.12 and on **Figure 4-5**. Performance for additional intersections are also included using results from other recent studies.

Roadway Classifications

Atascadero's roadway system currently consists of the roadway types listed below. The City is currently working to update roadway classifications.

- **Freeways/Highways.** Intercity or interregional connections designed for high-volume, high-speed traffic. Freeways have controlled access, with limited cross-traffic and connections to via interchanges.

- **Arterials.** There are both major and minor arterials within the city limits. Major arterials connect key destinations, such as Highway 101 or El Camino Real, and neighborhoods within the city. They are generally moderate-to-high speed roadways. Minor arterials connect lower volume roads with major arterials, often serving areas with less mobility or access to essential roads.
- **Collectors.** Connect local streets to arterials and act as key connections within residential neighborhoods.
- **Local Streets.** Low-volume streets that mostly connect to residential properties.

Existing Roadways

Important roadways within Atascadero are listed below and shown in **Figure 4-1**. Note that many of these roadways have different functional classifications along different segments.

- **Ardilla Avenue*.** A local road connecting Ardilla Road to Atascadero Avenue with no posted speed limit.
- **Ardilla Road.** A minor arterial with no posted speed limit.
- **Atascadero Avenue*.** A minor arterial that connects Ardilla Avenue to the southerly city limits with speed limits ranging 35-50 mph.
- **Capistrano Avenue.** A collector and minor arterial with a speed limit of 35 mph.
- **Carmelita Road.** A collector and local road with no posted speed limit.
- **Curbaril Avenue*.** A minor arterial and local road that connects San Marcos Road to the railroad tracks on the East side of town. Speed limits range 35-40 mph.
- **Del Rio Road.** A collector, minor arterial and local road with a speed limit of 30 mph.
- **East Front Street.** A collector with no posted speed limit.
- **El Camino Real*.** El Camino is a major north-south route that spans California. Within the vicinity of Atascadero, El Camino Real serves as a major arterial and a minor arterial with speed limits ranging 25-45 mph.
- **Graves Creek Road.** A collector with no posted speed limit.
- **Lewis Avenue.** A minor arterial with no posted speed limit.
- **Mercedes Avenue*.** A collector with no posted speed limit.
- **Monterey Road.** A minor arterial road with a posted speed limit of 35 mph.
- **Navarette Avenue.** A local road with no posted speed limit.
- **Potrero Road.** A collector with no posted speed limit.
- **Portola Road.** A minor arterial with a posted speed limit of 35 mph.
- **San Anselmo Road*.** A collector with a posted speed limit of 35 mph.
- **San Benito Road*.** A local road with speed limits of 30 mph.
- **San Gabriel Road*.** A collector and minor arterial with speed limits of 45 mph.
- **San Jacinto.** A collector with no posted speed limit.
- **San Marcos.** A collector and local road with no posted speed limit.
- **San Ramon Road.** A collector with no posted speed limit.
- **Santa Barbara Road*.** A minor arterial roadway with no posted speed limit.
- **Santa Cruz Road.** A minor arterial with no posted speed limit.
- **Santa Lucia Road.** Acollector and minor arterial road with a posted speed limit of 40 mph.
- **Santa Rosa Road*.** A minor arterial with a speed limit of 35 mph
- **Santa Ysabel Avenue.** A minor arterial with a posted speed limit of 25 mph.
- **State Route 41 (Morro Road)*.** A State highway connecting Morro Bay to Yosemite National Park. SR 41 is a two-lane east-west highway connecting Morro Bay to

Atascadero with a posted speed limit of 55 mph. SR 41 expands to 3-5 lanes within the vicinity of US 101 and El Camino Real and the posted speed limit is reduced to 45 mph.
- **Sycamore Road.** A collector with a posted speed limit of 40 mph.
- **Traffic Way.** A minor arterial with a speed limit of 35-40 mph.
- **US Highway 101*.** A major north-south interstate facility connecting Los Angeles to San Francisco. US 101 maintains 4 lanes throughout the City of Atascadero.
- **Viejo Camino.** A minor arterial, collector and local road with a posted speed limit of 40 mph.
- **VenandoAvenue.** A local road with no posted speed limit.
- **Via Avenue*.** A collector with no posted speed limit.
- **West Front Road.** A minor arterial and collector with no posted speed limit.
- **West Mall.** A collector with a no posted speed limit.

* Indicates that the roadway was included in the study locations.

4.5 Parking

Introduction

Atascadero provides both on-street and off-street parking options. The City estimates that over 1,200 public parking spaces are available within Downtown Atascadero. Previous studies report a total parking supply of 3,020 spaces with a maximum observed demand of 1,138 spaces; more than half of the on- and off-street parking is usually available. Parking is an important issue for key City stakeholders. Parking surveys show that although overall peak parking demand is low, many parking spaces are privately controlled and/or inefficiently allocated, therefore deemed unusable. On-Street Parking

On-street parking is common in Atascadero, especially Downtown, along El Camino Real, portions of Traffic Way, and State Route 41 within the city. On-street parking is allowed on local streets on the shoulders unless noted otherwise.

Public Off-Street Parking

The City provides off-street parking at the Atascadero Transit Center and the 5454 CA-41 parking lot between State Route 41 and Hospital Drive. There are also a few park and ride lots within the city limits, the following list provides more information:

- Santa Barbara Park and Ride Lot – Located at the south end of the city limits, on the corner of San Antonio Road and Atascadero Avenue.
- Santa Rosa Park and Ride Lot – Located on the corner of Santa Rosa Road and W Front Road. It neighbors the on ramps for 101 North and South.
- Curbaril Park and Ride Lot – Located on the corner of San Luis Avenue and Curbaril Avenue, allows for easy access to Hwy 101 and is walking distance to various stores are restaurants nearby.
- St. Williams Park and Ride Lot – Located on the corner of Santa Lucia Road and Ardilla Road. It is positioned immediately to the right of the Traffic Way exit off of Hwy 101 for easy access.
- Highway 41 Park and Ride Lot – Located on the east side of SR-41, after intersecting with Hwy 101. The lot is on Hospital Drive and has access to both East and West directions on the highway.

Each of the lots described above has transit access, either in the form of direct access or located within half of a mile of the nearest stop, and multiple bike lockers. These amenities help to encourage commuters and community members without personal transportation to use these facilities. Park and ride lots in San Luis Obispo County are affiliated with the Rideshare program and serve as a neutral location for vanpooling or other forms of carpooling.

Figure 4-1: Existing Roadway System

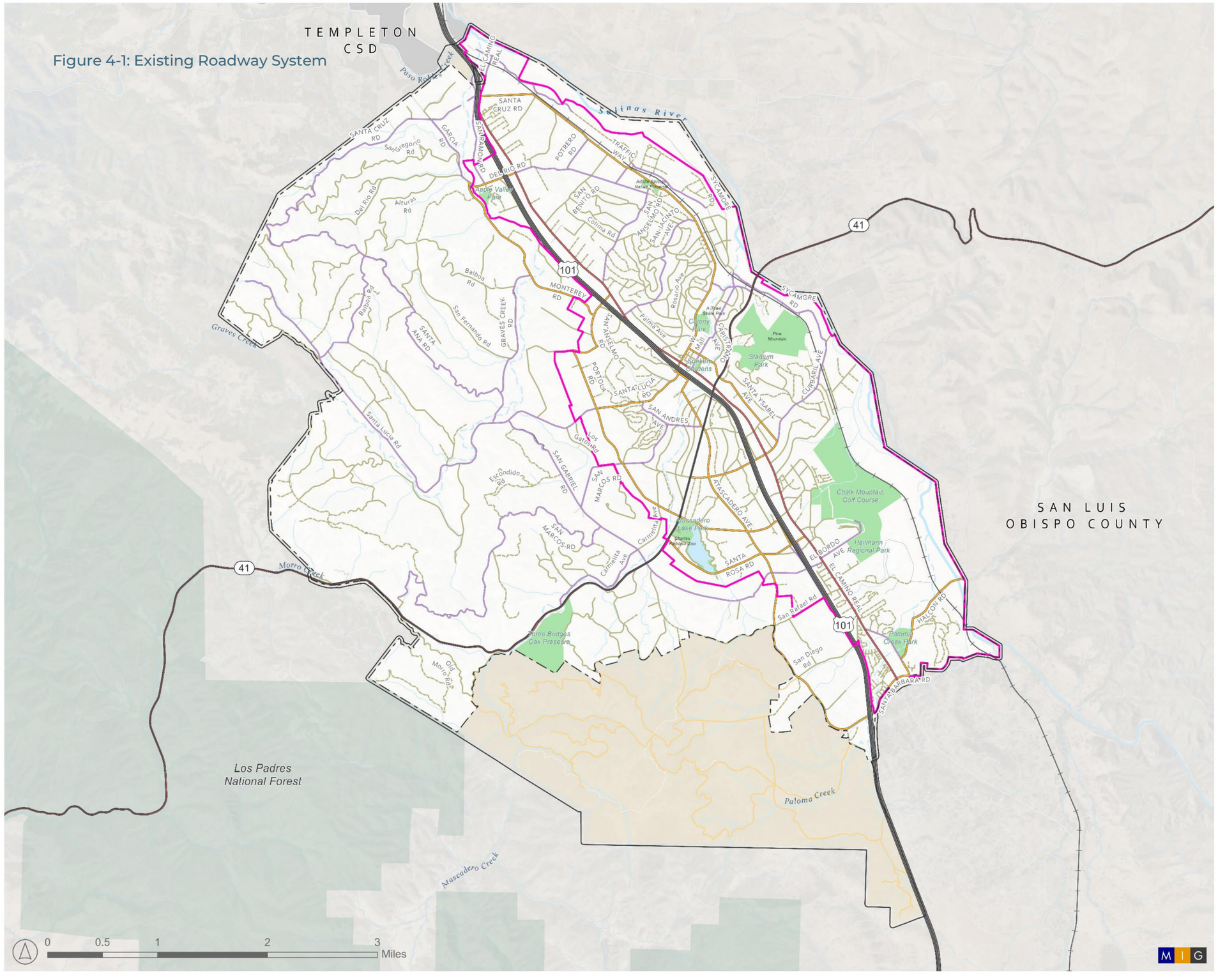

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Figure 4-1
Road Classification

Basemap Features
- Atascadero City Limits
- Atascadero Planning Area
- Urban Services Line
- Rivers + Waterbodies
- Parks + Open Space
- Major Roads + Freeways

Road Classification
- Freeway
- Major Arterial
- Minor Arterial
- Collector
- Local
- Local | Privately Maintained
- Unincorporated

Source(s):
Esri, CA State Open Data, County of San Luis Obispo, City of Atascadero 2023.

4.6 Transit

Introduction

Atascadero is served by local Dial-A-Ride services, a variety of regional transit options, and nationwide bus services.

Dial-A-Ride

Dial-A-Ride provides scheduled, door-to-door transit service via minibus within Atascadero. Service is limited to weekdays from 7:30 AM to 3:30 PM and costs are based on service zones. Fare Zone 1 consists of the city core and higher density neighborhoods. This service is cheaper than in Fare Zone 2; the destinations served are primarily located in the eastern section of the city, serving locations along Highway 101 and east Highway 41. Fare Zone 2 includes more rural residential areas, primarily in the western area of the city where less citizens live. Two other locations in Templeton are included in this zone, Twin Cities Hospital and Medical Offices on Las Tablas Road and Trader Joe's on Vineyard Drive. **Figure 4-2** shows the Dial-A-Ride zones within city limits. Discounted rates are available for seniors, disabled persons, and Medicare card holders. Additionally, all services follow Title IV regulations – which require accommodations for any passenger regardless of identity. Responses to this regulation are emphasized with the use of wheelchair lifts and bike racks on the vehicle.

Regional Transit

The Regional Transit Authority (RTA) Route 9 provides hourly and express fixed-route bus service between San Miguel and San Luis Obispo. It includes stops in Paso Robles, Atascadero, Templeton, and Santa Margarita. RTA Route 9 provides timed stops at Viejo Camino at Bocina Lane and at the Atascadero Transit Center in downtown near the junction of US 101 and SR 41. RTA Route 9 additionally provides numerous untimed stops on El Camino Real as shown in **Figure 4-2**. All buses have ramps and are wheelchair accessible.

Runabout Paratransit is a county-wide ADA paratransit service. All vehicles are wheelchair accessible and can accommodate additional personal items including mobility aids, groceries, and packages. Riders must be ADA certified to qualify.

Ride-On provides specialized regional transportation services. Some of these services are listed below.

- **Veteran Express Shuttle.** Door-to-door transportation for veterans in San Luis Obispo County to local veteran's clinics. Reservations must be made in advance and service is limited to once per month.
- **Medi-Cal & CenCal Shuttle.** Free transportation to medical appointments for individuals who cannot use public transit.
- **Access Shuttle.** A door-to-door transit service in San Luis Obispo County for low-income individuals who do not have access to public transit. Service is limited to two round-trip rides per month. Riders must be eligible to ride.
- **Community Interaction Program**. Door-to-door transportation for riders with developmental disabilities. Rides must be requested in advance and services are limited to after 5:00 PM Monday-Friday and throughout the weekends.
- **Senior Go!** Curb-to-curb transportation within local communities with no set timetables or routes. Vehicles are equipped to support mobility-impaired passengers.

Ride requests can be made within a week of the trip by calling the number provided. Hours are limited to 9 AM – 5 PM weekdays, with a base fare of $2.50 and increases with distance.

Farebox Ratios

A metric to describe transit system financial performance is the farebox ratio. It measures the ratio of passenger fares to total operating costs. As of 2017, the city of Atascadero had a farebox rate of 15%. For context, the overall farebox ratio for the city of SLO Regional Transit Authority, solely for the metro bus, is 24% - according to 2016 data from the Federal Transit Authority (FTA). Reducing operating costs while optimizing the amount of fees passengers pay can help increase the farebox ratio and allow for more funding. However, the City of Atascadero has plans to move away from the farebox ratio and find new metrics that can properly represent transit trends and highlight areas for improvement.

Transit ridership in Atascadero makes up 1.2% of total means of transportation to work. Limited-service routes within the city discourage riders from using the bus system as a consistent, reliable means of transportation. For long-range trips, the SLO RTA Route 9 buses depart the two, timed stops in Atascadero every hour during the week, every three hours on Saturday's, and every four hours of Sunday's. Times that do not coincide with common work and school start times discourage commuters from relying on transit to arrive at their destinations on time. Reliability of service should be considered when measuring the total transit ridership for the system, since that is a strong disincentive for many riders.

Amtrak

Amtrak provides scheduled, national transit service via bus connections within Atascadero. Service is offered through two daily buses, one northward towards San Jose, and one southward towards Los Angeles. Costs are based on the distance between destinations. The only stop within Atascadero is the Transit Center in Downtown Atascadero.

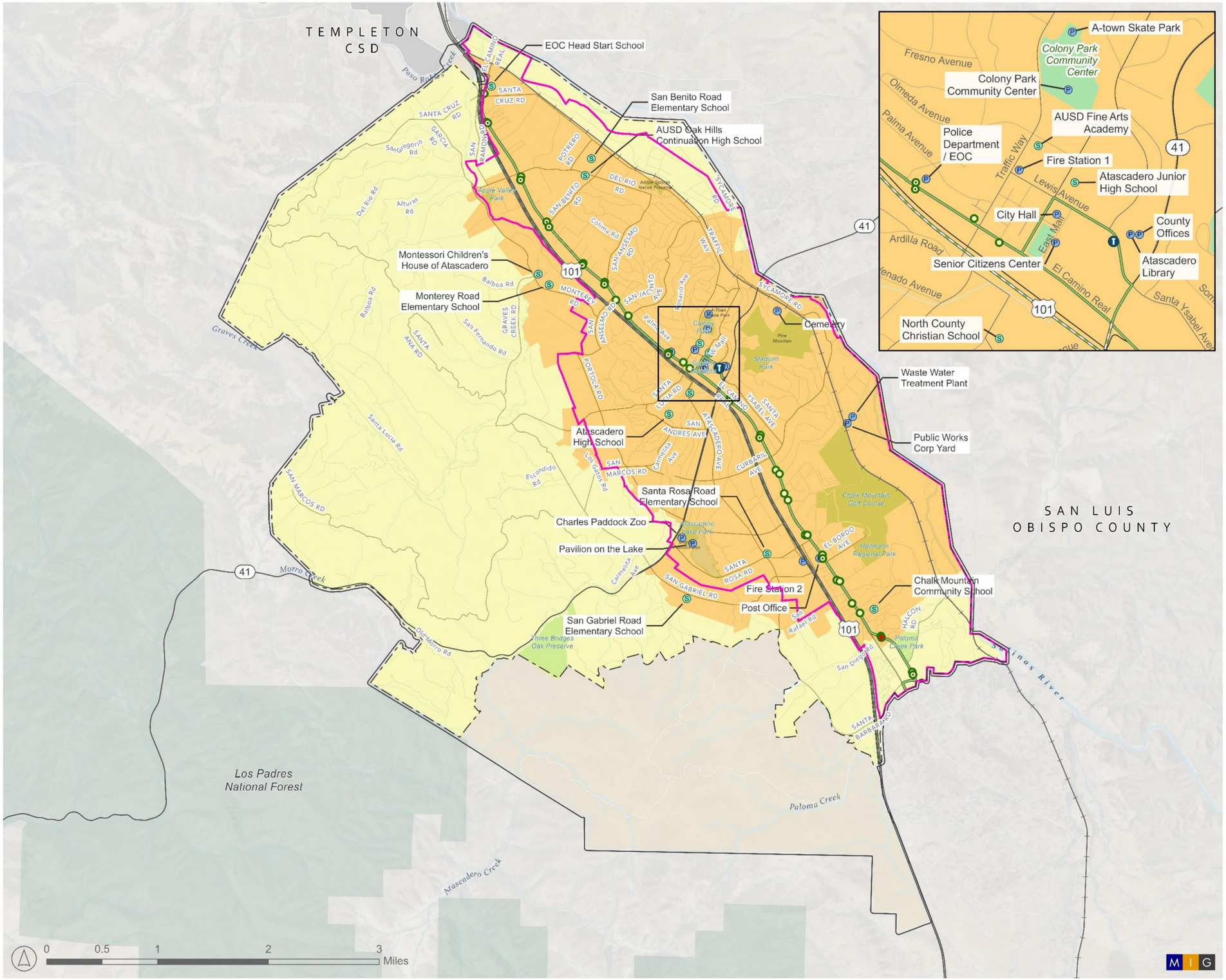

Figure 4-2
Transit Network

Basemap Features
- Atascadero City Limits
- Atascadero Planning Area
- Urban Services Line
- Rivers + Waterbodies
- Parks + Open Space
- Major Roads + Freeways

SLO RTA Bus Stop
- Transfer Hub
- Bus Stop | Single Direction
- Bus Stop | Multi-Direction
- Timed Stop

SLO RTA Route 9
- Daily Route
- Limited Service / Express Trips

Dial-A-Ride Service
- Fare Zone 1
- Fare Zone 2

Public Services
- Public Facility
- School

Source(s):
Esri, CA State Open Data, County of San Luis Obispo, City of Atascadero 2023.

4.7 Bicycle Facilities

Introduction

The Central Coast area has become a popular tourist destination known for its active lifestyle and easy access to some of the most beautiful landscapes in California. Its temperate weather and rolling terrain make it ideal for cycling. Mountain biking and recreational cycling have become popular activities for locals and tourists alike.

Since the previous General Plan was published, the City of Atascadero published a Bicycle Transportation Plan which assesses infrastructure needs and lists policies to improve safety and accessibility to cycling. The Bicycle Transportation Plan outlines steps to promote bicycling and provides recommendations for expanding bicycle facilities in the City.

Figure 4-3 shows the existing bicycle facilities in the city.

Infrastructure

Safety is a key factor in bike ridership and infrastructure plays a critical role in providing safe transportation routes for bicyclists. Bike routes are typically classified based on safety features, such as separation from vehicular traffic. The following bike classification system is commonly used to categorize the various types of bicycle routes:

- **Class I – Separated Right-of-Way.** A dedicated, paved pathway separated from vehicle traffic with minimal vehicular crossings.
- **Class II – Designated Right-of-Way.** Shares the roadway with vehicle traffic but is a designated space separated from traffic by pavement markings.
- **Class III – Shared Right-of-Way.** Shares the roadway with vehicle traffic and is not provided dedicated space for bicycles. Class III bikeways are often delineated with pavement markings or signage.
- **Class IV – Separated Bikeway.** Also known as protected bike lanes or cycletracks, they include horizontal or vertical elements separating the bikeway from vehicular and/or pedestrian paths,

In addition to bikeways, other infrastructure improvements may include crossings, safety features at intersections, lighting, and bike parking at trailheads, transit stops, and throughout the community.

Local

Currently, Atascadero provides primarily Class II bikeways which are typically located along major arterials such as El Camino Real and portions of Traffic Way. **Figure 4-3** shows planned and existing bike routes in Atascadero by type of facility.

Caltrans is also assessing bicycle needs along the State Highways System (SHS). Bicycling is permitted on nearly all main streets and rural intercommunity connectors in the county, indicating that there are several opportunities to improve roadways for alternative transportation options. As part of this assessment, infrastructure needs along the SHS were identified including gaps in the bike network, difficult or infrequent crossings, and stressful segments for bicyclists. Caltrans determined that there were five locations along Highway 101 in need of a bicycle crossing and that the segment along Highway 41 within the city

boundary needed improvement and was the highest priority. These locations are being prioritized for future investments.

Regional

There are several bike trails for recreational cycling along the central coast and SLOCOG is continuing to invest in connections between cities. The Juan Bautisa de Anza Trail ("de Anza Trail") is a 1,200-mile historical trail from Nogales, Arizona to San Francisco, California and runs through the middle of Atascadero. The following trail developments are proposed within the de Anza Trail corridor in Atascadero.

- **Salinas River de Anza Trail.** The Salinas River de Anza Trail is a partially constructed 35-mile trail between Santa Margarita and San Miguel. Six miles of the trail extends through Atascadero along the Salinas River. The Salinas River Master Plan was completed in 2014 and is intended to guide future planning decision-making for municipalities to construct individual components over time.
- **Templeton Atascadero Connector Project.** The County of San Luis Obispo is pursuing the development of a multi-use trail between Templeton and Atascadero. The trail will extend 1 mile between South Main Street in Templeton to Atascadero.

Accessibility

Transit services enable bicyclists to travel further distances. Bike racks are available on all Regional Transit Authority and SLO Transit buses. Additionally, Park & Ride stations are designated locations that provide connections between non-transit and transit modes. There are five Park & Ride lots in Atascadero:

- St. Williams Church
- Highway 41
- Curbaril Avenue
- Santa Rosa Road
- Santa Barbara Road

All Park & Ride lots except for the St. Williams Church location currently provide bike lockers for safe and secure bicycle storage.

Safe Routes to Schools

The Safe Routes to School Program is a nationwide initiative to increase walking and bicycling to school through infrastructure improvements, education, enforcement, and incentives. Increasing walking and cycling to school improves children's physical health, reduces greenhouse gas emissions, and relieves congestion. The regional Safe Routes to School program is managed by SLOCOG Regional Rideshare.

The 2022 SLOCOG Safe Routes to School Family Survey found that roughly 57% of students live less than 2 miles from their school but more than 55% of students arrive by family vehicle. Key concerns with kids bicycling or walking to school include traffic speed, intersection safety, and traffic volume. Routes between schools that have no safe sidewalks or have difficult walking topography disincentivize students or people with mobility issues from walking to and from school. Additionally, locations with no bus service leads to more cars on the road; therefore, the concerns mentioned previously are heightened. Safety improvements are critical to encouraging non-motorized travel for students.

Bicycle and pedestrian infrastructure improvement projects near schools may be funded through SLOCOG. SLOCOG has evaluated the schools within the region for priority investments based on each school's preparedness for investment, internal need based on social determinants, and external need based on demographics and the roadway network. The following schools within the City of Atascadero were evaluated:

- Monterey Road Elementary
- San Benito Elementary
- San Gabriel Elementary
- Santa Rosa Academic Academy
- Atascadero Middle School
- Atascadero High School

The Santa Rosa Academic Academy, Atascadero Middle School, and Atascadero High School were identified to have the greatest need for investment in the region and will be prioritized for capital improvements.

Safety

Bike-involved collisions accounted for nearly 3.5% of total collisions in Atascadero between 2017 and 2021. There were 38 bike-related collisions reported between 2017 and 2021 in Atascadero. 18% of the total collisions resulted in severe injury. Approximately 34% of collisions were due to Automobile Right of Way and another 21% were due to being on the wrong side of the road. Of the 38 collisions, 21 were along El Camino Real.

Children are particularly susceptible to the risk of fatality or severe injury as a bicyclist. The City's Local Roadway Safety Plan (LRSP) notes that Atascadero ranks 34th out of 94 cities of similar size for bicyclist-related collisions that resulted in a fatality or severe injury for bicyclists under the age of 15. Bicyclist Safety has been identified as one of the key emphasis areas in the Safety Plan. Ardilla Road and Atascadero Avenue between Traffic Way and Atascadero High School have been prioritized in the LRSP for bicycle safety improvements to improve connections for bicyclists between the school and the nearby downtown area.

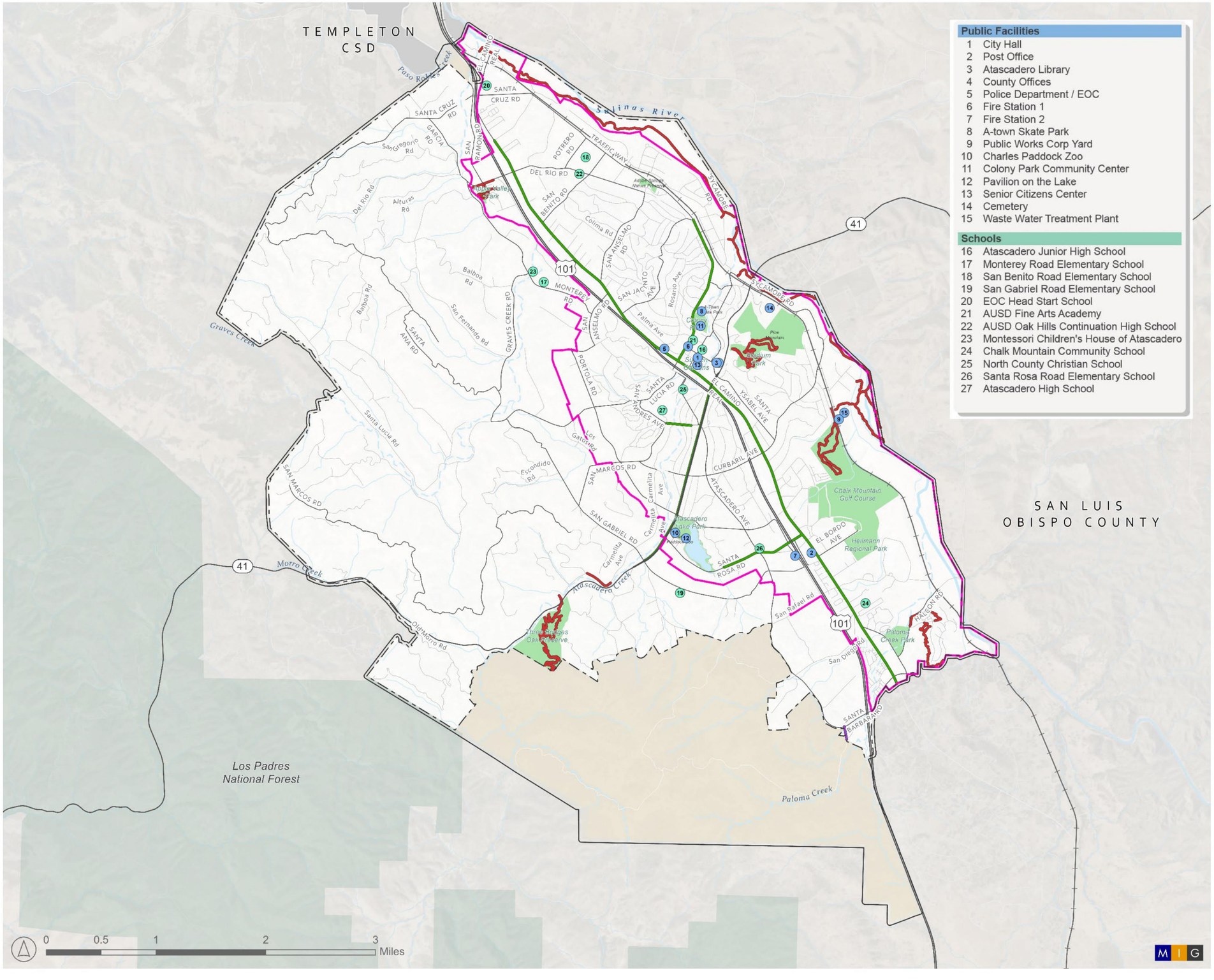

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Figure 4-3
Bike and Trail Facilities

Basemap Features
- Atascadero City Limits
- Atascadero Planning Area
- Urban Services Line
- Rivers + Waterbodies
- Parks + Open Space
- Major Roads + Freeways

Bike and Trail Routes
- Multi-Use
- Class 1
- Class 2
- Class 3

Public Services
- Public Facility
- School

Source(s):
Esri, CA State Open Data, County of San Luis Obispo, City of Atascadero 2023.

4.8 Pedestrian Facilities

Introduction

The following section summarizes pedestrian issues and provides initial direction and policy that can ensure pedestrian movement in the city is safe, convenient, and pleasant, in recognition that pedestrian travel is an important component of the transportation system. Bikeway improvements often are accompanied by pedestrian network improvements. Recent local improvements have produced safe facilities for pedestrians and bicyclists in the community.

Safety

Pedestrian-involved collisions accounted for nearly 2.5% of the total collisions in Atascadero between 2017 and 2021. There were 28 pedestrian-related collisions reported between 2017 and 2021 in Atascadero. Four collisions resulted in severe injury and one crash resulted in fatality due to Driving Under the Influence. Approximately 32% of collisions were due to pedestrian right-of-way and another 32 were due to pedestrian violations. Pedestrian collisions are concentrated near downtown and the Highway 41 and El Camino Real corridors where pedestrian activity is the greatest. Of the 28 pedestrian involved collisions, 11 were along El Camino Real.

Children are at the greatest risk of fatality or injury as pedestrians. The City's Local Roadway Safety Plan notes that Atascadero ranks 10th out of 94 cities of similar size for pedestrian collisions that result in a fatality or severe injury for pedestrians under 15 years of age. Pedestrian Safety has been identified as one of the key emphasis areas in the Safety Plan. Installing a pedestrian crossing signal on El Camino Real at East Mall has been listed as a priority project to enhance pedestrian safety.

Infrastructure

Pedestrian infrastructure may include pathways, crossings, sidewalks, walkable shoulders, pedestrian overcrossings, and lighting.

4.9 Freight and Goods Movement

Introduction

This section summarizes the movement of goods (as distinct from people) by all modes to, from, within, and through Atascadero. Much of the transportation infrastructure in Atascadero serves the movement of both people and freight. Managing urban goods movement serves to enhance economic development, reduce traffic congestion, and contribute to other social goals. Adverse effects such as traffic accidents, noise, vibration, emissions, and truck intrusion into residential areas are concerns that must be addressed.

Railroads

Union Pacific (UPRR) operates mainline rail freight service between the San Francisco Bay Area and Southern California along the Coast Line. Through Atascadero, the Coast Line runs generally north-south, parallel to and west of the Salinas River. There are three at-grade railway crossings and two grade-separated undercrossing at Atascadero Creek and State Route 41.

Freeways

US 101, running north-south through central Atascadero serves as the main thoroughfare for the movement of commercial goods by automobile to and from the city. The highway acts as the most efficient connection between the city and the San Francisco Bay Area to the north, and the Los Angeles Area to the south.

SR 46 is the primary east-west highway for freight movement via truck on the Central Coast. To the north, I-80 is the closest similar route and to the south, I-10. This route is located in Paso Robles, approximately 20 minutes to the north of Atascadero.

Interstate 5 is the predominant route in California for transporting freight north-south; it connects from the Mexico-California border to the Washington-Canada border. It does not route directly through the city of Atascadero. However, Highway 41 connects with SR-46 in Shandon, which then connects with I-5 just outside of Kettleman City. When Interstate 5 is closed US 101 becomes a substitute route for many trips.

4.10 Aviation

Introduction

Atascadero does not contain any airports within its city limits but is served by airports in neighboring county communities.

San Luis Obispo County Regional Airport

The San Luis Obispo County Regional Airport is approximately 20 miles south of the city, in San Luis Obispo is a regional hub for passenger air travel. The airport is served by Alaska Airlines, American Airlines, and United Airlines and offers non-stop flights to Seattle, San Diego, Portland, Phoenix, Dallas-Fort Worth, Denver, San Francisco, and Los Angeles.

Paso Robles Municipal Airport

The Paso Robles Municipal Airport is approximately 16 miles north of the city, in Paso Robles. While no public passenger flights are offered from the airport, the airport serves private charter flights and seeks to become a space port.

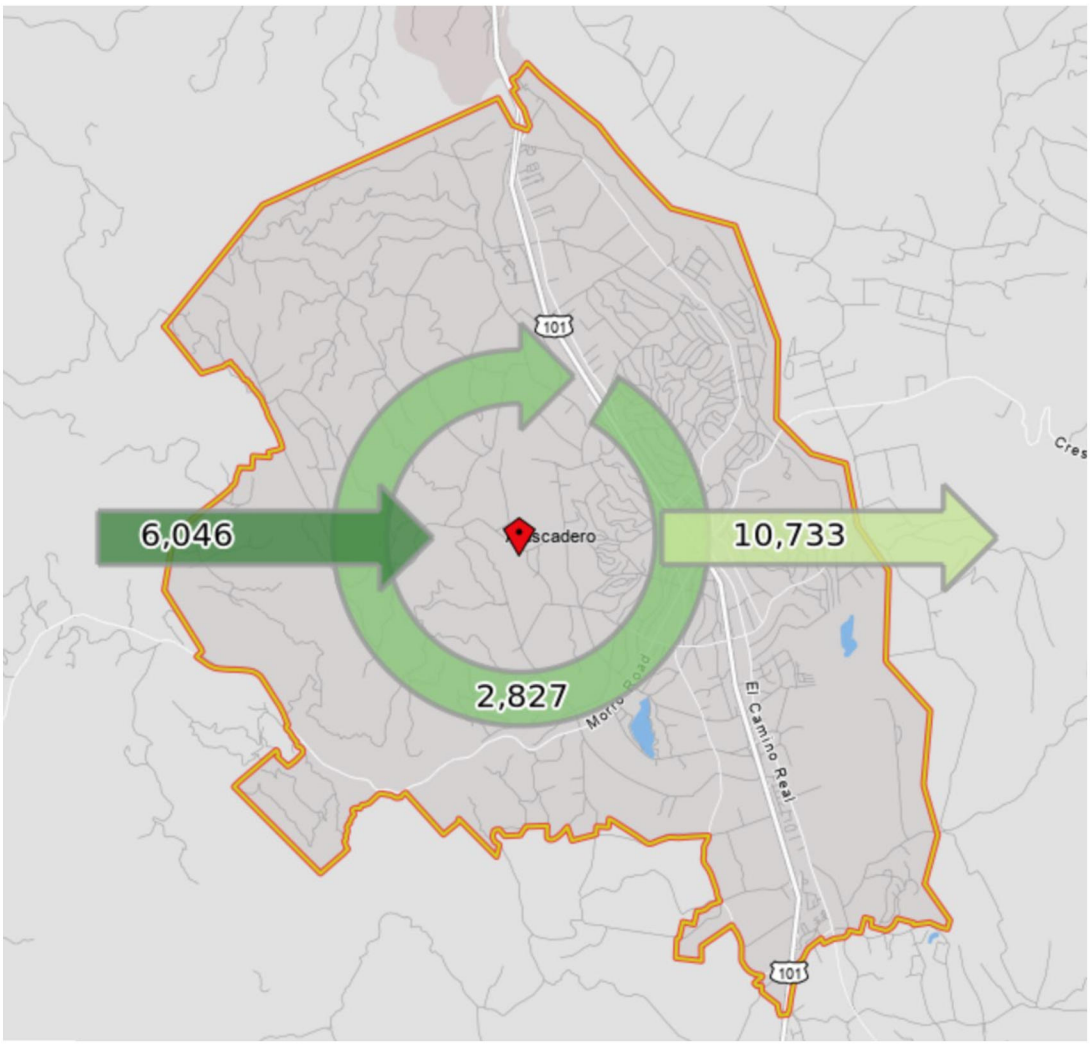
4.11 Travel Characteristics and Commute Patterns

Introduction

Atascadero is the largest city in the county by area and is home to over 29,000 residents, ranking third largest in SLO county by population. It is centrally located between Paso Robles, Morro Bay, and San Luis Obispo and provides housing options that are generally less costly than some of its neighboring cities. The proximity to job centers and accessibility to transportation corridors make Atascadero an ideal location along the Central Coast.

Employees that must travel to work outside of the city make up the largest segment of the commuting population in Atascadero. Over 10,700 Atascadero residents were employed outside of the city in 2019, while only 6,000 employees traveled to Atascadero for work. Transportation is critical to the economic wellness of Atascadero's residents and employees.

Figure 4-4: Atascadero Commute Inflow and Outflow (2019 Census On the Map)



Commutes

Atascadero accounts for a significant portion of travel in the region at approximately 10% of the daily vehicle miles traveled (VMT) in the county in 2017. Data from SLOCOG shows that daily VMT for other incorporated cities is about 13% for the city of SLO, 12% for Paso Robles, and 2% for Pismo Beach. The COVID-19 crisis drastically changed travel patterns across the nation. Commute trips plummeted as workers transitioned to remote working options. The increased flexibility of remote working options enabled irregular travel patterns, such as errands in the middle of the workday. Due to the unprecedented nature of the pandemic's impact on transportation, travel patterns were derived from information prior to 2020 to reflect typical travel behavior more appropriately.

Mode Choice

Atascadero travel is predominated by personal vehicle. Data from the 2019 ACS show that over 81% of commuters (excluding those who worked remotely) in Atascadero traveled to

work by driving alone. An additional 11% of commuters carpooled via car, truck, or van. Rates of vehicle usage for commutes align closely with rates for the state.

Alternative transportation options were more variable when compared to statewide rates. Nearly 1.5% of commuters used public transportation, which is slightly lower than the 2.6% statewide public transportation rates. However, roughly 4.5% of commuters traveled to work by walking, a considerably larger amount compared to the statewide rates of 2.7%. Other means of transportation, including bicycling, taxis, and motorcycles accounted for only 1.6% of total commuting trips, roughly half of the statewide average. The mode choice split demonstrates a preference for walking and indicates that alternative modes may be less popular due to accessibility constraints.

SLOCOG determined characteristics for disadvantaged communities in the region. These traits include factors such as racial or ethnic minorities, disability status, household income, households with no vehicle available, and renter affordability. Based on this definition, SLOCOG did not designate any communities as "disadvantaged," but rather applied a score for each census tract based on the above characteristics. Many communities in Atascadero have a score of about 130/350, with the areas roughly parallel and east of El Camino Real showing the highest scores. Although they are not deemed disadvantaged, many local communities do not have the resources to have as many options as other regional communities. For example, preference for walking – as described in the above paragraph – may be due to service workers not having alternative means of transportation or the transit times do not align with their schedule. Preference then becomes necessity, and mode choices must be reevaluated with assumptions in mind.

Travel Times

The 2019 American Community Survey (ACS) shows that most commutes (excluding those who work remotely) in Atascadero are typically under 35 minutes. Approximately 87% of commutes were under 35 minutes and 66% were under 25 minutes.

The lack of local public transit options means that transit is rarely used for short-distance trips. Over 99% of transit trips have travel times greater than 20 minutes, and 56% of all transit trips have travel times greater than 30 minutes.

Walking is exceptionally popular for short-distance trips. Nearly a third of all walking trips are for commute times that are less than 10 minutes. Walking remains a popular option for travel times up to 25 minutes. Although 15% of walking commutes were 30-35 minutes, walking to work ceases when travel times are over 35 minutes. When considering future pedestrian improvements, it will be important to consider how improving connectivity and accessibility may reduce travel times and promote walking for work-related trips.

There are twice as many commuters that drive alone for short trips compared to statewide rates. In Atascadero, 21% of commute trips where travelers drive alone are less than 10 minutes in length, whereas only 10% of commuters that drive alone are traveling for less than 10 minutes statewide. This data highlights the potential to reduce vehicle dependency by investing in multimodal transportation, particularly for short-distance trips.

Vehicle Availability

Most households in Atascadero have at least one vehicle available for commuting. Approximately 4.3% of all households do not have a vehicle available at all, and 1.6% of

commuters do not have a vehicle available for commuting. Commuters without a vehicle must rely on alternative modes of transportation. About 16% of commuters that take public transportation do not have a vehicle at home.

Bike Counts

A regional effort to collect pedestrian and bicycle count data was conducted in 2018 and 2019 by SLOCOG. The study found that walking was generally favored over bicycling in the region, particularly in urban areas and at schools. Counts show that there were over 430 trips per day and over 131,000 trips per year through the tunnel connecting Atascadero High School Tunnel under US 101 to East Mall.

The 2013 SLOCOG Bike Barriers Survey Analysis Report found that aggressive driving and speeding were major barriers to bicycling. Infrastructure-related barriers, including gaps in the bike network and dedicated bike lanes, were not perceived to be as large of barriers. And distance was a divisive barrier, with the largest proportion of respondents stating it was not a barrier, but the second largest response was that it was a major barrier. These results of the survey show that distance is not a barrier for a significant portion of those who travel to and throughout Atascadero, but that, for some, distance is a limiting factor, possibly for physical ability, interest in physical exercise, or topography in certain areas.

Narrow overpasses also create a barrier for many bicyclists since they often carry higher vehicle volumes in close proximity to cyclists. Focusing on infrastructure modifications and improvements could increase safety and help balance vehicular needs with other modal needs.

4.12 Network Performance and Safety

Introduction

Atascadero occupies a large area with extensive roadway miles for its population size. Commercial areas are mostly spread along the El Camino Real and Morro Road (SR 41) corridors. The City's current Circulation Element specifies that level of service (LOS) C or better operations shall be maintained as the standard at all intersections and on all arterial and collector roads. Upon City Council approval, LOS D is acceptable where residences are not directly impacted and improvements to meet the City's standard would be prohibitively costly or disruptive.

Figure 4-5 shows daily traffic volumes along roadway segments throughout the city as well as intersection levels of service (LOS) during peak periods. **Table 4-1** summarizes the weekday AM and PM peak hour LOS at the study intersections for locations with data collected in 2022; refer to **Appendix A** for a more comprehensive list using data from other recent studies.

Table 4-1: Existing Intersection Levels of Service

Existing Intersection Levels of Service				
Intersection	**Control**	**Peak Hour**	**Delay[1]**	**LOS**
1. El Camino Real/San Benito Rd	TWSC	AM	2.5 (12.4)	- (B)

Existing Intersection Levels of Service				
Intersection	**Control**	**Peak Hour**	**Delay[1]**	**LOS**
		PM	1.1 (11.8)	- (B)
2. El Camino Real/San Anselmo Rd (East)	TWSC	AM	5.5 (17.2)	- (C)
		PM	2.6 (14.6)	- (B)
3. El Camino Real/San Anselmo Rd (West)	Signal	AM	19.2	B
		PM	17.9	B
4. El Camino Real/Curbaril Ave[2]	Signal	AM	32.5	C
		PM	**36.2**	**D**
5. El Camino Real/Santa Rosa Rd[2]	Signal	AM	18.5	B
		PM	21.4	C
6. El Camino Real/San Gabriel Rd	TWSC	AM	1.0 (14.8)	- (B)
		PM	2.0 (19.0)	- (C)
7. El Camino Real/Santa Barbara Rd	Signal	AM	15.5	B
		PM	12.3	B
8. Traffic Wy/Ardilla Ave/US 101 SB Ramps[3]	TWSC	AM	**20.2 (79.5)**	**F**
		PM	5.6 (15.1)	C
9. Traffic Wy/Via Ave	TWSC	AM	3.4 (11.8)	- (B)
		PM	3.4 (11.0)	- (B)
10. SR 41/Curbaril Ave	Signal	AM	10.4	B
		PM	10.3	B
11. SR 41/Atascadero Ave[2]	Signal	AM	**41.6**	**D**
		PM	25.7	C
12. SR 41/Mercedes Ave	TWSC	AM	2.5 (13.0)	- (B)
		PM	2.5 (17.1)	- (C)
13. Atascadero Ave/Santa Rosa Rd	AWSC	AM	11.7	B
		PM	8.8	A

1 HCM 6th average control delay in seconds per vehicle. For two-way stop controlled (TWSC) intersections the worst approach's delay is reported in parentheses next to the overall delay.
2 Intersections were based on HCM 2000 methodology.
3 Intersection was analyzed using Sim Traffic due to non-standard geometry.
Unacceptable operations are shown in bold text.

The study intersections operate at LOS C or better with the following exceptions:

- #4 El Camino Real/Curbaril Avenue operates at LOS D during the PM peak hour.
- #8 Traffic Way/Ardilla Avenue/US 101 SB Ramps operates at LOS F during the AM peak hour. Multiple roadway curves and closely spaced intersections make this area difficult for drivers to navigate, resulting in the highest segment collision rate in the city. Potential improvements include signage improvements, additional stop signs, and a roundabout.
- #11 SR 41/Atascadero Avenue operates at LOS D during the AM peak hour. The skewed intersection requires split phasing on the Atascadero Road approaches which causes delays, exacerbated by notable volume peaking when school starts.

Table 4-2 shows queueing on key movements at the study intersections.

Table 4-2: Existing Intersection Queues Existing Intersection Queues

Intersection	Movement	Storage Length (ft)	Peak Hour	95th %ile Queue (ft)[1]
3. El Camino Real/San Anselmo Rd (West)	NBL	125	AM	**173**
			PM	**204**
	SBL	60	AM	42
			PM	34
4. El Camino Real/Curbaril Ave	NBL	125	AM	**#184**
			PM	**238**
	SBL	125	AM	26
			PM	#58
5. El Camino Real/Santa Rosa Rd	NBL	105	AM	**306**
			PM	**#380**
	SBL	105	AM	6
			PM	0
7. El Camino Real/Santa Barbara Rd	NBL	120	AM	120
			PM	72
	SBL	160	AM	13
			PM	18
10. SR 41/Curbaril Ave	NBL	200	AM	13
			PM	16
	SBL	200	AM	37
			PM	49
11. SR 41/Atascadero Ave	NBL	150	AM	91
			PM	68
	SBL	200	AM	159

Intersection	Movement	Storage Length (ft)	Peak Hour	95th %ile Queue (ft)[1]
			PM	79

1 Queue length in feet that would not be exceeded 95 percent of the time.
 # 95th percentile volume exceeds capacity, queue may be longer.
m Volume for 95th percentile queue is metered by upstream signal.
Bold indicates queue length longer than storage length.

The following queue issues are noted:

- #3 El Camino Real/San Anselmo Road West queueing exceeds storage for the northbound left turn movement during both AM and PM peak hours.
- #4 EL Camino Real/Curbaril Avenue queueing exceeds storage for the northbound left turn movement during both AM and PM peak hours.
- #5 EL Camino Real/Santa Rosa Road queueing exceeds storage for the northbound left turn movement during both AM and PM peak hours.

Safety

Injury and fatal collisions from the most recent ten years are shown in **Figure 4-6**. Between 2015 and 2019, more than one-third of collisions in the city had a primary collision factor of unsafe speed, ranking 13th highest in the state out of 94 similar-sized cities. Auto right-of-way violations were the second highest cause of collisions, constituting 15% of all collisions. Driving under the influence (DUI) and improper turning were ranked third and fourth, respectively.

There were 145 collisions involving cyclists or pedestrians over the past ten years, the majority of which occurred along El Camino Real and Morro Road (SR 41). The City's Local Road Safety Plan provides recommendations for 20 safety hot spots as well as systemic improvements to address collisions associated with lane departure, unsafe speed, traffic signals, lighting, DUI, pedestrian, and bicycle safety.

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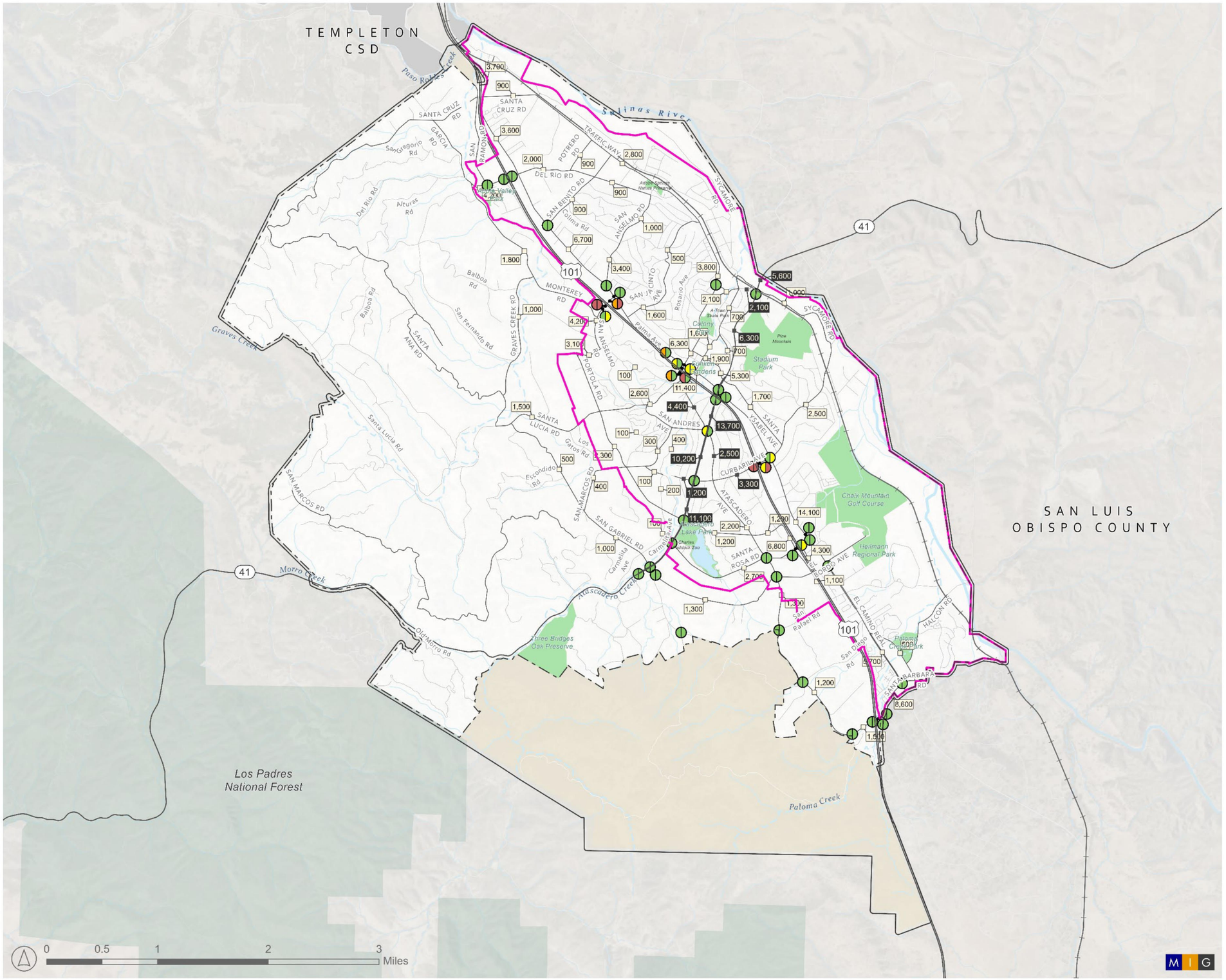
Figure 4-5
Traffic Volumes and LOS



Basemap Features
- Atascadero City Limits
- Atascadero Planning Area
- Urban Services Line
- Rivers + Waterbodies
- Parks + Open Space
- Major Roads + Freeways

Intersection Level of Service

AM / PM — Service Grade: A, B, C; D; E; F

Daily Traffic Volumes
- 2019 Traffic Volume
- 2022 Traffic Volume

Source(s):
Esri, CA State Open Data, County of San Luis Obispo, City of Atascadero 2023.

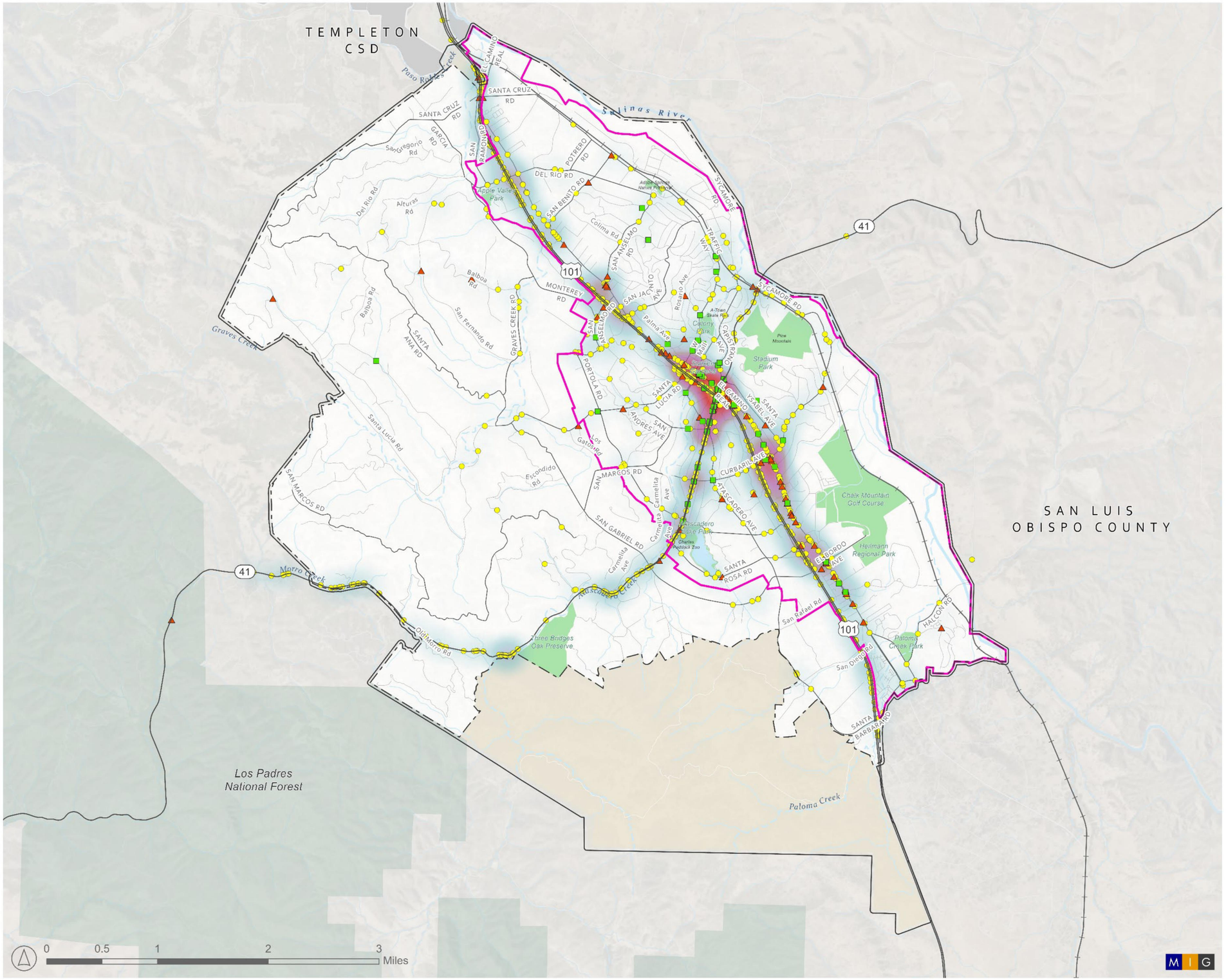


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Figure 4-6
Collision Density

Basemap Features
- Atascadero City Limits
- Atascadero Planning Area
- Urban Services Line
- Rivers + Waterbodies
- Parks + Open Space
- Major Roads + Freeways

Collision Type
- Pedestrian Collision
- Bike Collision
- Vehicle Collision

Heat Map from All Collisions
- Sparse
- Dense

Source(s):
Esri, CA State Open Data, County of San Luis Obispo, City of Atascadero 2023.

4.13 Appendix A: Existing Intersection Levels of Service

Existing Intersection Levels of Service				
Intersection	**Control**	**Peak Hour**	**Delay[1]**	**LOS**
El Camino Real/San Benito Rd	TWSC	AM	2.5 (12.4)	- (B)
		PM	1.1 (11.8)	- (B)
El Camino Real/San Anselmo Rd (East)	TWSC	AM	5.5 (17.2)	- (C)
		PM	2.6 (14.6)	- (B)
El Camino Real/San Anselmo Rd (West)	Signal	AM	29.8	C
		PM	27.8	C
El Camino Real/Curbaril Ave[2]	Signal	AM	**38.5**	**D**
		PM	**43.7**	**D**
El Camino Real/Santa Rosa Rd[2]	Signal	AM	17.6 (20.6)	- (C)
		PM	19.3 (24.8)	- (C)
El Camino Real/San Gabriel Rd	TWSC	AM	1.0 (14.8)	- (B)
		PM	2.0 (19.0)	- (C)
El Camino Real/Santa Barbara Rd	Signal	AM	16.2	B
		PM	15.3	B
Traffic Wy/US 101 SB Ramps[3]	TWSC	AM	**69.3 (>120)**	**F**
		PM	**19.1 (38.4)**	**- (E)**
Traffic Wy/Via Ave	TWSC	AM	3.4 (11.8)	- (B)
		PM	3.4 (11.0)	- (B)
SR 41/Curbaril Ave	Signal	AM	10.4	B
		PM	10.3	B
SR 41/Atascadero Ave[2]	Signal	AM	18.4	B
		PM	15.1	B
SR 41/Mercedes Ave	TWSC	AM	2.5 (13.0)	- (B)
		PM	2.5 (17.1)	- (C)
Atascadero Ave/Santa Rosa Rd	AWSC	AM	10.9	B
		PM	8.8	A
Santa Barbara Rd/US 101 NB Ramps	TWSC	AM	6.4 (11.9)	- (B)
		PM	8.3 (14.9)	- (B)
Santa Barbara Rd/US 101 SB Ramps	AWSC	AM	10.4	C
		PM	10.1	B
Santa Barbara Rd/San Antonio Rd	SSS	AM	9.8	C
		PM	7.5	B
Santa Rosa Rd/US 101 SB Ramps	Signal	AM	13.3	C
		PM	13.5	C
Santa Rosa Rd/US 101 NB Ramps	Signal	AM	14.9	C
		PM	18.7	D
El Camino Real/US 101 NB Ramps at SR 41	Signal	AM	15.5	B
		PM	21.0	C
SR 41/El Camino Real	Signal	AM	18.1	B
		PM	20.0	B
SR 41/US 101 SB Ramps	Signal	AM	15.6	B
		PM	14.6	B
SR 41/Portola Rd	Signal	AM	10.6	B
		PM	10.4	B
SR 41/Santa Rosa Rd	SSS	AM	9.1	C
		PM	8.0	B
SR 41/San Gabriel Rd	Signal	AM	16.2	B
		PM	9.7	A
SR 41/Old Morro Rd	SSS	AM	5.8	B
		PM	5.4	B
San Gabriel Rd/San Rafael Rd	SSS	AM	7.3	B
		PM	5.4	A
San Rafael Rd/San Carlos Rd	Unsig	AM	4.7 (8.5)	- (A)
		PM	4.7 (8.6)	- (A)

Existing Intersection Levels of Service				
Intersection	**Control**	**Peak Hour**	**Delay[1]**	**LOS**
Atascadero Ave/San Gabriel Rd	AWSC	AM	9.1	A
		PM	7.6	A
Atascadero Ave/San Rafael Rd	SSS	AM	5.0	A
		PM	4.5	A
Atascadero Ave/San Diego Rd	SSS	AM	0.0	A
		PM	0.4	A
Atascadero Ave/Santa Barbara Rd	SSS	AM	5.2	A
		PM	5.0	A
Curbaril Ave/US 101 SB Ramps	AWSC	AM	**62.8 (>120)**	**F**
		PM	**58.7 (>120)**	**F**
Curbaril Ave/US 101 NB Ramps	SSS	AM	**12.7 (25.9)**	**- (D)**
		PM	**25.1 (55.1)**	**F**
Traffic Wy/US 101 NB Ramps[3]	SSS	AM	**16.9 (28.8)**	**- (D)**
		PM	14.7 (22.2)	- (C)
Traffic Wy/Ardilla Ave	SSS	AM	**20.4 (39.6)**	**- (E)**
		PM	8.9 (17.2)	- (C)
Traffic Wy/El Camino Real	Signal	AM	**46.2**	**D**
		PM	**37.9**	**D**
El Camino Real/US 101 NB Ramps-Rosario Ave	SSS	AM	**15.6 (39.1)**	**- (E)**
		PM	10.2 (21.4)	- (C)
San Anselmo Ave/US 101 SB Ramps	TWSC	AM	**46.3 (111.8)**	**F**
		PM	**42.7 (96.1)**	**F**
San Anselmo Ave/US 101 NB Ramps	SSS	AM	**17.8 (35.0)**	**- (E)**
		PM	**29.7 (58.5)**	**F**
San Anselmo Ave/San Pablo Road	Unsig	AM	11.1 (24.2)	- (C)
		PM	**11.5 (26.1)**	**- (D)**
Del Rio Rd/US 101 SB Ramps	Signal	AM	21.2	C
		PM	21.8	C
Del Rio Rd/US 101 NB Ramps	Signal	AM	16.3	B
		PM	20.0	B
Del Rio Rd/Ramona Rd	SSS	AM	6.3	B
		PM	5.8	A
El Camino Real/Principal Ave	SSS	AM	1.0 (11.7)	- (B)
		PM	0.7 (13.6)	- (B)

4.14 Sources

Reports and Documents

City of Atascadero Bicycle Transportation Plan, 2010.

City of Atascadero Local Roadway Safety Plan, prepared by W-Trans and CCTC, 2022.

City of Atascadero General Plan, July 2016.

City of Atascadero Interchange Operational Improvement Study prepared by W-Trans, 2008.

City of Atascadero Parking Utilization and Management Study prepared by Carl Walker, Inc., 2006.

San Luis Obispo Council of Governments. Administrative Draft 2023 Regional Transportation Plan.

Data

American Community Survey, 2021. US Census Bureau.

Persons Contacted

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Ryan Hayes, Deputy Director of Public Works

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4.15 Acronyms and Key Terms

LOS: Level of Service

VMT: Vehicle Miles Traveled

SLOCOG: San Luis Obispo Council of Governments

APPENDIX J

Transportation CEQA Memorandum

Central Coast Transportation Consulting
Traffic Engineering & Transportation Planning

MEMORANDUM

Date: July 11, 2025

To: Dan Amsden, MIG
Emily Creel, SWCA

From: Joe Fernandez and Michelle Matson, CCTC

Subject: Atascadero General Plan Update- Transportation CEQA

This memorandum evaluates potential mobility impacts of the Atascadero General Plan Update (AGPU) including vehicle miles traveled (VMT) in accordance with state law as well as level of service (LOS) in accordance with current City policies.

SUMMARY

The AGPU includes a variety of goals, policies, and programs that focus land use growth on existing mixed-use corridors, an approach that has been shown to be VMT-efficient by increasing density, the diversity of land uses, and support of non-auto travel options. As a result, the updated General Plan is expected to produce lower levels of VMT per resident and employee than the current General Plan.

The City of Atascadero currently generates VMT at rates above the regional average. While the new plan improves VMT performance, it remains above the regional average.

The current General Plan includes a local policy striving to maintain LOS C or better operations on City streets during the peak 15-minute period of the peak hours of travel. Given infrastructure funding constraints, it is financially infeasible to increase roadway capacity to meet this standard at all locations in the City during all time periods. Occasional traffic congestion is expected to exceed this threshold, typically for a short duration and usually associated with traffic peaks related to schools or special events.

ANALYSIS APPROACH

Travel forecasts are typically prepared using Travel Demand Models (TDM) which use land use and roadway network inputs to forecast future travel. The San Luis Obispo Council of Governments (SLOCOG) develops and maintains the SLOCOG TDM, which was used to estimate VMT and forecast traffic levels.

The SLOCOG TDM uses different land use categories than the land use model used in the AGPU. The AGPU land use model growth was allocated into the SLOCOG TDM Traffic Analysis Zone structure, then the land uses were apportioned into the TDM land use categories to evaluate the AGPU.

The AGPU land use buildout reflects the maximum development potential in the City. SLOCOG TDM land use forecasts are typically discounted from this level to match overall regional growth forecasts, which reflect typical growth rates that rarely reach maximum development potential on all parcels. The AGPU growth forecasts as evaluated herein reflect more growth in the City (and therefore the region) than SLOCOG's original forecasts. This results in conservatively high traffic and regional VMT forecasts.

The State Office of Planning and Research (OPR) publishes General Plan Guidelines that note that "When a new general plan or revision is being considered, the EIR must evaluate the proposed plans or revision's effects

on both the physical environment envisioned by an adopted plan." Accordingly, this analysis compares the current general plan to the proposed general plan.

VEHICLE MILES TRAVELED

State law identifies vehicle miles traveled (VMT) as the appropriate metric to evaluate transportation impacts under the California Environmental Quality Act (CEQA). VMT quantifies the total amount of vehicle miles driven within a certain area. A car driving one mile generates one VMT.

OPR recommends thresholds for evaluating transportation VMT impacts associated with land use plans, which are applied herein since the City has not adopted VMT thresholds. OPR's recommends that land use plans be evaluated based on the aggregate VMT effects of the plan.

Table 1 summarizes the AGPU's effect on regional VMT:

Table 1: Regional VMT Summary

Regional VMT Summary			
Scenario->	**Baseline (2015)**	**Current General Plan Buildout (2045)**	**Proposed General Plan Buildout (2045)**
Total Regional VMT[1]	8,796,917	11,203,335	11,348,867
Population	271,859	302,069	307,885
Total Employment	115,190	135,908	138,978
Service Population (Population+Employees)	387,049	437,977	446,863
Regional VMT/Service Population	*22.73*	*25.58*	*25.40*
Residential VMT[1]	4,040,055	4,398,052	4,474,989
Residential VMT/Population	*14.86*	*14.56*	*14.53*
Commute VMT[1]	1,367,961	1,474,183	1,515,782
Commute VMT/Employee	*11.88*	*10.85*	*10.91*

1. Total regional VMT reflects daily automobile VMT within the San Luis Obispo County region. Residential VMT reflects all home-based productions. Commute VMT reflects home-based work attractions.
Source: SLOCOG TDM, CCTC, 2025.

The regional VMT analysis shows that:

- Total regional VMT increases with the AGPU. However, as previously noted this reflects an increase in overall regional population and employment, so total regional VMT does not provide an 'apples to apples' comparison between the current and proposed plans. A more appropriate metric is an efficiency metric of regional VMT per service population, discussed below.
- Service population is defined here as the sum of population and employment. On a regional basis the AGPU produces lower regional VMT per service population than the current plan. This indicates that the AGPU is more VMT-efficient than the current plan.
- Baseline residential VMT per capita in the region is 14.86. OPR recommends a threshold of 15 percent below the regional average for this metric, which captures trips from homes. This threshold corresponds to 12.63 residential VMT per capita.
- Baseline commute VMT per employee in the region is 11.88. OPR recommends a threshold of 15 percent below the regional average for this metric, which captures trips to work. This threshold corresponds to 10.09 commute VMT per employee.
- Travel demand models produce planning-level forecasts of travel primarily based on land use and network inputs. While the SLOCOG model offers some sensitivity to urban design it is a coarse tool

that does not fully reflect the VMT-reducing effects of compact, mixed-use urban design supported by the AGPU.

In summary, the AGPU will be more VMT-efficient on a regional basis than the current General Plan as it focuses growth in areas with a mix of uses, more travel options, and at levels that are more supportive of transit use. **Table 2** summarizes the VMT analysis within the City of Atascadero:

Table 2: Atascadero VMT Summary

Atascadero VMT Summary			
Scenario->	**Baseline (2015)**	**Current General Plan Buildout (2045)**	**Proposed General Plan Buildout (2045)**
Population	29,906	31,352	37,176
Total Employment	8,985	10,315	13,386
Residential VMT	556,552	542,924	602,702
Residential VMT/Population	*18.61*	*17.32*	*16.21*
Commute VMT	125,563	132,501	166,441
Commute VMT/Employees	*13.98*	*12.85*	*12.43*

1. Residential VMT reflects all home-based productions. Commute VMT reflects home-based work attractions.
Source: SLOCOG TDM, CCTC, 2025.

The Atascadero VMT analysis shows that:

- Residential VMT per capita is above OPR's recommended threshold (12.63) for all of the evaluated scenarios. The AGPU produces lower residential VMT per capita than the existing baseline and current plan.
- Commute VMT per employee is above OPR's recommended threshold (10.09) for all of the evaluated scenarios. The AGPU produces lower commute VMT per employee than the existing baseline and current plan.

In summary, the City of Atascadero generates residential and employment-based VMT at levels that are above OPR's recommended thresholds. The City's large geographic area and low-density development patterns require longer vehicle trips and reduce non-auto travel options. The AGPU focuses growth in more VMT-efficient areas at higher densities and with more travel options, so it produces less VMT per capita and per employee than the current General Plan.

TRAFFIC OPERATIONS

This section evaluates traffic operations under existing and future (cumulative) conditions. Existing conditions are described comprehensively in the Existing Conditions Report, which includes a section describing existing automobile level of service (LOS). LOS is reported at selected intersections during typical weekday morning (AM) and afternoon (PM) peak hours.

Cumulative conditions reflect buildout of the City and region, with a year 2045 horizon. The SLOCOG TDM was used to develop the traffic forecasts. As previously noted, the land use inputs conservatively reflect full buildout of City land uses and are not discounted to reflect lower historic growth rates or other factors.

Peak hour LOS analysis is conducted here for three primary reasons:

1. Identify intersection improvements to address traffic growth.
2. Estimate vehicular delay to inform the CEQA air quality analysis.

3. Determine conformance to the City's current General Plan Policy 1.3 which seeks to *"maintain LOC C or better as the standard at all intersections and on all arterial and collector roads. Upon City Council approval, accept LOS D where residences are not directly impacted and improved to meet the City's standard would be prohibitively costly or disruptive."*

Table 3 shows the existing and cumulative peak hour auto level of service (LOS) at the study intersections. The Synchro output sheets including queue reports are included in **Attachment A**. **Figures 1** and **2** show these results as well as daily traffic volumes under existing and cumulative conditions, respectively.

Table 3: Intersection Levels of Service

Existing and Cumulative Intersection Levels of Service						
Intersection	**Control**	**Peak Hour**	**Existing Delay[1]**	**Existing LOS**	**Cumulative Delay[1]**	**Cumulative LOS**
1. El Camino Real/San Benito Rd	TWSC	AM	2.5 (12.4)	- (B)	**6.9 (58.8)**	**- (F)**
		PM	1.1 (11.8)	- (B)	**5.1 (58.4)**	**- (F)**
2. El Camino Real/San Anselmo Rd (East)	TWSC	AM	5.5 (17.2)	- (C)	**16.1 (89.9)**	**- (F)**
		PM	2.6 (14.6)	- (B)	**4.2 (42.2)**	**- (E)**
3. El Camino Real/San Anselmo Rd (West)	Signal	AM	19.2	B	45.9	D
		PM	17.9	B	**105.7**	**F**
4. El Camino Real/Curbaril Ave[2]	Signal	AM	32.5	C	33.9	C
		PM	**36.2**	**D**	**43.2**	**D**
5. El Camino Real/Santa Rosa Rd[2]	Signal	AM	18.5	B	24.5	C
		PM	21.4	C	28.0	C
6. El Camino Real/San Gabriel Rd	TWSC	AM	1.0 (14.8)	- (B)	1.1 (17.5)	- (C)
		PM	2.0 (19.0)	- (C)	2.2 (24.6)	- (C)
7. El Camino Real/Santa Barbara Rd	Signal	AM	15.5	B	19.5	B
		PM	12.3	B	13.1	B
8. Traffic Wy/Ardilla Ave/US 101 SB Ramps[3]	TWSC	AM	**20.2 (79.5)**	**- (F)**	**49.0 (>200)**	**- (F)**
		PM	5.6 (15.1)	- (C)	**14.0 (46.3)**	**- (E)**
9. Traffic Wy/Via Ave	TWSC	AM	3.4 (11.8)	- (B)	3.4 (11.7)	- (B)
		PM	3.4 (11.0)	- (B)	3.4 (11.8)	- (B)
10. SR 41/Curbaril Ave	Signal	AM	10.4	B	11.6	B
		PM	10.3	B	11.9	B
11. SR 41/Atascadero Ave[2]	Signal	AM	41.6	D	42.2	D
		PM	25.7	C	33.2	C
12. SR 41/Mercedes Ave	TWSC	AM	2.5 (13.0)	- (B)	4.3 (22.5)	- (C)
		PM	2.5 (17.1)	- (C)	3.0 (25.7)	- (D)
13. Atascadero Ave/Santa Rosa Rd	AWSC	AM	11.7	B	13.9	B
		PM	8.8	A	11.1	B

1. HCM 6th average control delay in seconds per vehicle. For two-way stop controlled (TWSC) intersections the worst approach's delay is reported in parentheses next to the overall delay.
2. Intersections were based on HCM 2000 methodology
3. Intersection was analyzed using Sim Traffic due to non-standard geometry.
Unacceptable (City) operations shown in bold text.

Table 4 shows the queue summary for key movements at signalized intersections and side street approaches at two-way stop controlled intersections operating at LOS D or below.

Table 4: Intersection Queue Summary

Existing and Cumulative Intersection Queues					
Intersection	**Movement**	**Storage Length (ft)[1]**	**Peak Hour**	**95th Percentile Queue (ft)[2]**	
				Existing	**Cumulative**
1. El Camino Real/San Benito Rd	EB	-	AM	0	13
			PM	3	83
	WB	-	AM	15	105
			PM	5	28
2. El Camino Real/San Anselmo Rd (East)	EB	-	AM	0	5
			PM	3	15
	WB	-	AM	70	270
			PM	25	98
3. El Camino Real/San Anselmo Rd (West)	NBL	125 w/TWLTL	AM	**173**	**#683**
			PM	**204**	**#1290**
	SBL	60	AM	42	**65**
			PM	34	**51**
4. El Camino Real/Curbaril Ave	NBL	125 w/TWLTL	AM	**#184**	**#395**
			PM	**238**	**#398**
	SBL	125 w/TWLTL	AM	26	30
			PM	#58	#62
5. El Camino Real/Santa Rosa Rd	NBL	105 w/TWLTL	AM	**306**	**#609**
			PM	**#380**	**#678**
	SBL	105 w/TWLTL	AM	6	15
			PM	0	0
7. El Camino Real/Santa Barbara Rd	NBL	120	AM	120	**224**
			PM	72	80
	SBL	160	AM	13	20
			PM	18	23
10. SR 41/Curbaril Ave	NBL	200 w/TWLTL	AM	13	14
			PM	16	24
	SBL	200 w/TWLTL	AM	37	65
			PM	49	108
11. SR 41/Atascadero Ave	NBL	150 w/TWLTL	AM	91	95
			PM	68	89
	SBL	200 w/TWLTL	AM	159	**223**
			PM	79	138
12. SR 41/Mercedes Ave	EB	-	AM	18	60
			PM	15	33
	WB	-	AM	0	0
			PM	0	5

1. TWLTL=Two-way left-turn lane.
2. Queue length in feet that would not be exceeded 95 percent of the time.
95th percentile volume exceeds capacity, queue may be longer.
m Volume for 95th percentile queue is metered by upstream signal.
Bold indicates queue length longer than storage length.

The following intersections operate below the City's LOS standard or are forecast to experience queue spillback beyond available turn pocket storage space:

- El Camino Real/San Benito Road (#1) operates at LOS F on the side street approach under cumulative conditions. Installation of a traffic signal would result in acceptable LOS C or better operations.
- El Camino Real/San Anselmo Road (East, #2) operates at LOS E or F on the side street approach under cumulative conditions. Installation of a traffic signal would result in acceptable LOS B or better operations.
- El Camino Real/San Anselmo Road (West, #3) operates at LOS D and F under cumulative conditions during the weekday AM and PM peak hours, respectively. A second northbound left turn lane would be needed to provide LOS D operations. This would require widening San Anselmo Road to provide two westbound receiving lanes and may require additional right-of-way.
- El Camino Real/Curbaril Avenue (#4) operates at LOS D during the weekday PM peak hour under existing and cumulative conditions. An additional northbound left turn lane and designated eastbound right turn lane would result in LOS C operations, but would likely require additional right-of-way.
- El Camino Real/Santa Rosa Road (#5) queues on the northbound left-turn movement exceed available storage under existing and cumulative conditions. A second northbound left turn lane would be needed to accommodate the forecast volumes, which would require widening to provide two westbound receiving lanes on Santa Rosa Road. This may require additional right-of-way.
- El Camino Real/Santa Barbara Road (#7) queues on the northbound left-turn movement exceed available storage during the cumulative PM peak hour. Extending the northbound left-turn pocket to 225 feet would accommodate the queue.
- Traffic Way/Ardilla Avenue/US 101 Southbound Ramps (#8) operates at LOS F during the AM peak hour under existing and cumulative conditions, and operates at LOS E during the cumulative PM peak hour. Installation of a single-lane roundabout would provide LOS C or better operations.
- SR 41/Atascadero Avenue (#11) operates at LOS D during the AM peak hour under existing and cumulative conditions. The southbound left-turn queue exceeds available storage under cumulative conditions, but the queue can be accommodated within the existing two-way left-turn lane and no improvements are recommended.
- SR 41/Mercedes Avenue (#12) operates at LOS D during the cumulative PM peak hour on the side street approach. The peak hour traffic signal warrant is expected to be met under cumulative AM conditions. Adding east and westbound right turn lanes on the side street approaches would eliminate the need for a traffic signal but the westbound approach would continue to operate at LOS D. However, the volumes and queues on the westbound approach are minimal.

These results indicate that maintaining LOS C operations during all time periods would require major intersection expansions and right-of-way acquisitions which are likely financially infeasible.

DAILY TRAFFIC VOLUMES

Daily traffic volumes are shown on **Figures 1** and **2** and are shown in **Table 5**.

Table 5: Daily Traffic Volume Summary

Daily Traffic Volume Summary				
		Average Daily Traffic (ADT)		
Roadway	Location	2019	2022	2045 Forecast
Ardilla Rd	San Anselmo Rd to Portola Rd	3,100	-	3,400
Atascadero Ave	Atascadero Mall to Highway 41	2,000	4,400	4,600
	Highway 41 to Curbaril Ave	1,100	2,500	3,100
	Curbaril Ave to Santa Rosa Rd	2,200	-	2,700
	Santa Rosa Rd to San Rafael Rd	1,300	-	1,500
	San Rafael Rd to Santa Barbara Rd	1,200	-	1,600
Capistrano Ave	West Mall to Lewis Ave	700	-	800
	Lewis Ave to Highway 41	5,300	-	5,500
	Sycamore Rd to West Mall	700	-	800
Carmelita Rd	San Andres Ave to Curbaril Ave	400	-	400
	Curbaril Ave to Portola Rd	200	-	200
	Portola Rd to San Gabriel Rd	100	-	100
Curbaril Ave	San Marcos Rd to Carmelita Ave	100	-	100
	Carmelita Ave to Highway 41	-	1,200	1,400
	ECR to Highway 41	3,600	3,300	4,200
	ECR to Sycamore Rd	2,500	-	2,600
Del Rio Rd	Monterey Rd to Ramona Rd	4,200	-	4,300
	ECR to Potrero Rd	2,000	-	2,000
	Potrero Rd to San Anselmo Rd	900	-	1,000
East Front St	101 NB Ramps to Santa Rosa Rd	4,300	-	5,000
El Camino Real	San Ramon Rd to Del Rio Rd	3,600	-	6,900
	Del Rio Rd to Rosario Ave	6,700	-	12,700
	Rosario Ave to Highway 41	11,400	-	16,000
	Highway 41 to San Diego Rd	14,100	-	17,200
	San Diego Rd to Santa Barbara Rd	5,700	-	7,500
Graves Creek Rd	Monterey Rd to San Fernando Rd	1,000	-	1,000
Highway 41	Atascadero Ave to Curbaril Ave	-	10,200	13,900
	Santa Rosa Rd to Curbaril Ave	-	11,100	13,400
	US 101 to Atascadero Ave	-	13,700	17,500
	Santa Ysabel Ave to Mercedes Ave	-	6,300	8,300
	Rocky Canyon Rd to Mercedes Ave	-	5,600	7,700
Lewis Ave	Traffic Way to Capistrano Ave	1,900	-	2,100
Mercedes Ave	Capistrano Ave to Highway 41	2,300	2,100	2,400
Monterey Rd	San Anselmo Rd to Del Rio Rd	1,800	-	1,800
Navarette Ave	San Marcos Rd to Santa Lucia Rd	100	-	100
Portola Rd	Ardilla Rd to Highway 41	2,300	-	2,600
	Higway 41 to Atascadero Ave	1,200	-	1,600
	Atascadero Ave to West Front Rd	1,200	-	1,400
Potrero Rd	Del Rio Rd to Traffic Way	900	-	900
San Anselmo Rd	Ardilla Rd to ECR	4,200	-	4,600
	Del Rio Rd to Dolores Ave	1,000	-	1,100
	Dolores Ave to ECR	3,400	-	3,500
San Benito Rd	ECR to Del Rio Rd	900	-	1,300

Source: SLOCOG TDM, City of Atascadero Speed Surveys, CCTC, 2025.

Table 5 (Continued): Daily Traffic Volume Summary

Daily Traffic Volume Summary				
		Average Daily Traffic (ADT)		
Roadway	Location	2019	2022	2045 Forecast
San Gabriel Rd	San Marcos Rd to Highway 41	1,000	-	1,200
	Highway 41 to Atascadero Ave	1,300	-	1,400
	Santa Lucia Rd to San Marcos Rd	500	-	600
San Jacinto Ave	ECR to Nogales Ave	1,600	-	1,700
	Nogales Ave to Traffic Way	500	-	500
San Marcos Rd	San Adres Ave to Portola Rd	300	-	300
	Portola Rd to San Gabriel Rd	400	-	500
San Ramon Rd	ECR to 101 SB Ramps	3,700	-	5,500
Santa Barbara Rd	Atascadero Rd to SR 101	1,500	-	1,900
	SR 101 to Viejo Carrizo	8,600	-	9,700
Santa Cruz Rd	ECR to Carrizo Rd	900	-	1,300
Santa Lucia Rd	Ardilla Rd to Portola Rd	2,600	-	2,900
	Portola Rd to Laurel Rd	1,500	-	2,200
Santa Rosa Rd	ECR to Highway 41	2,700	-	3,100
Santa Ysabel Ave	Highway 41 to Curbaril Ave	1,700	-	1,800
Sycamore Rd	Capistrano Ave to Curbaril Ave	1,000	-	1,100
Traffic Way	ECR to Olmeda Ave	6,300	-	7,400
	Olmeda Ave to San Jacinto Ave	3,800	-	4,100
	San Jacinto Ave to Carrizo Rd	2,800	-	3,100
Venado Ave	Santa Lucia Rd to Ardilla Rd	100	-	100
Via Ave	Traffic Way to Capistrano Ave	2,100	-	2,300
Viejo Carrizo	ECR to Santa Barbara Rd	500	-	900
West Front Rd	101 SB Offramp to Santa Rosa Rd	6,800	-	7,900
	Santa Rosa Rd to SB 101 Onramp	1,100	-	1,400
West Mall	ECR to Atascadero Creek Bridge	1,600	-	2,000

Source: SLOCOG TDM, City of Atascadero Speed Surveys, CCTC, 2025.

ATTACHMENTS

Figure 1: Existing Traffic Volumes

Figure 2: Cumulative Traffic Volumes

Attachment A: Synchro Output Sheets

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Existing Traffic Volumes and LOS

Intersection Level of Service

AM / PM — Service Grade: A, B, C | D | E | F

Daily Traffic Volumes

- 2019 Traffic Volume
- 2022 Traffic Volume

Basemap Features

- Atascadero City Limits
- Urban Reserve Line (SOI)
- Rail Line
- Recreation Area
- Water Body
- Waterway

Source(s): Esri, County of San Luis Obispo Open Data, City of Atascadero 2022.

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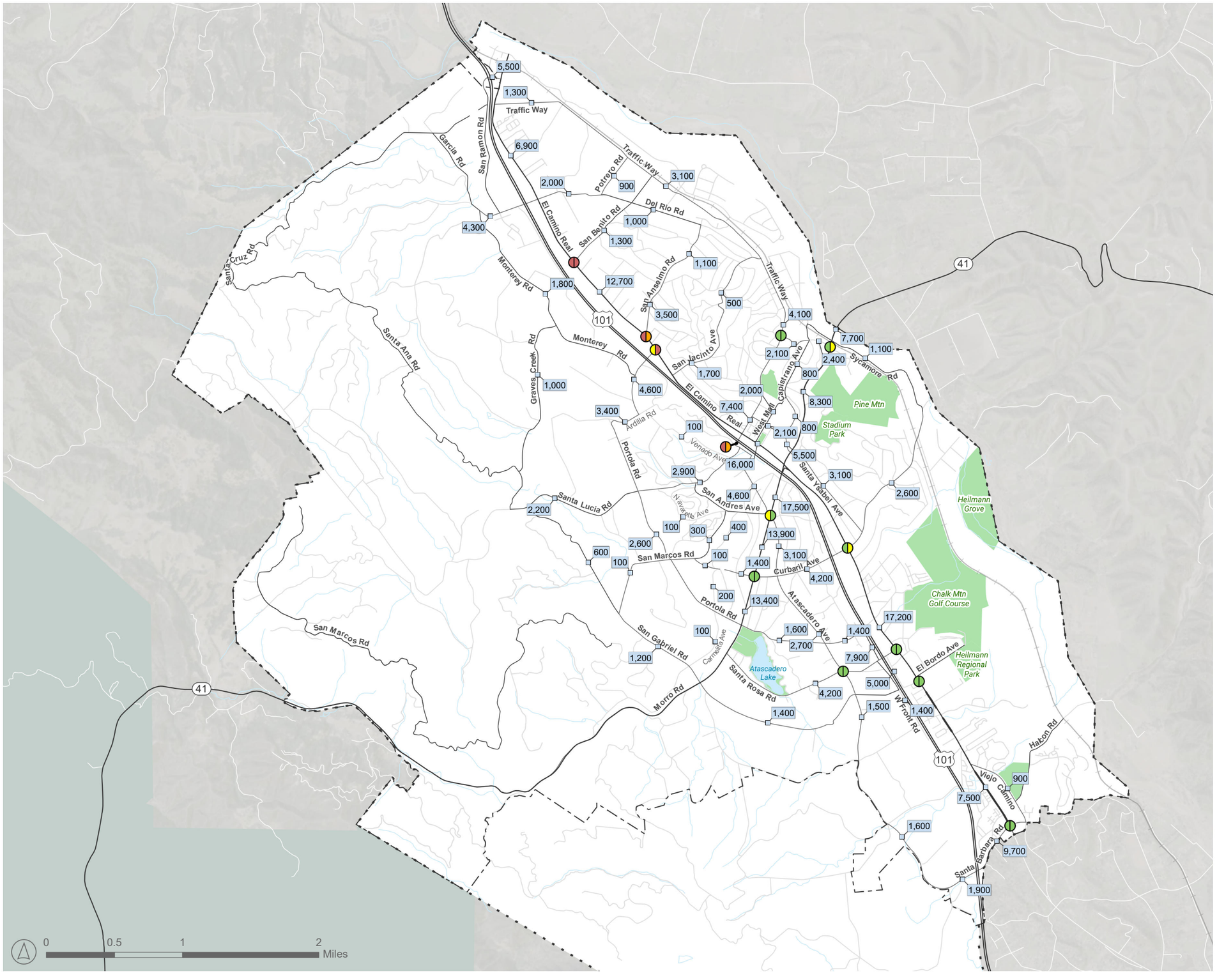
0 0.5 1 2 Miles

Cumulative Traffic Volumes and LOS



Intersection Level of Service

AM / PM — Service Grade: A, B, C | D | E | F

Daily Traffic Volumes

2045 Traffic Volume

Basemap Features

- Atascadero City Limits
- Urban Reserve Line (SOI)
- Rail Line
- Recreation Area
- Water Body
- Waterway

Source(s): Esri, County of San Luis Obispo Open Data, City of Atascadero 2022.

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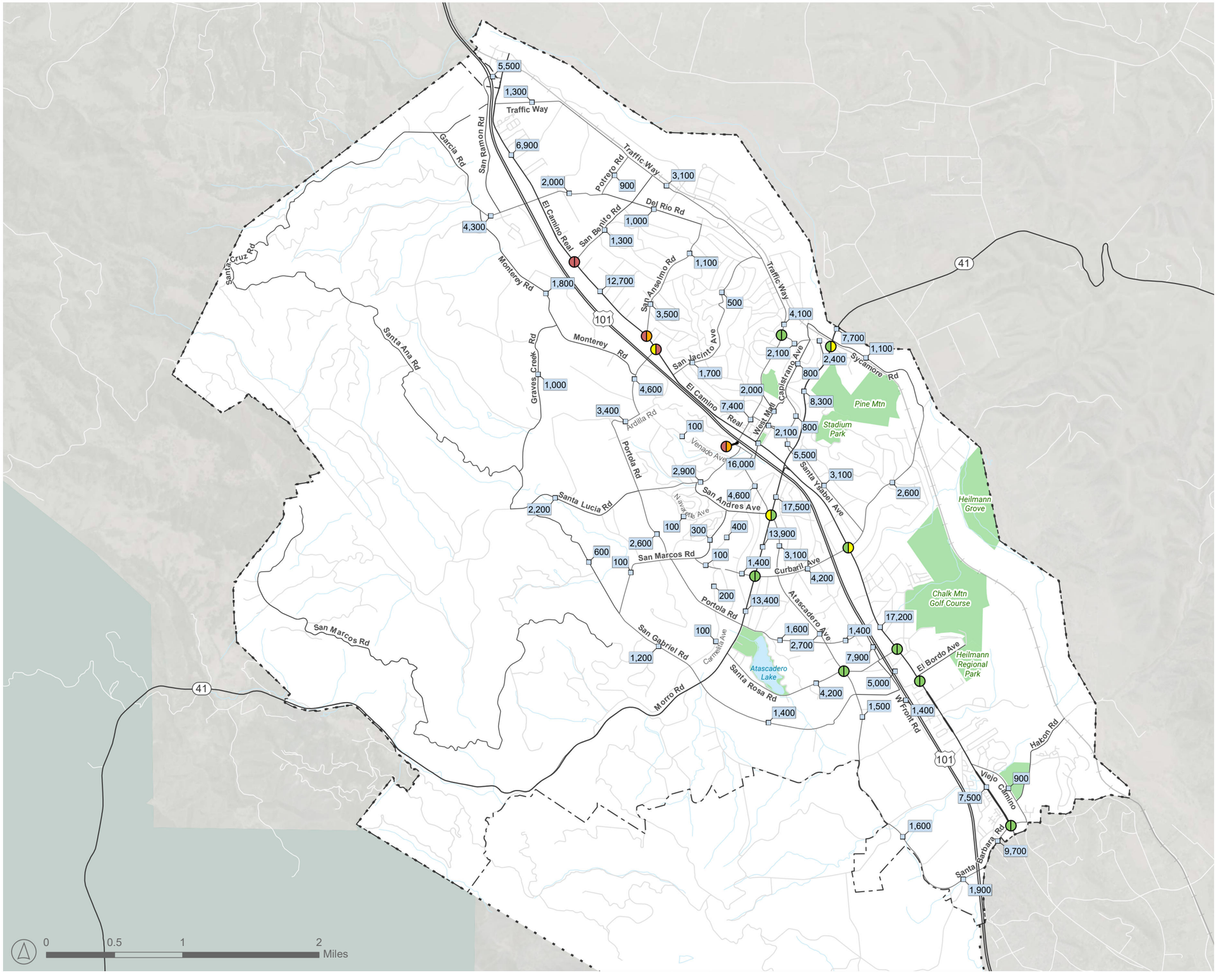

Cumulative Traffic Volumes and LOS

Intersection Level of Service

AM / PM — Service Grade: A, B, C | D | E | F

Daily Traffic Volumes

2045 Traffic Volume

Basemap Features

- Atascadero City Limits
- Urban Reserve Line (SOI)
- Rail Line
- Recreation Area
- Water Body
- Waterway

Source(s): Esri, County of San Luis Obispo Open Data, City of Atascadero 2022.

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Appendix A: Synchro Output Sheets

Existing Conditions

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↰	↑		↰	↑	
Traffic Vol, veh/h	2	0	3	62	1	23	5	150	38	10	205	3
Future Vol, veh/h	2	0	3	62	1	23	5	150	38	10	205	3
Conflicting Peds, #/hr	1	0	1	1	0	1	2	0	0	0	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	0	3	67	1	25	5	163	41	11	223	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	457	463	228	443	444	185	228	0	0	204	0	0
Stage 1	249	249	-	194	194	-	-	-	-	-	-	-
Stage 2	208	214	-	249	250	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	514	496	811	525	508	857	1340	-	-	1368	-	-
Stage 1	755	701	-	808	740	-	-	-	-	-	-	-
Stage 2	794	725	-	755	700	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	492	489	809	518	501	856	1337	-	-	1368	-	-
Mov Cap-2 Maneuver	492	489	-	518	501	-	-	-	-	-	-	-
Stage 1	750	694	-	805	737	-	-	-	-	-	-	-
Stage 2	766	722	-	745	693	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.6	12.4	0.2	0.4
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1337	-	-	643	579	1368	-	-
HCM Lane V/C Ratio	0.004	-	-	0.008	0.161	0.008	-	-
HCM Control Delay (s)	7.7	-	-	10.6	12.4	7.7	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.6	0	-	-

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	2	0	234	4	14	4	212	68	8	257	3
Future Vol, veh/h	3	2	0	234	4	14	4	212	68	8	257	3
Conflicting Peds, #/hr	2	0	0	0	0	2	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	100	75	-	-
Veh in Median Storage, #	-	0	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	2	0	272	5	16	5	247	79	9	299	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	457	656	151	427	578	127	302	0	0	327	0	0
Stage 1	319	319	-	258	258	-	-	-	-	-	-	-
Stage 2	138	337	-	169	320	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	487	384	868	512	425	900	1256	-	-	1229	-	-
Stage 1	667	652	-	724	693	-	-	-	-	-	-	-
Stage 2	851	640	-	816	651	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	469	379	868	504	419	897	1256	-	-	1228	-	-
Mov Cap-2 Maneuver	469	379	-	574	494	-	-	-	-	-	-	-
Stage 1	664	647	-	720	689	-	-	-	-	-	-	-
Stage 2	824	636	-	807	646	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.5	17.2	0.1	0.2
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1256	-	-	428	584	1228	-	-
HCM Lane V/C Ratio	0.004	-	-	0.014	0.502	0.008	-	-
HCM Control Delay (s)	7.9	0	-	13.5	17.2	8	-	-
HCM Lane LOS	A	A	-	B	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	2.8	0	-	-

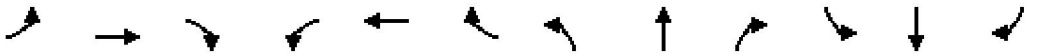
Lane Group	EBT	EBR	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	173	164	77	246	192	33	212	379
v/c Ratio	0.48	0.36	0.39	0.59	0.12	0.22	0.24	0.56
Control Delay	30.0	7.6	30.2	30.0	13.2	35.9	22.7	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.0	7.6	30.2	30.0	13.2	35.9	22.7	6.8
Queue Length 50th (ft)	58	0	20	83	24	12	34	0
Queue Length 95th (ft)	131	41	64	173	51	42	73	54
Internal Link Dist (ft)	345		64		217		210	
Turn Bay Length (ft)		205		125		60		100
Base Capacity (vph)	1660	1485	731	978	2744	978	2797	1330
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.11	0.11	0.25	0.07	0.03	0.08	0.28

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	132	15	139	7	28	31	209	146	17	28	180	322
Future Volume (vph)	132	15	139	7	28	31	209	146	17	28	180	322
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5	3.5		3.5		3.5	4.0		3.5	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		0.94		1.00	0.98		1.00	1.00	0.85
Flt Protected		0.96	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1783	1583		1736		1770	3476		1770	3539	1583
Flt Permitted		0.96	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1783	1583		1736		1770	3476		1770	3539	1583
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	155	18	164	8	33	36	246	172	20	33	212	379
RTOR Reduction (vph)	0	0	132	0	18	0	0	0	0	0	0	277
Lane Group Flow (vph)	0	173	32	0	59	0	246	192	0	33	212	102
Confl. Peds. (#/hr)									1	1		
Turn Type	Split	NA	Perm	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases			8									2
Actuated Green, G (s)		12.6	12.6		5.2		14.6	28.8		3.1	17.3	17.3
Effective Green, g (s)		12.6	12.6		5.2		14.6	28.8		3.1	17.3	17.3
Actuated g/C Ratio		0.20	0.20		0.08		0.23	0.45		0.05	0.27	0.27
Clearance Time (s)		3.5	3.5		3.5		3.5	4.0		3.5	4.0	4.0
Vehicle Extension (s)		2.0	2.0		1.0		1.0	5.5		1.0	5.5	5.5
Lane Grp Cap (vph)		349	310		140		402	1559		85	953	426
v/s Ratio Prot		c0.10			c0.03		c0.14	0.06		0.02	0.06	
v/s Ratio Perm			0.02									c0.06
v/c Ratio		0.50	0.10		0.42		0.61	0.12		0.39	0.22	0.24
Uniform Delay, d1		23.0	21.2		28.1		22.3	10.3		29.6	18.2	18.3
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.4	0.1		0.7		1.9	0.1		1.1	0.3	0.7
Delay (s)		23.4	21.2		28.8		24.2	10.4		30.7	18.5	19.0
Level of Service		C	C		C		C	B		C	B	B
Approach Delay (s)		22.3			28.8			18.2			19.5	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	20.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	64.2	Sum of lost time (s)	14.5
Intersection Capacity Utilization	45.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	132	15	139	7	28	31	209	146	17	28	180	322
Future Volume (veh/h)	132	15	139	7	28	31	209	146	17	28	180	322
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	155	18	164	8	33	36	246	172	20	33	212	379
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	240	28	237	10	42	46	298	1541	177	96	1303	580
Arrive On Green	0.15	0.15	0.15	0.06	0.06	0.06	0.17	0.48	0.48	0.05	0.37	0.37
Sat Flow, veh/h	1604	186	1585	178	736	803	1781	3212	369	1781	3554	1583
Grp Volume(v), veh/h	173	0	164	77	0	0	246	94	98	33	212	379
Grp Sat Flow(s),veh/h/ln	1790	0	1585	1717	0	0	1781	1777	1804	1781	1777	1583
Q Serve(g_s), s	5.1	0.0	5.5	2.5	0.0	0.0	7.4	1.6	1.7	1.0	2.2	11.1
Cycle Q Clear(g_c), s	5.1	0.0	5.5	2.5	0.0	0.0	7.4	1.6	1.7	1.0	2.2	11.1
Prop In Lane	0.90		1.00	0.10		0.47	1.00		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	267	0	237	98	0	0	298	853	865	96	1303	580
V/C Ratio(X)	0.65	0.00	0.69	0.78	0.00	0.00	0.83	0.11	0.11	0.34	0.16	0.65
Avail Cap(c_a), veh/h	2053	0	1818	738	0	0	1021	1560	1584	1021	3120	1390
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.4	0.0	22.5	26.0	0.0	0.0	22.5	8.0	8.0	25.5	11.9	14.7
Incr Delay (d2), s/veh	1.0	0.0	1.4	5.1	0.0	0.0	2.2	0.2	0.2	0.8	0.2	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	1.9	1.1	0.0	0.0	2.9	0.5	0.5	0.4	0.8	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.3	0.0	23.9	31.0	0.0	0.0	24.7	8.1	8.1	26.2	12.1	18.1
LnGrp LOS	C	A	C	C	A	A	C	A	A	C	B	B
Approach Vol, veh/h		337			77			438			624	
Approach Delay, s/veh		23.6			31.0			17.4			16.5	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.8	24.5		6.7	6.5	30.8		11.8				
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5				
Max Green Setting (Gmax), s	32.0	49.0		24.0	32.0	49.0		64.0				
Max Q Clear Time (g_c+I1), s	9.4	13.1		4.5	3.0	3.7		7.5				
Green Ext Time (p_c), s	0.1	7.3		0.1	0.0	2.5		0.9				

Intersection Summary			
HCM 6th Ctrl Delay		19.2	
HCM 6th LOS		B	



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	181	260	298	41	199	269	39	13	231	50
v/c Ratio	0.63	0.56	0.75	0.09	0.73	0.16	0.05	0.10	0.22	0.09
Control Delay	44.4	9.1	45.1	0.4	52.0	16.5	0.1	41.8	27.7	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.4	9.1	45.1	0.4	52.0	16.5	0.1	41.8	27.7	0.3
Queue Length 50th (ft)	97	0	158	0	108	42	0	7	52	0
Queue Length 95th (ft)	153	60	234	0	#184	94	0	26	97	0
Internal Link Dist (ft)	306		234			460			694	
Turn Bay Length (ft)		150		160	125		125	125		125
Base Capacity (vph)	406	549	434	484	311	1712	800	127	1094	576
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.47	0.69	0.08	0.64	0.16	0.05	0.10	0.21	0.09

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

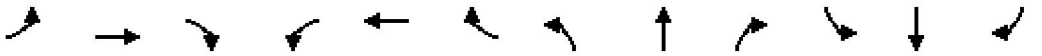
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	111	250	72	214	39	191	258	37	12	222	48
Future Volume (vph)	62	111	250	72	214	39	191	258	37	12	222	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	3.5	4.0	4.0	3.5	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.99		1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.97
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.98	1.00		0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1830	1562		1840	1583	1770	3539	1546	1766	3539	1543
Flt Permitted		0.98	1.00		0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1830	1562		1840	1583	1770	3539	1546	1766	3539	1543
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	65	116	260	75	223	41	199	269	39	12	231	50
RTOR Reduction (vph)	0	0	219	0	0	32	0	0	22	0	0	35
Lane Group Flow (vph)	0	181	41	0	298	9	199	269	17	13	231	15
Confl. Peds. (#/hr)			1	1					1	1		1
Confl. Bikes (#/hr)									1			2
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3			6			2
Actuated Green, G (s)		14.3	14.3		19.4	19.4	13.9	39.9	39.9	0.9	26.9	26.9
Effective Green, g (s)		14.3	14.3		19.4	19.4	13.9	39.9	39.9	0.9	26.9	26.9
Actuated g/C Ratio		0.16	0.16		0.22	0.22	0.15	0.44	0.44	0.01	0.30	0.30
Clearance Time (s)		4.0	4.0		4.0	4.0	3.5	4.0	4.0	3.5	4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	2.5	4.0	4.0	2.5	4.0	4.0
Lane Grp Cap (vph)		290	248		396	341	273	1568	685	17	1057	461
v/s Ratio Prot		c0.10			c0.16		c0.11	0.08		0.01	c0.07	
v/s Ratio Perm			0.03			0.01			0.01			0.01
v/c Ratio		0.62	0.17		0.75	0.03	0.73	0.17	0.03	0.76	0.22	0.03
Uniform Delay, d1		35.3	32.7		33.1	27.8	36.3	15.1	14.1	44.4	23.7	22.3
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		4.1	0.3		7.9	0.0	8.8	0.2	0.1	103.6	0.5	0.1
Delay (s)		39.5	33.0		40.9	27.9	45.1	15.3	14.2	148.1	24.1	22.5
Level of Service		D	C		D	C	D	B	B	F	C	C
Approach Delay (s)		35.7			39.3			26.9			29.3	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	32.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	61.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	127	422	8	392	324	1	302	131
v/c Ratio	0.58	0.36	0.06	0.53	0.14	0.01	0.46	0.34
Control Delay	40.8	1.9	27.0	21.7	6.8	38.0	29.2	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.8	1.9	27.0	21.7	6.8	38.0	29.2	8.4
Queue Length 50th (ft)	48	0	1	110	19	0	58	0
Queue Length 95th (ft)	124	35	15	306	78	6	116	42
Internal Link Dist (ft)	486		78		253		275	
Turn Bay Length (ft)		195		105		100		100
Base Capacity (vph)	669	1188	712	760	2531	506	2027	929
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.36	0.01	0.52	0.13	0.00	0.15	0.14

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	98	12	367	0	2	5	341	280	2	1	263	114
Future Volume (vph)	98	12	367	0	2	5	341	280	2	1	263	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0		5.0	5.0		5.0	5.0	5.0
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	1.00		0.90		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		0.90		1.00	1.00		1.00	1.00	0.85
Flt Protected		0.96	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1776	1583		1512		1770	3535		1770	3539	1536
Flt Permitted		0.74	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1380	1583		1512		1770	3535		1770	3539	1536
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	113	14	422	0	2	6	392	322	2	1	302	131
RTOR Reduction (vph)	0	0	203	0	6	0	0	0	0	0	0	101
Lane Group Flow (vph)	0	127	219	0	2	0	392	324	0	1	302	30
Confl. Peds. (#/hr)	5					5	4		5			4
Confl. Bikes (#/hr)									2			2
Turn Type	Perm	NA	pm+ov		NA		Prot	NA		Prot	NA	Perm
Protected Phases		4	1		3		1	6		5	2	
Permitted Phases	4		4	3								2
Actuated Green, G (s)		11.4	41.5		0.8		30.1	46.9		0.7	17.5	17.5
Effective Green, g (s)		11.4	41.5		0.8		30.1	46.9		0.7	17.5	17.5
Actuated g/C Ratio		0.14	0.52		0.01		0.38	0.59		0.01	0.22	0.22
Clearance Time (s)		5.0	5.0		5.0		5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)		2.0	2.0		2.0		2.0	3.0		2.0	3.0	3.0
Lane Grp Cap (vph)		197	922		15		667	2077		15	776	336
v/s Ratio Prot			0.09		c0.00		c0.22	0.09		0.00	c0.09	
v/s Ratio Perm		c0.09	0.05									0.02
v/c Ratio		0.64	0.24		0.14		0.59	0.16		0.07	0.39	0.09
Uniform Delay, d1		32.3	10.5		39.2		19.9	7.5		39.2	26.6	24.8
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		5.3	0.0		1.5		0.9	0.0		0.7	0.3	0.1
Delay (s)		37.6	10.5		40.7		20.7	7.5		39.9	26.9	24.9
Level of Service		D	B		D		C	A		D	C	C
Approach Delay (s)		16.8			40.7			14.8			26.3	
Approach LOS		B			D			B			C	

Intersection Summary			
HCM 2000 Control Delay	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	79.8	Sum of lost time (s)	20.0
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

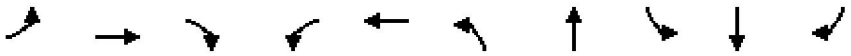
Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	0	37	0	1	1	55	536	0	2	483	8
Future Vol, veh/h	14	0	37	0	1	1	55	536	0	2	483	8
Conflicting Peds, #/hr	3	0	0	0	0	3	3	0	1	1	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	0
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	0	43	0	1	1	63	616	0	2	555	9

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1000	1305	281	1025	1314	312	567	0	0	617	0	0
Stage 1	562	562	-	743	743	-	-	-	-	-	-	-
Stage 2	438	743	-	282	571	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	197	159	716	189	157	684	1001	-	-	959	-	-
Stage 1	479	508	-	373	420	-	-	-	-	-	-	-
Stage 2	567	420	-	701	503	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	185	148	714	169	146	681	998	-	-	958	-	-
Mov Cap-2 Maneuver	304	267	-	270	255	-	-	-	-	-	-	-
Stage 1	447	505	-	349	393	-	-	-	-	-	-	-
Stage 2	527	393	-	658	500	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.8	14.8	0.8	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	998	-	-	521	371	958	-	-
HCM Lane V/C Ratio	0.063	-	-	0.113	0.006	0.002	-	-
HCM Control Delay (s)	8.9	-	-	12.8	14.8	8.8	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.4	0	0	-	-

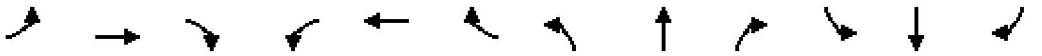


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	48	98	99	8	204	203	106	7	78	215
v/c Ratio	0.17	0.21	0.21	0.02	0.43	0.49	0.12	0.03	0.20	0.44
Control Delay	17.8	17.3	5.7	16.0	19.9	22.3	9.3	24.5	20.4	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.8	17.3	5.7	16.0	19.9	22.3	9.3	24.5	20.4	6.9
Queue Length 50th (ft)	11	22	0	2	49	52	13	2	19	0
Queue Length 95th (ft)	37	62	29	11	116	120	55	13	58	47
Internal Link Dist (ft)		435			214		337		398	
Turn Bay Length (ft)	265		265	155		120		160		160
Base Capacity (vph)	667	1114	985	773	1108	1024	1352	1024	1366	1213
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.09	0.10	0.01	0.18	0.20	0.08	0.01	0.06	0.18

Intersection Summary

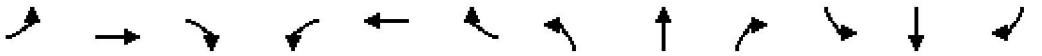
8: Ardilla Ave/Traffic Way & US 101 SB Ramp Performance by approach

Approach	EB	NB	SB	SE	All
Denied Del/Veh (s)	0.1	0.6	0.5	16.6	3.0
Total Del/Veh (s)	82.2	3.6	8.2	79.5	20.2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	87	88	7	174	7	181	88	6	6	69	191
Future Volume (vph)	43	87	88	7	174	7	181	88	6	6	69	191
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	4.6	4.6	4.6		4.0	5.7		4.0	5.7	5.7
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1719	1810	1538	1719	1799		1719	1792		1719	1810	1538
Flt Permitted	0.60	1.00	1.00	0.69	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1084	1810	1538	1255	1799		1719	1792		1719	1810	1538
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	48	98	99	8	196	8	203	99	7	7	78	215
RTOR Reduction (vph)	0	0	74	0	2	0	0	2	0	0	0	159
Lane Group Flow (vph)	48	98	25	8	202	0	203	104	0	7	78	56
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								6
Actuated Green, G (s)	13.6	13.6	13.6	13.6	13.6		12.5	25.8		1.1	14.4	14.4
Effective Green, g (s)	13.6	13.6	13.6	13.6	13.6		12.5	25.8		1.1	14.4	14.4
Actuated g/C Ratio	0.25	0.25	0.25	0.25	0.25		0.23	0.47		0.02	0.26	0.26
Clearance Time (s)	4.6	4.6	4.6	4.6	4.6		4.0	5.7		4.0	5.7	5.7
Vehicle Extension (s)	5.0	5.0	5.0	5.0	5.0		3.5	5.8		3.5	5.8	5.8
Lane Grp Cap (vph)	269	449	381	311	446		392	843		34	475	404
v/s Ratio Prot		0.05			c0.11		c0.12	0.06		0.00	c0.04	
v/s Ratio Perm	0.04		0.02	0.01								0.04
v/c Ratio	0.18	0.22	0.06	0.03	0.45		0.52	0.12		0.21	0.16	0.14
Uniform Delay, d1	16.2	16.4	15.7	15.6	17.5		18.5	8.1		26.4	15.6	15.5
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.7	0.5	0.1	0.1	1.5		1.3	0.2		3.5	0.4	0.4
Delay (s)	16.9	16.9	15.9	15.7	19.0		19.9	8.3		30.0	16.0	15.9
Level of Service	B	B	B	B	B		B	A		C	B	B
Approach Delay (s)		16.5			18.9			15.9			16.2	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	16.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	54.8	Sum of lost time (s)	14.3
Intersection Capacity Utilization	43.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	87	88	7	174	7	181	88	6	6	69	191
Future Volume (veh/h)	43	87	88	7	174	7	181	88	6	6	69	191
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	48	98	99	8	196	8	203	99	7	7	78	215
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	336	426	361	399	406	17	278	676	48	16	458	389
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.16	0.40	0.40	0.01	0.25	0.25
Sat Flow, veh/h	1150	1826	1547	1157	1742	71	1739	1685	119	1739	1826	1547
Grp Volume(v), veh/h	48	98	99	8	0	204	203	0	106	7	78	215
Grp Sat Flow(s),veh/h/ln	1150	1826	1547	1157	0	1813	1739	0	1804	1739	1826	1547
Q Serve(g_s), s	1.5	1.7	2.1	0.2	0.0	3.9	4.5	0.0	1.5	0.2	1.3	4.9
Cycle Q Clear(g_c), s	5.4	1.7	2.1	2.0	0.0	3.9	4.5	0.0	1.5	0.2	1.3	4.9
Prop In Lane	1.00		1.00	1.00		0.04	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	336	426	361	399	0	423	278	0	724	16	458	389
V/C Ratio(X)	0.14	0.23	0.27	0.02	0.00	0.48	0.73	0.00	0.15	0.43	0.17	0.55
Avail Cap(c_a), veh/h	955	1409	1194	1022	0	1399	1299	0	1707	1299	1727	1464
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.6	12.5	12.6	13.3	0.0	13.3	16.1	0.0	7.6	19.8	11.8	13.1
Incr Delay (d2), s/veh	0.4	0.6	0.9	0.0	0.0	1.8	4.4	0.0	0.3	20.2	0.6	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.6	0.6	0.1	0.0	1.4	1.7	0.0	0.4	0.1	0.5	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.1	13.1	13.5	13.3	0.0	15.1	20.5	0.0	7.9	40.0	12.3	17.0
LnGrp LOS	B	B	B	B	A	B	C	A	A	D	B	B
Approach Vol, veh/h		245			212			309			300	
Approach Delay, s/veh		13.8			15.1			16.2			16.4	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.4	21.8		14.0	10.4	15.8		14.0				
Change Period (Y+Rc), s	4.0	5.7		4.6	4.0	5.7		4.6				
Max Green Setting (Gmax), s	30.0	38.0		31.0	30.0	38.0		31.0				
Max Q Clear Time (g_c+I1), s	2.2	3.5		7.4	6.5	6.9		5.9				
Green Ext Time (p_c), s	0.0	1.3		2.0	0.7	3.2		2.1				

Intersection Summary												
HCM 6th Ctrl Delay			15.5									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	3.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	26	77	136	22	66	180
Future Vol, veh/h	26	77	136	22	66	180
Conflicting Peds, #/hr	0	1	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	74	74	74	74	74	74
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	35	104	184	30	89	243

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	621	201	0	0	215	0
Stage 1	200	-	-	-	-	-
Stage 2	421	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	451	840	-	-	1355	-
Stage 1	834	-	-	-	-	-
Stage 2	662	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	416	838	-	-	1354	-
Mov Cap-2 Maneuver	416	-	-	-	-	-
Stage 1	833	-	-	-	-	-
Stage 2	612	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.8	0	2.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	667	1354	-
HCM Lane V/C Ratio	-	-	0.209	0.066	-
HCM Control Delay (s)	-	-	11.8	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.8	0.2	-

Lane Group	EBT	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	115	149	6	391	112	33	463
v/c Ratio	0.27	0.39	0.03	0.53	0.17	0.13	0.56
Control Delay	14.9	16.5	25.2	15.4	6.4	23.9	13.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.9	16.5	25.2	15.4	6.4	23.9	13.7
Queue Length 50th (ft)	14	18	1	42	3	5	52
Queue Length 95th (ft)	64	80	13	214	38	37	250
Internal Link Dist (ft)	369	467		389			478
Turn Bay Length (ft)			200		105	200	
Base Capacity (vph)	1337	1170	949	1812	1505	949	1796
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.13	0.01	0.22	0.07	0.03	0.26

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	56	15	69	27	33	5	336	96	28	378	20
Future Volume (vph)	28	56	15	69	27	33	5	336	96	28	378	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6		4.6	5.3	5.3	4.1	5.3	
Lane Util. Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes		1.00			0.99		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Frt		0.98			0.97		1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.99			0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1799			1742		1770	1863	1550	1770	1849	
Flt Permitted		0.88			0.79		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1607			1405		1770	1863	1550	1770	1849	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	33	65	17	80	31	38	6	391	112	33	440	23
RTOR Reduction (vph)	0	5	0	0	10	0	0	0	48	0	2	0
Lane Group Flow (vph)	0	110	0	0	139	0	6	391	64	33	461	0
Confl. Peds. (#/hr)	1					1			1	1		
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			
Actuated Green, G (s)		11.1			11.1		0.6	17.9	17.9	1.9	18.7	
Effective Green, g (s)		11.1			11.1		0.6	17.9	17.9	1.9	18.7	
Actuated g/C Ratio		0.25			0.25		0.01	0.40	0.40	0.04	0.42	
Clearance Time (s)		4.6			4.6		4.6	5.3	5.3	4.1	5.3	
Vehicle Extension (s)		1.0			1.0		1.5	1.0	1.0	1.5	1.0	
Lane Grp Cap (vph)		397			347		23	742	617	74	770	
v/s Ratio Prot							0.00	0.21		c0.02	c0.25	
v/s Ratio Perm		0.07			c0.10				0.04			
v/c Ratio		0.28			0.40		0.26	0.53	0.10	0.45	0.60	
Uniform Delay, d1		13.7			14.1		21.9	10.3	8.5	21.0	10.2	
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.1			0.3		2.2	0.3	0.0	1.6	0.8	
Delay (s)		13.8			14.4		24.1	10.6	8.5	22.5	11.0	
Level of Service		B			B		C	B	A	C	B	
Approach Delay (s)		13.8			14.4			10.3			11.8	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	11.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	44.9	Sum of lost time (s)	14.5
Intersection Capacity Utilization	45.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	56	15	69	27	33	5	336	96	28	378	20
Future Volume (veh/h)	28	56	15	69	27	33	5	336	96	28	378	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	65	17	80	31	38	6	391	112	33	440	23
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	209	239	52	310	106	82	14	573	485	71	568	30
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.01	0.31	0.31	0.04	0.32	0.32
Sat Flow, veh/h	297	1155	252	645	511	396	1781	1870	1582	1781	1762	92
Grp Volume(v), veh/h	115	0	0	149	0	0	6	391	112	33	0	463
Grp Sat Flow(s),veh/h/ln	1704	0	0	1552	0	0	1781	1870	1582	1781	0	1854
Q Serve(g_s), s	0.0	0.0	0.0	0.7	0.0	0.0	0.1	5.7	1.7	0.6	0.0	7.1
Cycle Q Clear(g_c), s	1.7	0.0	0.0	2.4	0.0	0.0	0.1	5.7	1.7	0.6	0.0	7.1
Prop In Lane	0.29		0.15	0.54		0.26	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	501	0	0	498	0	0	14	573	485	71	0	597
V/C Ratio(X)	0.23	0.00	0.00	0.30	0.00	0.00	0.41	0.68	0.23	0.47	0.00	0.78
Avail Cap(c_a), veh/h	1883	0	0	1692	0	0	1136	3698	3129	1136	0	3665
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.5	0.0	0.0	10.8	0.0	0.0	15.5	9.5	8.1	14.7	0.0	9.6
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.1	0.0	0.0	6.9	0.5	0.1	1.8	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.0	0.7	0.0	0.0	0.1	1.5	0.4	0.2	0.0	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.6	0.0	0.0	10.9	0.0	0.0	22.4	10.1	8.2	16.5	0.0	10.4
LnGrp LOS	B	A	A	B	A	A	C	B	A	B	A	B
Approach Vol, veh/h		115			149			509			496	
Approach Delay, s/veh		10.6			10.9			9.8			10.8	
Approach LOS		B			B			A			B	

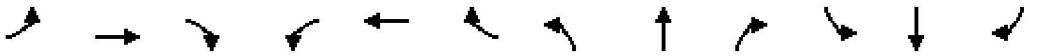
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.3	14.9		11.1	4.9	15.4		11.1				
Change Period (Y+Rc), s	4.1	5.3		4.6	4.6	5.3		4.6				
Max Green Setting (Gmax), s	20.0	62.0		33.0	20.0	62.0		32.0				
Max Q Clear Time (g_c+I1), s	2.6	7.7		3.7	2.1	9.1		4.4				
Green Ext Time (p_c), s	0.0	0.8		0.2	0.0	0.9		0.3				

Intersection Summary												
HCM 6th Ctrl Delay			10.4									
HCM 6th LOS			B									



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	300	51	193	97	50	447	4	105	624	225
v/c Ratio	0.73	0.13	0.69	0.33	0.42	0.69	0.01	0.58	0.81	0.33
Control Delay	61.3	8.8	70.2	28.4	79.2	42.5	0.0	76.1	45.3	17.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.3	8.8	70.2	28.4	79.2	42.5	0.0	76.1	45.3	17.7
Queue Length 50th (ft)	230	0	153	26	41	308	0	84	460	71
Queue Length 95th (ft)	366	16	255	70	91	432	0	159	606	123
Internal Link Dist (ft)	408		339			523			385	
Turn Bay Length (ft)		35		50	150		300	200		200
Base Capacity (vph)	627	573	647	592	385	1227	1030	385	1227	1041
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.09	0.30	0.16	0.13	0.36	0.00	0.27	0.51	0.22

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	161	67	39	11	136	74	38	340	3	80	474	171
Future Volume (vph)	161	67	39	11	136	74	38	340	3	80	474	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6		4.6	4.6	4.6	5.3	5.3	4.6	5.3	5.3
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00	0.97		1.00	1.00	1.00	1.00	0.97	1.00	1.00	0.97
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.97	1.00		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1799	1531		1856	1583	1770	1863	1540	1770	1863	1539
Flt Permitted		0.97	1.00		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1799	1531		1856	1583	1770	1863	1540	1770	1863	1539
Peak-hour factor, PHF	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Adj. Flow (vph)	212	88	51	14	179	97	50	447	4	105	624	225
RTOR Reduction (vph)	0	0	39	0	0	53	0	0	3	0	0	55
Lane Group Flow (vph)	0	300	12	0	193	44	50	447	1	105	624	170
Confl. Peds. (#/hr)			6	6					4			3
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7			8			2			6
Actuated Green, G (s)		29.1	29.1		19.2	19.2	6.8	46.2	46.2	13.1	52.5	52.5
Effective Green, g (s)		29.1	29.1		19.2	19.2	6.8	46.2	46.2	13.1	52.5	52.5
Actuated g/C Ratio		0.23	0.23		0.15	0.15	0.05	0.36	0.36	0.10	0.41	0.41
Clearance Time (s)		4.6	4.6		4.6	4.6	4.6	5.3	5.3	4.6	5.3	5.3
Vehicle Extension (s)		1.5	1.5		1.0	1.0	1.5	1.0	1.0	1.5	1.0	1.0
Lane Grp Cap (vph)		413	351		281	239	94	679	561	183	771	637
v/s Ratio Prot		c0.17			c0.10		0.03	0.24		c0.06	c0.33	
v/s Ratio Perm			0.01			0.03			0.00			0.11
v/c Ratio		0.73	0.03		0.69	0.19	0.53	0.66	0.00	0.57	0.81	0.27
Uniform Delay, d1		45.1	37.9		50.9	46.9	58.4	33.7	25.6	54.1	32.7	24.4
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		5.3	0.0		5.5	0.1	2.9	1.8	0.0	2.7	5.9	0.1
Delay (s)		50.4	37.9		56.4	47.1	61.3	35.4	25.6	56.8	38.6	24.5
Level of Service		D	D		E	D	E	D	C	E	D	C
Approach Delay (s)		48.6			53.3			37.9			37.3	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	41.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	126.7	Sum of lost time (s)	19.1
Intersection Capacity Utilization	65.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	0	67	0	0	0	43	143	3	2	322	47
Future Vol, veh/h	30	0	67	0	0	0	43	143	3	2	322	47
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	285	-	-	165	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	32	0	71	0	0	0	45	151	3	2	339	49

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	611	612	364	646	635	153	388	0	0	154	0	0
Stage 1	368	368	-	243	243	-	-	-	-	-	-	-
Stage 2	243	244	-	403	392	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	404	407	679	383	395	890	1165	-	-	1420	-	-
Stage 1	650	620	-	758	703	-	-	-	-	-	-	-
Stage 2	758	702	-	622	605	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	391	391	679	333	379	890	1165	-	-	1420	-	-
Mov Cap-2 Maneuver	391	391	-	333	379	-	-	-	-	-	-	-
Stage 1	625	619	-	728	676	-	-	-	-	-	-	-
Stage 2	729	675	-	557	604	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13	0	1.9	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1165	-	-	553	-	1420	-	-
HCM Lane V/C Ratio	0.039	-	-	0.185	-	0.001	-	-
HCM Control Delay (s)	8.2	-	-	13	0	7.5	-	-
HCM Lane LOS	A	-	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.7	-	0	-	-

Intersection	
Intersection Delay, s/veh	11.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	111	6	48	50	46	8	72	75	206	53	7
Future Vol, veh/h	7	111	6	48	50	46	8	72	75	206	53	7
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	141	8	61	63	58	10	91	95	261	67	9
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.6	10.7	10.2	13.6
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	6%	33%	77%
Vol Thru, %	46%	90%	35%	20%
Vol Right, %	48%	5%	32%	3%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	155	124	144	266
LT Vol	8	7	48	206
Through Vol	72	111	50	53
RT Vol	75	6	46	7
Lane Flow Rate	196	157	182	337
Geometry Grp	1	1	1	1
Degree of Util (X)	0.281	0.247	0.279	0.499
Departure Headway (Hd)	5.155	5.668	5.517	5.339
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	697	633	651	673
Service Time	3.197	3.713	3.562	3.376
HCM Lane V/C Ratio	0.281	0.248	0.28	0.501
HCM Control Delay	10.2	10.6	10.7	13.6
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	1.2	1	1.1	2.8



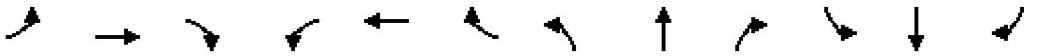
Lane Group	EBT	EBR	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	173	164	77	246	192	33	212	379
v/c Ratio	0.49	0.37	0.32	0.48	0.14	0.07	0.25	0.57
Control Delay	28.5	7.3	21.1	14.5	15.3	10.5	20.2	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.5	7.3	21.1	14.5	15.3	10.5	20.2	6.5
Queue Length 50th (ft)	58	0	14	52	19	6	33	0
Queue Length 95th (ft)	115	38	51	101	53	20	60	47
Internal Link Dist (ft)	345		64		217		210	
Turn Bay Length (ft)		205		125		60		100
Base Capacity (vph)	874	860	244	526	1443	492	1296	819
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.19	0.32	0.47	0.13	0.07	0.16	0.46

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	132	15	139	7	28	31	209	146	17	28	180	322
Future Volume (vph)	132	15	139	7	28	31	209	146	17	28	180	322
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1	5.1		4.6		5.4	5.4		5.4	5.4	5.4
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		0.94		1.00	0.98		1.00	1.00	0.85
Flt Protected		0.96	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1783	1583		1736		1770	3476		1767	3539	1583
Flt Permitted		0.96	1.00		0.99		0.47	1.00		0.63	1.00	1.00
Satd. Flow (perm)		1783	1583		1736		880	3476		1174	3539	1583
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	155	18	164	8	33	36	246	172	20	33	212	379
RTOR Reduction (vph)	0	0	134	0	33	0	0	0	0	0	0	274
Lane Group Flow (vph)	0	173	30	0	44	0	246	192	0	33	212	105
Confl. Peds. (#/hr)									1	1		
Turn Type	Split	NA	Perm	Split	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases			8				6			2		2
Actuated Green, G (s)		11.6	11.6		5.3		31.0	23.2		19.8	17.4	17.4
Effective Green, g (s)		11.6	11.6		5.3		31.0	23.2		19.8	17.4	17.4
Actuated g/C Ratio		0.18	0.18		0.08		0.49	0.37		0.31	0.28	0.28
Clearance Time (s)		5.1	5.1		4.6		5.4	5.4		5.4	5.4	5.4
Vehicle Extension (s)		2.0	2.0		1.0		1.0	5.5		1.0	5.5	5.5
Lane Grp Cap (vph)		328	291		146		548	1280		391	977	437
v/s Ratio Prot		c0.10			c0.03		c0.06	0.06		0.00	0.06	
v/s Ratio Perm			0.02				c0.16			0.02		0.07
v/c Ratio		0.53	0.10		0.30		0.45	0.15		0.08	0.22	0.24
Uniform Delay, d1		23.2	21.4		27.1		9.7	13.3		15.1	17.6	17.7
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.7	0.1		0.4		0.2	0.1		0.0	0.3	0.7
Delay (s)		23.9	21.4		27.5		9.9	13.4		15.1	17.8	18.4
Level of Service		C	C		C		A	B		B	B	B
Approach Delay (s)		22.7			27.5			11.5			18.0	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	63.0	Sum of lost time (s)	20.5
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	132	15	139	7	28	31	209	146	17	28	180	322
Future Volume (veh/h)	132	15	139	7	28	31	209	146	17	28	180	322
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	155	18	164	8	33	36	246	172	20	33	212	379
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	261	30	258	15	61	67	545	977	112	636	1047	466
Arrive On Green	0.16	0.16	0.16	0.08	0.08	0.08	0.12	0.30	0.30	0.11	0.29	0.29
Sat Flow, veh/h	1604	186	1585	178	736	803	1781	3211	369	1781	3554	1582
Grp Volume(v), veh/h	173	0	164	77	0	0	246	94	98	33	212	379
Grp Sat Flow(s),veh/h/ln	1790	0	1585	1717	0	0	1781	1777	1803	1781	1777	1582
Q Serve(g_s), s	5.5	0.0	5.9	2.6	0.0	0.0	5.7	2.4	2.4	0.7	2.7	13.6
Cycle Q Clear(g_c), s	5.5	0.0	5.9	2.6	0.0	0.0	5.7	2.4	2.4	0.7	2.7	13.6
Prop In Lane	0.90		1.00	0.10		0.47	1.00		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	292	0	258	143	0	0	545	541	549	636	1047	466
V/C Ratio(X)	0.59	0.00	0.64	0.54	0.00	0.00	0.45	0.17	0.18	0.05	0.20	0.81
Avail Cap(c_a), veh/h	819	0	725	196	0	0	574	653	663	636	1214	540
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.7	0.0	23.9	26.9	0.0	0.0	12.1	15.6	15.7	10.9	16.2	20.0
Incr Delay (d2), s/veh	0.7	0.0	1.0	1.2	0.0	0.0	0.2	0.4	0.4	0.0	0.3	11.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	2.1	1.1	0.0	0.0	1.9	0.9	0.9	0.2	1.0	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.5	0.0	24.9	28.1	0.0	0.0	12.3	16.1	16.1	10.9	16.5	31.3
LnGrp LOS	C	A	C	C	A	A	B	B	B	B	B	C
Approach Vol, veh/h		337			77			438			624	
Approach Delay, s/veh		24.7			28.1			14.0			25.2	
Approach LOS		C			C			B			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.0	23.4		9.7	12.4	24.0		15.1				
Change Period (Y+Rc), s	5.4	5.4		4.6	5.4	5.4		5.1				
Max Green Setting (Gmax), s	8.6	20.9		7.0	7.0	22.5		28.0				
Max Q Clear Time (g_c+I1), s	7.7	15.6		4.6	2.7	4.4		7.9				
Green Ext Time (p_c), s	0.0	2.4		0.0	0.0	1.8		0.8				

Intersection Summary												
HCM 6th Ctrl Delay			21.9									
HCM 6th LOS			C									



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	65	376	75	264	199	269	39	13	231	50
v/c Ratio	0.42	0.81	0.91	0.65	0.68	0.12	0.04	0.09	0.15	0.07
Control Delay	36.5	34.1	112.3	37.0	46.5	8.6	0.4	40.3	18.2	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.5	34.1	112.3	37.0	46.5	8.6	0.4	40.3	18.2	0.2
Queue Length 50th (ft)	32	133	42	132	108	25	0	7	40	0
Queue Length 95th (ft)	64	210	#107	185	166	73	3	25	83	0
Internal Link Dist (ft)		306		234		460			694	
Turn Bay Length (ft)					125		125	125		125
Base Capacity (vph)	227	628	122	599	483	2266	1021	169	1564	766
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.60	0.61	0.44	0.41	0.12	0.04	0.08	0.15	0.07

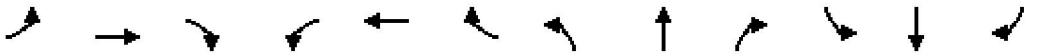
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	111	250	72	214	39	191	258	37	12	222	48
Future Volume (vph)	62	111	250	72	214	39	191	258	37	12	222	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	4.7		4.7	4.7		5.4	5.4	5.4	5.4	5.4	5.4
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.90		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1654		1769	1819		1770	3539	1546	1770	3539	1544
Flt Permitted	0.37	1.00		0.20	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	698	1654		376	1819		1770	3539	1546	1770	3539	1544
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	65	116	260	75	223	41	199	269	39	12	231	50
RTOR Reduction (vph)	0	104	0	0	9	0	0	0	16	0	0	28
Lane Group Flow (vph)	65	272	0	75	255	0	199	269	23	13	231	22
Confl. Peds. (#/hr)			1	1					1	1		1
Confl. Bikes (#/hr)									1			2
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8					6			2
Actuated Green, G (s)	19.8	19.8		19.8	19.8		14.9	53.3	53.3	1.4	39.8	39.8
Effective Green, g (s)	19.8	19.8		19.8	19.8		14.9	53.3	53.3	1.4	39.8	39.8
Actuated g/C Ratio	0.22	0.22		0.22	0.22		0.17	0.59	0.59	0.02	0.44	0.44
Clearance Time (s)	4.7	4.7		4.7	4.7		5.4	5.4	5.4	5.4	5.4	5.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.5	4.0	4.0	2.5	4.0	4.0
Lane Grp Cap (vph)	153	363		82	400		293	2095	915	27	1565	682
v/s Ratio Prot		0.16			0.14		c0.11	0.08		0.01	c0.07	
v/s Ratio Perm	0.09			c0.20					0.01			0.01
v/c Ratio	0.42	0.75		0.91	0.64		0.68	0.13	0.03	0.48	0.15	0.03
Uniform Delay, d1	30.2	32.8		34.3	31.9		35.3	8.1	7.6	43.9	15.0	14.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.9	8.4		70.8	3.3		5.6	0.1	0.1	9.5	0.2	0.1
Delay (s)	32.1	41.2		105.1	35.2		40.9	8.2	7.6	53.5	15.2	14.3
Level of Service	C	D		F	D		D	A	A	D	B	B
Approach Delay (s)		39.9			50.7			21.0			16.7	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	31.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	69.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	111	250	72	214	39	191	258	37	12	222	48
Future Volume (veh/h)	62	111	250	72	214	39	191	258	37	12	222	48
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	65	116	260	75	223	41	199	269	39	12	231	50
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	286	156	349	180	466	86	238	1792	782	36	1389	605
Arrive On Green	0.30	0.30	0.30	0.30	0.30	0.30	0.13	0.50	0.50	0.02	0.39	0.39
Sat Flow, veh/h	1115	513	1149	1006	1537	283	1781	3554	1551	1781	3554	1548
Grp Volume(v), veh/h	65	0	376	75	0	264	199	269	39	12	231	50
Grp Sat Flow(s),veh/h/ln	1115	0	1662	1006	0	1819	1781	1777	1551	1781	1777	1548
Q Serve(g_s), s	4.5	0.0	18.3	6.5	0.0	10.6	9.8	3.7	1.2	0.6	3.8	1.8
Cycle Q Clear(g_c), s	15.2	0.0	18.3	24.9	0.0	10.6	9.8	3.7	1.2	0.6	3.8	1.8
Prop In Lane	1.00		0.69	1.00		0.16	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	286	0	504	180	0	552	238	1792	782	36	1389	605
V/C Ratio(X)	0.23	0.00	0.75	0.42	0.00	0.48	0.84	0.15	0.05	0.33	0.17	0.08
Avail Cap(c_a), veh/h	311	0	541	203	0	592	487	1792	782	170	1389	605
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.7	0.0	28.2	39.4	0.0	25.5	38.0	12.0	11.3	43.5	17.9	17.3
Incr Delay (d2), s/veh	0.4	0.0	5.2	1.5	0.0	0.6	5.7	0.2	0.1	4.0	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	7.8	1.7	0.0	4.6	4.5	1.4	0.4	0.3	1.5	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.1	0.0	33.4	40.9	0.0	26.2	43.8	12.1	11.5	47.5	18.1	17.5
LnGrp LOS	C	A	C	D	A	C	D	B	B	D	B	B
Approach Vol, veh/h		441			339			507			293	
Approach Delay, s/veh		33.2			29.5			24.5			19.2	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	17.4	40.6		32.0	7.2	50.8		32.0				
Change Period (Y+Rc), s	5.4	5.4		* 4.7	5.4	5.4		* 4.7				
Max Green Setting (Gmax), s	24.6	20.6		* 29	8.6	36.6		* 29				
Max Q Clear Time (g_c+I1), s	11.8	5.8		20.3	2.6	5.7		26.9				
Green Ext Time (p_c), s	0.3	1.7		1.8	0.0	2.6		0.5				

Intersection Summary			
HCM 6th Ctrl Delay		27.0	
HCM 6th LOS		C	

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	EBR	WBT	NBL	NBT	SBL	SBR
Lane Group Flow (vph)	127	422	8	392	324	1	302	131
v/c Ratio	0.38	0.44	0.03	0.56	0.15	0.00	0.33	0.24
Control Delay	25.2	2.9	20.6	11.3	8.9	28.0	19.3	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.2	2.9	20.6	11.3	8.9	28.0	19.3	1.2
Queue Length 50th (ft)	30	0	1	51	18	0	37	0
Queue Length 95th (ft)	107	42	14	177	86	5	95	0
Internal Link Dist (ft)	486		78		253		275	
Turn Bay Length (ft)		195		105		100		100
Base Capacity (vph)	734	1083	259	798	2372	275	1829	900
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.39	0.03	0.49	0.14	0.00	0.17	0.15

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	98	12	367	0	2	5	341	280	2	1	263	114
Future Volume (vph)	98	12	367	0	2	5	341	280	2	1	263	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1	5.5		5.1		5.5	5.0		5.5	5.5	5.5
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	1.00		0.92		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		0.90		1.00	1.00		1.00	1.00	0.85
Flt Protected		0.96	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1777	1583		1547		1767	3535		1770	3539	1540
Flt Permitted		0.74	1.00		1.00		0.44	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1381	1583		1547		820	3535		1770	3539	1540
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	113	14	422	0	2	6	392	322	2	1	302	131
RTOR Reduction (vph)	0	0	283	0	6	0	0	1	0	0	0	91
Lane Group Flow (vph)	0	127	139	0	2	0	392	323	0	1	302	40
Confl. Peds. (#/hr)	5					5	4		5			4
Confl. Bikes (#/hr)									2			2
Turn Type	Perm	NA	pm+ov		NA		pm+pt	NA		Prot	NA	Perm
Protected Phases		4	1		3		1	6		5	2	
Permitted Phases	4		4	3			6					2
Actuated Green, G (s)		8.7	20.0		0.9		35.9	29.5		0.9	18.6	18.6
Effective Green, g (s)		8.7	20.0		0.9		35.9	29.5		0.9	18.6	18.6
Actuated g/C Ratio		0.14	0.33		0.01		0.59	0.49		0.01	0.31	0.31
Clearance Time (s)		5.1	5.5		5.1		5.5	5.0		5.5	5.5	5.5
Vehicle Extension (s)		2.0	2.0		2.0		2.0	3.0		2.0	3.0	3.0
Lane Grp Cap (vph)		197	521		22		661	1717		26	1084	471
v/s Ratio Prot			0.05		c0.00		c0.11	0.09		0.00	0.09	
v/s Ratio Perm		c0.09	0.04				c0.24					0.03
v/c Ratio		0.64	0.27		0.09		0.59	0.19		0.04	0.28	0.09
Uniform Delay, d1		24.5	15.0		29.5		6.9	8.8		29.5	16.0	15.0
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		5.3	0.1		0.7		1.0	0.1		0.2	0.1	0.1
Delay (s)		29.9	15.1		30.2		7.9	8.9		29.7	16.1	15.1
Level of Service		C	B		C		A	A		C	B	B
Approach Delay (s)		18.5			30.2			8.3			15.8	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	13.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	60.7	Sum of lost time (s)	21.2
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	14.5
Intersection LOS	B

Approach	EB	WB	NB	SB	SE
Entry Lanes	1	0	1	1	1
Conflicting Circle Lanes	1	1	1	1	1
Adj Approach Flow, veh/h	48	0	676	723	363
Demand Flow Rate, veh/h	49	0	689	737	370
Vehicles Circulating, veh/h	1076	603	421	22	759
Vehicles Exiting, veh/h	53	507	703	581	0
Ped Vol Crossing Leg, #/h	0	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000	1.000
Approach Delay, s/veh	9.5	0.0	20.0	8.7	16.4
Approach LOS	A	-	C	A	C

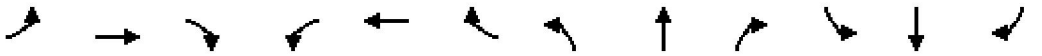
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LR
Assumed Moves	LTR	LTR	LTR	LR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	49	689	737	370
Cap Entry Lane, veh/h	461	898	1349	636
Entry HV Adj Factor	0.975	0.981	0.981	0.981
Flow Entry, veh/h	48	676	723	363
Cap Entry, veh/h	449	881	1324	624
V/C Ratio	0.106	0.767	0.546	0.581
Control Delay, s/veh	9.5	20.0	8.7	16.4
LOS	A	C	A	C
95th %tile Queue, veh	0	8	3	4



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	212	139	14	276	50	447	4	105	624	225
v/c Ratio	0.58	0.20	0.06	0.78	0.39	0.70	0.01	0.61	0.85	0.30
Control Delay	26.0	14.8	29.7	45.0	49.3	28.7	0.0	55.0	33.9	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.0	14.8	29.7	45.0	49.3	28.7	0.0	55.0	33.9	3.8
Queue Length 50th (ft)	75	34	6	121	25	190	0	53	288	1
Queue Length 95th (ft)	116	63	19	177	55	237	0	#105	340	23
Internal Link Dist (ft)		408		339		523			385	
Turn Bay Length (ft)					150		300	200		200
Base Capacity (vph)	379	852	322	480	128	947	849	189	1012	940
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.16	0.04	0.57	0.39	0.47	0.00	0.56	0.62	0.24

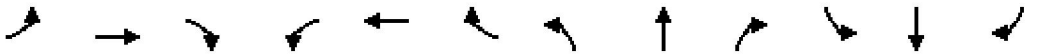
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	161	67	39	11	136	74	38	340	3	80	474	171
Future Volume (vph)	161	67	39	11	136	74	38	340	3	80	474	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.6		4.6	4.6		4.6	5.3	5.3	4.6	5.3	5.3
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.94		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1743		1760	1765		1770	1863	1545	1770	1863	1544
Flt Permitted	0.24	1.00		0.67	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	450	1743		1238	1765		1770	1863	1545	1770	1863	1544
Peak-hour factor, PHF	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Adj. Flow (vph)	212	88	51	14	179	97	50	447	4	105	624	225
RTOR Reduction (vph)	0	23	0	0	22	0	0	0	3	0	0	137
Lane Group Flow (vph)	212	116	0	14	254	0	50	447	1	105	624	88
Confl. Peds. (#/hr)			6	6					4			3
Turn Type	pm+pt	NA		Perm	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4			8					2			6
Actuated Green, G (s)	29.3	29.3		14.2	14.2		2.6	26.4	26.4	5.5	29.3	29.3
Effective Green, g (s)	29.3	29.3		14.2	14.2		2.6	26.4	26.4	5.5	29.3	29.3
Actuated g/C Ratio	0.39	0.39		0.19	0.19		0.03	0.35	0.35	0.07	0.39	0.39
Clearance Time (s)	4.5	4.6		4.6	4.6		4.6	5.3	5.3	4.6	5.3	5.3
Vehicle Extension (s)	3.0	1.5		1.0	1.0		1.5	1.0	1.0	1.5	1.0	1.0
Lane Grp Cap (vph)	359	674		232	331		60	649	538	128	721	597
v/s Ratio Prot	c0.08	0.07			c0.14		0.03	0.24		c0.06	c0.33	
v/s Ratio Perm	0.15			0.01					0.00			0.06
v/c Ratio	0.59	0.17		0.06	0.77		0.83	0.69	0.00	0.82	0.87	0.15
Uniform Delay, d1	17.2	15.2		25.3	29.2		36.3	21.1	16.1	34.6	21.4	15.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.6	0.0		0.0	9.2		58.5	2.4	0.0	31.3	10.3	0.0
Delay (s)	19.7	15.3		25.3	38.4		94.8	23.6	16.1	65.9	31.7	15.1
Level of Service	B	B		C	D		F	C	B	E	C	B
Approach Delay (s)		18.0			37.8			30.6			31.5	
Approach LOS		B			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	29.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	75.7	Sum of lost time (s)	19.0
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	161	67	39	11	136	74	38	340	3	80	474	171
Future Volume (veh/h)	161	67	39	11	136	74	38	340	3	80	474	171
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.98	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	212	88	51	14	179	97	50	447	4	105	624	225
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	357	413	239	337	211	115	80	629	530	134	686	579
Arrive On Green	0.12	0.37	0.37	0.19	0.19	0.19	0.05	0.34	0.34	0.08	0.37	0.37
Sat Flow, veh/h	1781	1107	642	1233	1134	614	1781	1870	1576	1781	1870	1579
Grp Volume(v), veh/h	212	0	139	14	0	276	50	447	4	105	624	225
Grp Sat Flow(s),veh/h/ln	1781	0	1749	1233	0	1748	1781	1870	1576	1781	1870	1579
Q Serve(g_s), s	6.0	0.0	3.6	0.6	0.0	10.3	1.9	14.0	0.1	3.9	21.3	7.1
Cycle Q Clear(g_c), s	6.0	0.0	3.6	0.6	0.0	10.3	1.9	14.0	0.1	3.9	21.3	7.1
Prop In Lane	1.00		0.37	1.00		0.35	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	357	0	652	337	0	326	80	629	530	134	686	579
V/C Ratio(X)	0.59	0.00	0.21	0.04	0.00	0.85	0.62	0.71	0.01	0.78	0.91	0.39
Avail Cap(c_a), veh/h	422	0	858	437	0	468	132	976	822	196	1043	880
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.2	0.0	14.4	22.5	0.0	26.4	31.6	19.5	14.9	30.6	20.3	15.7
Incr Delay (d2), s/veh	1.6	0.0	0.1	0.0	0.0	6.8	2.9	0.6	0.0	6.5	6.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0	1.4	0.2	0.0	4.5	0.8	5.6	0.0	1.8	9.3	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.8	0.0	14.4	22.5	0.0	33.3	34.5	20.0	14.9	37.1	26.3	15.9
LnGrp LOS	B	A	B	C	A	C	C	C	B	D	C	B
Approach Vol, veh/h		351			290			501			954	
Approach Delay, s/veh		17.7			32.7			21.4			25.0	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.7	27.9		29.7	7.6	30.0	12.5	17.1				
Change Period (Y+Rc), s	4.6	5.3		4.6	4.6	5.3	4.5	4.6				
Max Green Setting (Gmax), s	7.4	35.1		33.0	5.0	37.5	10.5	18.0				
Max Q Clear Time (g_c+I1), s	5.9	16.0		5.6	3.9	23.3	8.0	12.3				
Green Ext Time (p_c), s	0.0	0.9		0.4	0.0	1.3	0.1	0.3				

Intersection Summary												
HCM 6th Ctrl Delay			24.0									
HCM 6th LOS			C									

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↰	↑		↰	↑	
Traffic Vol, veh/h	4	0	7	9	0	17	8	260	18	20	232	3
Future Vol, veh/h	4	0	7	9	0	17	8	260	18	20	232	3
Conflicting Peds, #/hr	1	0	0	0	0	1	9	0	0	0	0	9
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	0	8	10	0	19	9	289	20	22	258	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	641	640	269	625	631	300	270	0	0	309	0	0
Stage 1	313	313	-	317	317	-	-	-	-	-	-	-
Stage 2	328	327	-	308	314	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	388	393	770	397	398	740	1293	-	-	1252	-	-
Stage 1	698	657	-	694	654	-	-	-	-	-	-	-
Stage 2	685	648	-	702	656	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	367	380	763	385	384	739	1282	-	-	1252	-	-
Mov Cap-2 Maneuver	367	380	-	385	384	-	-	-	-	-	-	-
Stage 1	687	639	-	689	649	-	-	-	-	-	-	-
Stage 2	662	643	-	683	638	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.7	11.8	0.2	0.6
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1282	-	-	548	561	1252	-	-
HCM Lane V/C Ratio	0.007	-	-	0.022	0.051	0.018	-	-
HCM Control Delay (s)	7.8	-	-	11.7	11.8	7.9	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0.1	-	-

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	3	7	103	9	14	11	308	155	33	254	8
Future Vol, veh/h	6	3	7	103	9	14	11	308	155	33	254	8
Conflicting Peds, #/hr	1	0	0	0	0	1	4	0	2	2	0	4
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	100	75	-	-
Veh in Median Storage, #	-	0	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	3	7	108	9	15	12	324	163	35	267	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	537	858	142	555	699	165	279	0	0	489	0	0
Stage 1	345	345	-	350	350	-	-	-	-	-	-	-
Stage 2	192	513	-	205	349	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	427	293	880	414	362	850	1281	-	-	1070	-	-
Stage 1	644	635	-	639	631	-	-	-	-	-	-	-
Stage 2	791	534	-	778	632	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	397	278	877	392	344	848	1276	-	-	1068	-	-
Mov Cap-2 Maneuver	397	278	-	485	435	-	-	-	-	-	-	-
Stage 1	633	612	-	629	622	-	-	-	-	-	-	-
Stage 2	755	526	-	742	609	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.9	14.6	0.2	0.9
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1276	-	-	472	505	1068	-	-
HCM Lane V/C Ratio	0.009	-	-	0.036	0.263	0.033	-	-
HCM Control Delay (s)	7.8	0	-	12.9	14.6	8.5	-	-
HCM Lane LOS	A	A	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	1	0.1	-	-

Lane Group	EBT	EBR	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	263	163	75	247	238	20	205	240
v/c Ratio	0.58	0.31	0.40	0.59	0.15	0.16	0.27	0.47
Control Delay	30.1	6.4	33.9	32.2	14.2	39.8	27.0	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.1	6.4	33.9	32.2	14.2	39.8	27.0	7.9
Queue Length 50th (ft)	95	0	23	92	26	8	37	0
Queue Length 95th (ft)	211	47	76	204	73	34	86	61
Internal Link Dist (ft)	345		64		217		210	
Turn Bay Length (ft)		205		125		60		100
Base Capacity (vph)	1611	1445	680	912	2581	912	2645	1204
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.11	0.11	0.27	0.09	0.02	0.08	0.20

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	223	30	156	19	22	31	237	202	27	19	197	230
Future Volume (vph)	223	30	156	19	22	31	237	202	27	19	197	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5	3.5		3.5		3.5	4.0		3.5	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	1.00		1.00		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		0.94		1.00	0.98		1.00	1.00	0.85
Flt Protected		0.96	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1784	1583		1732		1770	3463		1770	3539	1539
Flt Permitted		0.96	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1784	1583		1732		1770	3463		1770	3539	1539
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	232	31	162	20	23	32	247	210	28	20	205	240
RTOR Reduction (vph)	0	0	123	0	16	0	0	0	0	0	0	182
Lane Group Flow (vph)	0	263	40	0	59	0	247	238	0	20	205	58
Confl. Peds. (#/hr)									4			2
Confl. Bikes (#/hr)									1			3
Turn Type	Split	NA	Perm	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases			8									2
Actuated Green, G (s)		17.2	17.2		5.4		15.8	30.9		1.8	16.9	16.9
Effective Green, g (s)		17.2	17.2		5.4		15.8	30.9		1.8	16.9	16.9
Actuated g/C Ratio		0.25	0.25		0.08		0.23	0.44		0.03	0.24	0.24
Clearance Time (s)		3.5	3.5		3.5		3.5	4.0		3.5	4.0	4.0
Vehicle Extension (s)		2.0	2.0		1.0		1.0	5.5		1.0	5.5	5.5
Lane Grp Cap (vph)		439	390		133		400	1533		45	856	372
v/s Ratio Prot		c0.15			c0.03		c0.14	0.07		0.01	c0.06	
v/s Ratio Perm			0.03									0.04
v/c Ratio		0.60	0.10		0.45		0.62	0.16		0.44	0.24	0.16
Uniform Delay, d1		23.3	20.3		30.8		24.3	11.6		33.5	21.3	20.8
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		1.5	0.0		0.9		2.0	0.1		2.5	0.4	0.5
Delay (s)		24.7	20.4		31.6		26.3	11.8		36.0	21.6	21.3
Level of Service		C	C		C		C	B		D	C	C
Approach Delay (s)		23.1			31.6			19.2			22.1	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	21.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	69.8	Sum of lost time (s)	14.5
Intersection Capacity Utilization	49.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	223	30	156	19	22	31	237	202	27	19	197	230
Future Volume (veh/h)	223	30	156	19	22	31	237	202	27	19	197	230
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	232	31	162	20	23	32	247	210	28	20	205	240
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	319	43	320	25	29	40	302	1274	167	90	1016	441
Arrive On Green	0.20	0.20	0.20	0.06	0.06	0.06	0.17	0.40	0.40	0.05	0.29	0.29
Sat Flow, veh/h	1580	211	1585	458	526	732	1781	3147	413	1781	3554	1542
Grp Volume(v), veh/h	263	0	162	75	0	0	247	117	121	20	205	240
Grp Sat Flow(s),veh/h/ln	1791	0	1585	1716	0	0	1781	1777	1783	1781	1777	1542
Q Serve(g_s), s	6.9	0.0	4.6	2.2	0.0	0.0	6.7	2.1	2.2	0.5	2.2	6.6
Cycle Q Clear(g_c), s	6.9	0.0	4.6	2.2	0.0	0.0	6.7	2.1	2.2	0.5	2.2	6.6
Prop In Lane	0.88		1.00	0.27		0.43	1.00		0.23	1.00		1.00
Lane Grp Cap(c), veh/h	361	0	320	95	0	0	302	719	722	90	1016	441
V/C Ratio(X)	0.73	0.00	0.51	0.79	0.00	0.00	0.82	0.16	0.17	0.22	0.20	0.54
Avail Cap(c_a), veh/h	2275	0	2013	817	0	0	1131	1727	1734	1131	3455	1499
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.8	0.0	17.9	23.5	0.0	0.0	20.2	9.6	9.6	23.0	13.6	15.2
Incr Delay (d2), s/veh	1.1	0.0	0.5	5.4	0.0	0.0	2.1	0.3	0.3	0.5	0.3	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	1.5	0.9	0.0	0.0	2.6	0.7	0.7	0.2	0.8	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.9	0.0	18.4	29.0	0.0	0.0	22.3	9.8	9.9	23.4	13.9	18.1
LnGrp LOS	B	A	B	C	A	A	C	A	A	C	B	B
Approach Vol, veh/h		425			75			485			465	
Approach Delay, s/veh		19.3			29.0			16.2			16.5	
Approach LOS		B			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.0	18.4		6.3	6.0	24.4		13.7				
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5				
Max Green Setting (Gmax), s	32.0	49.0		24.0	32.0	49.0		64.0				
Max Q Clear Time (g_c+I1), s	8.7	8.6		4.2	2.5	4.2		8.9				
Green Ext Time (p_c), s	0.1	5.6		0.1	0.0	3.2		1.3				

Intersection Summary			
HCM 6th Ctrl Delay		17.9	
HCM 6th LOS		B	



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	314	291	242	43	271	467	90	34	401	99
v/c Ratio	0.85	0.53	0.77	0.11	0.78	0.29	0.12	0.35	0.42	0.19
Control Delay	60.6	8.1	55.4	0.6	52.9	19.2	4.4	56.2	33.8	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.6	8.1	55.4	0.6	52.9	19.2	4.4	56.2	33.8	3.9
Queue Length 50th (ft)	185	0	147	0	164	111	0	21	118	0
Queue Length 95th (ft)	#342	69	227	0	238	146	29	#58	174	25
Internal Link Dist (ft)	306		234			460			694	
Turn Bay Length (ft)		150		160	125		125	125		125
Base Capacity (vph)	382	555	366	422	451	1634	763	98	964	512
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.52	0.66	0.10	0.60	0.29	0.12	0.35	0.42	0.19

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	96	205	279	105	128	41	260	448	86	33	385	95
Future Volume (vph)	96	205	279	105	128	41	260	448	86	33	385	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	3.5	4.0	4.0	3.5	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.98		1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.97
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.98	1.00		0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1834	1558		1822	1583	1770	3539	1545	1770	3539	1532
Flt Permitted		0.98	1.00		0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1834	1558		1822	1583	1770	3539	1545	1770	3539	1532
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	100	214	291	109	133	43	271	467	90	34	401	99
RTOR Reduction (vph)	0	0	232	0	0	36	0	0	50	0	0	72
Lane Group Flow (vph)	0	314	59	0	242	7	271	467	40	34	401	27
Confl. Peds. (#/hr)			3	3					1			3
Confl. Bikes (#/hr)									1			2
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3			6			2
Actuated Green, G (s)		20.2	20.2		17.3	17.3	19.7	44.2	44.2	2.8	27.3	27.3
Effective Green, g (s)		20.2	20.2		17.3	17.3	19.7	44.2	44.2	2.8	27.3	27.3
Actuated g/C Ratio		0.20	0.20		0.17	0.17	0.20	0.44	0.44	0.03	0.27	0.27
Clearance Time (s)		4.0	4.0		4.0	4.0	3.5	4.0	4.0	3.5	4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	2.5	4.0	4.0	2.5	4.0	4.0
Lane Grp Cap (vph)		370	314		315	273	348	1564	682	49	966	418
v/s Ratio Prot		c0.17			c0.13		c0.15	0.13		0.02	c0.11	
v/s Ratio Perm			0.04			0.00			0.03			0.02
v/c Ratio		0.85	0.19		0.77	0.03	0.78	0.30	0.06	0.69	0.42	0.06
Uniform Delay, d1		38.4	33.1		39.4	34.4	38.1	17.9	16.0	48.2	29.8	26.9
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		16.4	0.3		10.7	0.0	10.1	0.5	0.2	32.5	1.3	0.3
Delay (s)		54.8	33.4		50.2	34.4	48.2	18.4	16.1	80.7	31.1	27.2
Level of Service		D	C		D	C	D	B	B	F	C	C
Approach Delay (s)		44.5			47.8			27.9			33.5	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	36.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	69.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBT	EBR	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	161	273	4	387	502	496	245
v/c Ratio	0.65	0.25	0.03	0.57	0.21	0.63	0.55
Control Delay	44.7	1.9	39.8	27.2	6.4	32.9	17.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.7	1.9	39.8	27.2	6.4	32.9	17.2
Queue Length 50th (ft)	72	0	1	140	38	112	38
Queue Length 95th (ft)	166	36	13	#380	110	208	131
Internal Link Dist (ft)	486		78		253	275	
Turn Bay Length (ft)		195		105			100
Base Capacity (vph)	591	1098	687	678	2405	1808	835
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.25	0.01	0.57	0.21	0.27	0.29

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	139	7	248	0	3	1	352	457	0	0	451	223
Future Volume (vph)	139	7	248	0	3	1	352	457	0	0	451	223
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0		5.0	5.0			5.0	5.0
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95			0.95	1.00
Frpb, ped/bikes		1.00	1.00		0.98		1.00	1.00			1.00	0.96
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00			1.00	1.00
Frt		1.00	0.85		0.97		1.00	1.00			1.00	0.85
Flt Protected		0.95	1.00		1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)		1775	1583		1772		1770	3539			3539	1515
Flt Permitted		0.73	1.00		1.00		0.95	1.00			1.00	1.00
Satd. Flow (perm)		1365	1583		1772		1770	3539			3539	1515
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	153	8	273	0	3	1	387	502	0	0	496	245
RTOR Reduction (vph)	0	0	126	0	1	0	0	0	0	0	0	116
Lane Group Flow (vph)	0	161	147	0	3	0	387	502	0	0	496	129
Confl. Peds. (#/hr)	2					2			3			10
Confl. Bikes (#/hr)									3			3
Turn Type	Perm	NA	pm+ov		NA		Prot	NA		Prot	NA	Perm
Protected Phases		4	1		3		1	6		5	2	
Permitted Phases	4		4	3								2
Actuated Green, G (s)		14.7	45.5		0.8		30.8	53.8			18.0	18.0
Effective Green, g (s)		14.7	45.5		0.8		30.8	53.8			18.0	18.0
Actuated g/C Ratio		0.17	0.54		0.01		0.37	0.64			0.21	0.21
Clearance Time (s)		5.0	5.0		5.0		5.0	5.0			5.0	5.0
Vehicle Extension (s)		2.0	2.0		2.0		2.0	3.0			3.0	3.0
Lane Grp Cap (vph)		238	948		16		646	2258			755	323
v/s Ratio Prot			0.06		c0.00		c0.22	0.14			c0.14	
v/s Ratio Perm		c0.12	0.04									0.08
v/c Ratio		0.68	0.16		0.19		0.60	0.22			0.66	0.40
Uniform Delay, d1		32.6	9.7		41.4		21.7	6.4			30.3	28.5
Progression Factor		1.00	1.00		1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2		5.9	0.0		2.1		1.0	0.1			2.1	0.8
Delay (s)		38.4	9.8		43.5		22.7	6.5			32.4	29.3
Level of Service		D	A		D		C	A			C	C
Approach Delay (s)		20.4			43.5			13.6			31.4	
Approach LOS		C			D			B			C	

Intersection Summary			
HCM 2000 Control Delay	21.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	84.3	Sum of lost time (s)	20.0
Intersection Capacity Utilization	61.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

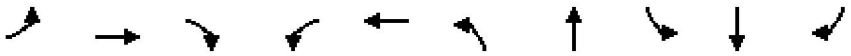
Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	40	2	64	1	2	10	58	643	0	4	553	28
Future Vol, veh/h	40	2	64	1	2	10	58	643	0	4	553	28
Conflicting Peds, #/hr	5	0	0	0	0	5	1	0	13	13	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	0
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	49	2	78	1	2	12	71	784	0	5	674	34

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1225	1624	338	1287	1658	410	709	0	0	797	0	0
Stage 1	685	685	-	939	939	-	-	-	-	-	-	-
Stage 2	540	939	-	348	719	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	135	102	658	121	97	591	886	-	-	821	-	-
Stage 1	404	447	-	284	341	-	-	-	-	-	-	-
Stage 2	494	341	-	641	431	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	122	92	657	98	88	581	885	-	-	811	-	-
Mov Cap-2 Maneuver	238	205	-	193	191	-	-	-	-	-	-	-
Stage 1	371	444	-	258	310	-	-	-	-	-	-	-
Stage 2	439	310	-	558	428	-	-	-	-	-	-	-

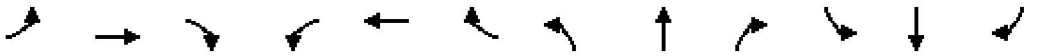
Approach	EB	WB	NB	SB
HCM Control Delay, s	19	14.5	0.8	0.1
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	885	-	-	385	396	811	-	-
HCM Lane V/C Ratio	0.08	-	-	0.336	0.04	0.006	-	-
HCM Control Delay (s)	9.4	-	-	19	14.5	9.5	-	-
HCM Lane LOS	A	-	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	1.5	0.1	0	-	-



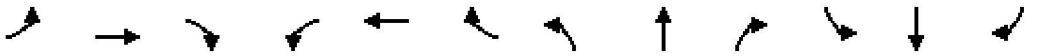
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	101	148	142	7	97	92	138	11	122	146
v/c Ratio	0.28	0.28	0.26	0.02	0.19	0.27	0.17	0.04	0.25	0.28
Control Delay	16.4	15.8	4.5	13.3	14.1	21.8	11.0	23.3	18.7	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.4	15.8	4.5	13.3	14.1	21.8	11.0	23.3	18.7	6.1
Queue Length 50th (ft)	21	31	0	1	19	21	15	3	25	0
Queue Length 95th (ft)	58	76	31	9	52	72	82	18	84	40
Internal Link Dist (ft)		435			214		337		398	
Turn Bay Length (ft)	265		265	155		120		160		160
Base Capacity (vph)	911	1313	1158	871	1286	1219	1504	1219	1526	1323
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.11	0.12	0.01	0.08	0.08	0.09	0.01	0.08	0.11

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	135	129	6	77	11	84	113	13	10	111	133
Future Volume (vph)	92	135	129	6	77	11	84	113	13	10	111	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	4.6	4.6	4.6		4.0	5.7		4.0	5.7	5.7
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1823		1770	1834		1770	1863	1583
Flt Permitted	0.69	1.00	1.00	0.66	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1293	1863	1583	1235	1823		1770	1834		1770	1863	1583
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	101	148	142	7	85	12	92	124	14	11	122	146
RTOR Reduction (vph)	0	0	104	0	4	0	0	3	0	0	0	103
Lane Group Flow (vph)	101	148	38	7	93	0	92	135	0	11	122	43
Confl. Peds. (#/hr)						3						
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								6
Actuated Green, G (s)	13.1	13.1	13.1	13.1	13.1		6.8	20.2		1.0	14.4	14.4
Effective Green, g (s)	13.1	13.1	13.1	13.1	13.1		6.8	20.2		1.0	14.4	14.4
Actuated g/C Ratio	0.27	0.27	0.27	0.27	0.27		0.14	0.42		0.02	0.30	0.30
Clearance Time (s)	4.6	4.6	4.6	4.6	4.6		4.0	5.7		4.0	5.7	5.7
Vehicle Extension (s)	5.0	5.0	5.0	5.0	5.0		3.5	5.8		3.5	5.8	5.8
Lane Grp Cap (vph)	348	502	426	332	491		247	762		36	552	469
v/s Ratio Prot		c0.08			0.05		c0.05	0.07		0.01	c0.07	
v/s Ratio Perm	0.08		0.02	0.01								0.03
v/c Ratio	0.29	0.29	0.09	0.02	0.19		0.37	0.18		0.31	0.22	0.09
Uniform Delay, d1	14.1	14.1	13.3	13.0	13.7		19.0	9.0		23.5	12.9	12.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.0	0.7	0.2	0.1	0.4		1.1	0.3		5.6	0.5	0.2
Delay (s)	15.0	14.8	13.5	13.1	14.1		20.1	9.3		29.1	13.4	12.6
Level of Service	B	B	B	B	B		C	A		C	B	B
Approach Delay (s)		14.4			14.0			13.6			13.6	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	13.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	48.6	Sum of lost time (s)	14.3
Intersection Capacity Utilization	32.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	92	135	129	6	77	11	84	113	13	10	111	133
Future Volume (veh/h)	92	135	129	6	77	11	84	113	13	10	111	133
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	101	148	142	7	85	12	92	124	14	11	122	146
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	501	500	423	432	428	60	151	500	56	26	435	368
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.08	0.30	0.30	0.01	0.23	0.23
Sat Flow, veh/h	1293	1870	1585	1089	1602	226	1781	1650	186	1781	1870	1585
Grp Volume(v), veh/h	101	148	142	7	0	97	92	0	138	11	122	146
Grp Sat Flow(s),veh/h/ln	1293	1870	1585	1089	0	1828	1781	0	1837	1781	1870	1585
Q Serve(g_s), s	2.3	2.2	2.5	0.2	0.0	1.4	1.7	0.0	1.9	0.2	1.8	2.7
Cycle Q Clear(g_c), s	3.7	2.2	2.5	2.3	0.0	1.4	1.7	0.0	1.9	0.2	1.8	2.7
Prop In Lane	1.00		1.00	1.00		0.12	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	501	500	423	432	0	488	151	0	556	26	435	368
V/C Ratio(X)	0.20	0.30	0.34	0.02	0.00	0.20	0.61	0.00	0.25	0.43	0.28	0.40
Avail Cap(c_a), veh/h	1320	1685	1428	1122	0	1647	1553	0	2028	1553	2065	1750
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.2	10.0	10.2	11.0	0.0	9.8	15.2	0.0	9.0	16.8	10.8	11.2
Incr Delay (d2), s/veh	0.4	0.7	1.0	0.0	0.0	0.4	4.7	0.0	0.7	12.8	1.1	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.7	0.7	0.0	0.0	0.4	0.7	0.0	0.6	0.2	0.6	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.6	10.7	11.1	11.0	0.0	10.2	19.9	0.0	9.8	29.7	12.0	13.4
LnGrp LOS	B	B	B	B	A	B	B	A	A	C	B	B
Approach Vol, veh/h		391			104			230			279	
Approach Delay, s/veh		11.1			10.2			13.8			13.4	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.5	16.1		13.8	6.9	13.7		13.8				
Change Period (Y+Rc), s	4.0	5.7		4.6	4.0	5.7		4.6				
Max Green Setting (Gmax), s	30.0	38.0		31.0	30.0	38.0		31.0				
Max Q Clear Time (g_c+I1), s	2.2	3.9		5.7	3.7	4.7		4.3				
Green Ext Time (p_c), s	0.0	1.7		3.4	0.3	3.1		0.9				

Intersection Summary												
HCM 6th Ctrl Delay			12.3									
HCM 6th LOS			B									

8: Ardilla Ave/Traffic Way & US 101 SB Ramp Performance by approach

Approach	EB	NB	SB	SE	All
Denied Del/Veh (s)	0.1	0.5	0.3	0.4	0.4
Total Del/Veh (s)	3.8	1.8	4.8	15.1	5.6

Intersection	
Int Delay, s/veh	3.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	41	70	150	39	47	118
Future Vol, veh/h	41	70	150	39	47	118
Conflicting Peds, #/hr	0	1	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	45	76	163	42	51	128

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	415	186	0	0	206	0
Stage 1	185	-	-	-	-	-
Stage 2	230	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	594	856	-	-	1365	-
Stage 1	847	-	-	-	-	-
Stage 2	808	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	570	854	-	-	1364	-
Mov Cap-2 Maneuver	570	-	-	-	-	-
Stage 1	846	-	-	-	-	-
Stage 2	776	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11	0	2.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	721	1364	-
HCM Lane V/C Ratio	-	-	0.167	0.037	-
HCM Control Delay (s)	-	-	11	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.6	0.1	-

Lane Group	EBT	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	81	130	7	444	93	41	439
v/c Ratio	0.19	0.35	0.03	0.46	0.11	0.16	0.41
Control Delay	14.7	16.7	27.0	14.2	6.9	25.1	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.7	16.7	27.0	14.2	6.9	25.1	11.4
Queue Length 50th (ft)	10	16	1	47	3	6	46
Queue Length 95th (ft)	53	79	16	283	41	49	265
Internal Link Dist (ft)	369	467		389			478
Turn Bay Length (ft)			200		105	200	
Base Capacity (vph)	1361	1184	958	1782	1464	958	1769
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.11	0.01	0.25	0.06	0.04	0.25

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	47	14	60	31	34	7	426	89	39	408	13
Future Volume (vph)	16	47	14	60	31	34	7	426	89	39	408	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6		4.6	5.3	5.3	4.1	5.3	
Lane Util. Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes		1.00			0.99		1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Frt		0.97			0.96		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.99			0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1790			1742		1770	1863	1543	1770	1852	
Flt Permitted		0.91			0.81		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1653			1436		1770	1863	1543	1770	1852	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	17	49	15	62	32	35	7	444	93	41	425	14
RTOR Reduction (vph)	0	6	0	0	11	0	0	0	31	0	1	0
Lane Group Flow (vph)	0	75	0	0	119	0	7	444	62	41	438	0
Confl. Peds. (#/hr)			1	1					4			4
Confl. Bikes (#/hr)						1						
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			
Actuated Green, G (s)		9.0			9.0		0.6	22.1	22.1	2.0	23.0	
Effective Green, g (s)		9.0			9.0		0.6	22.1	22.1	2.0	23.0	
Actuated g/C Ratio		0.19			0.19		0.01	0.47	0.47	0.04	0.49	
Clearance Time (s)		4.6			4.6		4.6	5.3	5.3	4.1	5.3	
Vehicle Extension (s)		1.0			1.0		1.5	1.0	1.0	1.5	1.0	
Lane Grp Cap (vph)		315			274		22	874	723	75	904	
v/s Ratio Prot							0.00	c0.24		c0.02	0.24	
v/s Ratio Perm		0.05			c0.08				0.04			
v/c Ratio		0.24			0.43		0.32	0.51	0.09	0.55	0.48	
Uniform Delay, d1		16.1			16.8		23.0	8.7	6.9	22.1	8.1	
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.1			0.4		3.0	0.2	0.0	4.3	0.1	
Delay (s)		16.3			17.2		26.1	8.9	6.9	26.4	8.2	
Level of Service		B			B		C	A	A	C	A	
Approach Delay (s)		16.3			17.2			8.8			9.8	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	10.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	47.1	Sum of lost time (s)	14.5
Intersection Capacity Utilization	52.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	47	14	60	31	34	7	426	89	39	408	13
Future Volume (veh/h)	16	47	14	60	31	34	7	426	89	39	408	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	17	49	15	62	32	35	7	444	93	41	425	14
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	176	235	62	277	112	82	17	588	495	85	606	20
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.01	0.31	0.31	0.05	0.34	0.34
Sat Flow, veh/h	195	1216	321	555	581	423	1781	1870	1575	1781	1800	59
Grp Volume(v), veh/h	81	0	0	129	0	0	7	444	93	41	0	439
Grp Sat Flow(s),veh/h/ln	1733	0	0	1559	0	0	1781	1870	1575	1781	0	1859
Q Serve(g_s), s	0.0	0.0	0.0	0.7	0.0	0.0	0.1	6.7	1.4	0.7	0.0	6.5
Cycle Q Clear(g_c), s	1.2	0.0	0.0	2.1	0.0	0.0	0.1	6.7	1.4	0.7	0.0	6.5
Prop In Lane	0.21		0.19	0.48		0.27	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	473	0	0	471	0	0	17	588	495	85	0	626
V/C Ratio(X)	0.17	0.00	0.00	0.27	0.00	0.00	0.42	0.76	0.19	0.48	0.00	0.70
Avail Cap(c_a), veh/h	1902	0	0	1702	0	0	1131	3682	3101	1131	0	3661
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.7	0.0	0.0	11.1	0.0	0.0	15.5	9.7	7.9	14.6	0.0	9.1
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.1	0.0	0.0	6.0	0.8	0.1	1.6	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.0	0.6	0.0	0.0	0.1	1.8	0.3	0.3	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.8	0.0	0.0	11.2	0.0	0.0	21.5	10.5	7.9	16.2	0.0	9.6
LnGrp LOS	B	A	A	B	A	A	C	B	A	B	A	A
Approach Vol, veh/h		81			129			544			480	
Approach Delay, s/veh		10.8			11.2			10.2			10.2	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.6	15.2		10.7	4.9	15.9		10.7				
Change Period (Y+Rc), s	4.1	5.3		4.6	4.6	5.3		4.6				
Max Green Setting (Gmax), s	20.0	62.0		33.0	20.0	62.0		32.0				
Max Q Clear Time (g_c+I1), s	2.7	8.7		3.2	2.1	8.5		4.1				
Green Ext Time (p_c), s	0.0	0.9		0.1	0.0	0.9		0.3				

Intersection Summary												
HCM 6th Ctrl Delay			10.3									
HCM 6th LOS			B									



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	203	55	82	53	43	499	8	53	492	146
v/c Ratio	0.55	0.15	0.40	0.23	0.27	0.73	0.01	0.31	0.71	0.24
Control Delay	38.7	9.0	45.8	12.1	46.2	31.1	0.0	45.9	29.5	11.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.7	9.0	45.8	12.1	46.2	31.1	0.0	45.9	29.5	11.5
Queue Length 50th (ft)	90	0	38	0	20	210	0	25	203	22
Queue Length 95th (ft)	211	30	109	32	68	428	0	79	413	76
Internal Link Dist (ft)	408		339			523			385	
Turn Bay Length (ft)		35		50	150		300	200		200
Base Capacity (vph)	1005	868	1032	908	615	1681	1374	615	1681	1365
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.06	0.08	0.06	0.07	0.30	0.01	0.09	0.29	0.11

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	115	70	50	6	68	48	39	454	7	48	448	133
Future Volume (vph)	115	70	50	6	68	48	39	454	7	48	448	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6		4.6	4.6	4.6	5.3	5.3	4.6	5.3	5.3
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00	0.96		1.00	1.00	1.00	1.00	0.97	1.00	1.00	0.97
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.97	1.00		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1807	1514		1855	1583	1770	1863	1538	1770	1863	1533
Flt Permitted		0.97	1.00		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1807	1514		1855	1583	1770	1863	1538	1770	1863	1533
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	126	77	55	7	75	53	43	499	8	53	492	146
RTOR Reduction (vph)	0	0	44	0	0	47	0	0	5	0	0	48
Lane Group Flow (vph)	0	203	11	0	82	6	43	499	3	53	492	98
Confl. Peds. (#/hr)			10	10					8			7
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7			8			2			6
Actuated Green, G (s)		16.3	16.3		8.8	8.8	5.5	29.1	29.1	6.0	29.6	29.6
Effective Green, g (s)		16.3	16.3		8.8	8.8	5.5	29.1	29.1	6.0	29.6	29.6
Actuated g/C Ratio		0.21	0.21		0.11	0.11	0.07	0.37	0.37	0.08	0.37	0.37
Clearance Time (s)		4.6	4.6		4.6	4.6	4.6	5.3	5.3	4.6	5.3	5.3
Vehicle Extension (s)		1.5	1.5		1.0	1.0	1.5	1.0	1.0	1.5	1.0	1.0
Lane Grp Cap (vph)		371	311		205	175	122	683	564	133	695	572
v/s Ratio Prot		c0.11			c0.04		0.02	c0.27		c0.03	0.26	
v/s Ratio Perm			0.01			0.00			0.00			0.06
v/c Ratio		0.55	0.04		0.40	0.03	0.35	0.73	0.01	0.40	0.71	0.17
Uniform Delay, d1		28.2	25.2		32.8	31.5	35.2	21.7	15.9	34.9	21.2	16.6
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.9	0.0		0.5	0.0	0.6	3.5	0.0	0.7	2.7	0.1
Delay (s)		29.1	25.2		33.3	31.5	35.8	25.2	15.9	35.6	23.9	16.7
Level of Service		C	C		C	C	D	C	B	D	C	B
Approach Delay (s)		28.3			32.6			25.9			23.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	25.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	79.3	Sum of lost time (s)	19.1
Intersection Capacity Utilization	58.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	33	0	38	1	2	0	80	321	1	0	170	32
Future Vol, veh/h	33	0	38	1	2	0	80	321	1	0	170	32
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	285	-	-	165	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	37	0	43	1	2	0	90	361	1	0	191	36

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	752	751	209	773	769	362	227	0	0	362	0	0
Stage 1	209	209	-	542	542	-	-	-	-	-	-	-
Stage 2	543	542	-	231	227	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	327	340	831	316	332	683	1341	-	-	1197	-	-
Stage 1	793	729	-	525	520	-	-	-	-	-	-	-
Stage 2	524	520	-	772	716	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	309	317	831	284	310	683	1341	-	-	1197	-	-
Mov Cap-2 Maneuver	309	317	-	284	310	-	-	-	-	-	-	-
Stage 1	740	729	-	490	485	-	-	-	-	-	-	-
Stage 2	487	485	-	732	716	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.3	17.1	1.6	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1341	-	-	466	301	1197	-	-
HCM Lane V/C Ratio	0.067	-	-	0.171	0.011	-	-	-
HCM Control Delay (s)	7.9	-	-	14.3	17.1	0	-	-
HCM Lane LOS	A	-	-	B	C	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.6	0	0	-	-

Intersection	
Intersection Delay, s/veh	8.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	100	10	36	110	50	5	31	40	78	36	8
Future Vol, veh/h	6	100	10	36	110	50	5	31	40	78	36	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	109	11	39	120	54	5	34	43	85	39	9
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.6	9.1	8.2	9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	5%	18%	64%
Vol Thru, %	41%	86%	56%	30%
Vol Right, %	53%	9%	26%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	76	116	196	122
LT Vol	5	6	36	78
Through Vol	31	100	110	36
RT Vol	40	10	50	8
Lane Flow Rate	83	126	213	133
Geometry Grp	1	1	1	1
Degree of Util (X)	0.105	0.163	0.265	0.181
Departure Headway (Hd)	4.584	4.658	4.486	4.902
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	779	768	799	731
Service Time	2.63	2.699	2.524	2.944
HCM Lane V/C Ratio	0.107	0.164	0.267	0.182
HCM Control Delay	8.2	8.6	9.1	9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	0.6	1.1	0.7



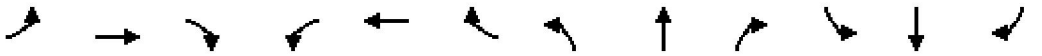
Lane Group	EBT	EBR	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	263	163	75	247	238	20	205	240
v/c Ratio	0.61	0.32	0.30	0.47	0.16	0.04	0.25	0.45
Control Delay	27.7	6.1	22.4	16.0	13.8	11.8	21.1	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.7	6.1	22.4	16.0	13.8	11.8	21.1	6.6
Queue Length 50th (ft)	89	0	15	58	27	4	33	0
Queue Length 95th (ft)	174	41	58	125	72	17	66	51
Internal Link Dist (ft)	345		64		217		210	
Turn Bay Length (ft)		205		125		60		100
Base Capacity (vph)	909	885	248	522	1574	467	1409	756
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.18	0.30	0.47	0.15	0.04	0.15	0.32

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	223	30	156	19	22	31	237	202	27	19	197	230
Future Volume (vph)	223	30	156	19	22	31	237	202	27	19	197	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1	5.1		4.6		5.4	5.4		4.5	5.4	5.4
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	1.00		1.00		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		0.94		1.00	0.98		1.00	1.00	0.85
Flt Protected		0.96	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1784	1583		1732		1770	3464		1770	3539	1540
Flt Permitted		0.96	1.00		0.99		0.47	1.00		0.60	1.00	1.00
Satd. Flow (perm)		1784	1583		1732		882	3464		1125	3539	1540
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	232	31	162	20	23	32	247	210	28	20	205	240
RTOR Reduction (vph)	0	0	127	0	30	0	0	0	0	0	0	175
Lane Group Flow (vph)	0	263	36	0	45	0	247	238	0	20	205	65
Confl. Peds. (#/hr)									4			2
Confl. Bikes (#/hr)									1			3
Turn Type	Split	NA	Perm	Split	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases			8				6			2		2
Actuated Green, G (s)		14.0	14.0		3.6		30.3	24.9		18.0	17.1	17.1
Effective Green, g (s)		14.0	14.0		3.6		30.3	24.9		18.0	17.1	17.1
Actuated g/C Ratio		0.22	0.22		0.06		0.48	0.40		0.29	0.27	0.27
Clearance Time (s)		5.1	5.1		4.6		5.4	5.4		4.5	5.4	5.4
Vehicle Extension (s)		2.0	2.0		1.0		3.0	5.5		3.0	5.5	5.5
Lane Grp Cap (vph)		396	351		98		534	1369		330	960	418
v/s Ratio Prot		c0.15			c0.03		c0.06	0.07		0.00	0.06	
v/s Ratio Perm			0.02				c0.17			0.02		0.04
v/c Ratio		0.66	0.10		0.46		0.46	0.17		0.06	0.21	0.16
Uniform Delay, d1		22.4	19.5		28.8		10.2	12.4		16.3	17.7	17.5
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		3.2	0.0		1.2		0.6	0.1		0.1	0.3	0.4
Delay (s)		25.6	19.6		30.0		10.8	12.5		16.3	18.0	17.9
Level of Service		C	B		C		B	B		B	B	B
Approach Delay (s)		23.3			30.0			11.6			17.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	63.0	Sum of lost time (s)	20.5
Intersection Capacity Utilization	55.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	223	30	156	19	22	31	237	202	27	19	197	230
Future Volume (veh/h)	223	30	156	19	22	31	237	202	27	19	197	230
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	0.99		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	232	31	162	20	23	32	247	210	28	20	205	240
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	305	41	306	39	45	62	534	1113	146	446	846	366
Arrive On Green	0.19	0.19	0.19	0.08	0.08	0.08	0.13	0.35	0.35	0.03	0.24	0.24
Sat Flow, veh/h	1580	211	1585	458	526	732	1781	3146	413	1781	3554	1539
Grp Volume(v), veh/h	263	0	162	75	0	0	247	117	121	20	205	240
Grp Sat Flow(s),veh/h/ln	1791	0	1585	1716	0	0	1781	1777	1783	1781	1777	1539
Q Serve(g_s), s	8.0	0.0	5.3	2.4	0.0	0.0	5.6	2.6	2.7	0.5	2.7	8.1
Cycle Q Clear(g_c), s	8.0	0.0	5.3	2.4	0.0	0.0	5.6	2.6	2.7	0.5	2.7	8.1
Prop In Lane	0.88		1.00	0.27		0.43	1.00		0.23	1.00		1.00
Lane Grp Cap(c), veh/h	346	0	306	146	0	0	534	628	630	446	846	366
V/C Ratio(X)	0.76	0.00	0.53	0.52	0.00	0.00	0.46	0.19	0.19	0.04	0.24	0.66
Avail Cap(c_a), veh/h	869	0	769	208	0	0	540	751	754	580	1349	584
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.0	0.0	20.9	25.3	0.0	0.0	12.3	12.9	12.9	15.7	17.8	19.8
Incr Delay (d2), s/veh	1.3	0.0	0.5	1.0	0.0	0.0	0.6	0.4	0.4	0.0	0.4	5.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	0.0	1.8	0.9	0.0	0.0	1.9	0.9	1.0	0.2	1.0	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.3	0.0	21.4	26.3	0.0	0.0	12.9	13.3	13.3	15.7	18.2	25.2
LnGrp LOS	C	A	C	C	A	A	B	B	B	B	B	C
Approach Vol, veh/h		425			75			485			465	
Approach Delay, s/veh		22.6			26.3			13.1			21.7	
Approach LOS		C			C			B			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.8	19.1		9.5	6.1	25.8		16.2				
Change Period (Y+Rc), s	5.4	5.4		4.6	4.5	5.4		5.1				
Max Green Setting (Gmax), s	7.6	21.9		7.0	6.0	24.4		28.0				
Max Q Clear Time (g_c+I1), s	7.6	10.1		4.4	2.5	4.7		10.0				
Green Ext Time (p_c), s	0.0	3.3		0.0	0.0	2.4		1.2				

Intersection Summary												
HCM 6th Ctrl Delay			19.3									
HCM 6th LOS			B									



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	100	505	109	176	271	467	90	34	401	99
v/c Ratio	0.29	0.86	1.28	0.30	0.79	0.31	0.13	0.13	0.34	0.17
Control Delay	26.0	41.0	221.1	22.8	55.2	24.2	6.9	35.2	28.7	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.0	41.0	221.1	22.8	55.2	24.2	6.9	35.2	28.7	7.6
Queue Length 50th (ft)	47	254	~87	74	164	122	0	18	102	0
Queue Length 95th (ft)	80	343	#182	112	244	186	38	45	170	42
Internal Link Dist (ft)		306		234		460			694	
Turn Bay Length (ft)					125		125	125		125
Base Capacity (vph)	443	728	109	734	417	1713	794	262	1190	580
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.69	1.00	0.24	0.65	0.27	0.11	0.13	0.34	0.17

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	96	205	279	105	128	41	260	448	86	33	385	95
Future Volume (vph)	96	205	279	105	128	41	260	448	86	33	385	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	4.7		4.7	4.7		5.4	5.4	5.4	5.4	5.4	5.4
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.91		1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1686		1768	1794		1770	3539	1545	1770	3539	1533
Flt Permitted	0.59	1.00		0.15	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1100	1686		271	1794		1770	3539	1545	1770	3539	1533
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	100	214	291	109	133	43	271	467	90	34	401	99
RTOR Reduction (vph)	0	56	0	0	13	0	0	0	53	0	0	66
Lane Group Flow (vph)	100	449	0	109	163	0	271	467	37	34	401	33
Confl. Peds. (#/hr)			3	3					1			3
Confl. Bikes (#/hr)									1			2
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8					6			2
Actuated Green, G (s)	31.6	31.6		31.6	31.6		19.3	40.9	40.9	12.0	33.6	33.6
Effective Green, g (s)	31.6	31.6		31.6	31.6		19.3	40.9	40.9	12.0	33.6	33.6
Actuated g/C Ratio	0.32	0.32		0.32	0.32		0.19	0.41	0.41	0.12	0.34	0.34
Clearance Time (s)	4.7	4.7		4.7	4.7		5.4	5.4	5.4	5.4	5.4	5.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.5	4.0	4.0	2.5	4.0	4.0
Lane Grp Cap (vph)	347	532		85	566		341	1447	631	212	1189	515
v/s Ratio Prot		0.27			0.09		c0.15	0.13		0.02	c0.11	
v/s Ratio Perm	0.09			c0.40					0.02			0.02
v/c Ratio	0.29	0.84		1.28	0.29		0.79	0.32	0.06	0.16	0.34	0.06
Uniform Delay, d1	25.7	31.9		34.2	25.7		38.5	20.1	17.9	39.5	24.9	22.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	11.7		191.0	0.3		11.7	0.6	0.2	0.3	0.8	0.2
Delay (s)	26.2	43.6		225.2	26.0		50.1	20.7	18.1	39.7	25.6	22.8
Level of Service	C	D		F	C		D	C	B	D	C	C
Approach Delay (s)		40.7			102.2			30.1			26.0	
Approach LOS		D			F			C			C	

Intersection Summary			
HCM 2000 Control Delay	41.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	80.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	96	205	279	105	128	41	260	448	86	33	385	95
Future Volume (veh/h)	96	205	279	105	128	41	260	448	86	33	385	95
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	100	214	291	109	133	43	271	467	90	34	401	99
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	472	285	387	198	537	174	306	670	291	462	982	426
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.17	0.19	0.19	0.26	0.28	0.28
Sat Flow, veh/h	1207	717	975	894	1353	437	1781	3554	1546	1781	3554	1541
Grp Volume(v), veh/h	100	0	505	109	0	176	271	467	90	34	401	99
Grp Sat Flow(s),veh/h/ln	1207	0	1692	894	0	1790	1781	1777	1546	1781	1777	1541
Q Serve(g_s), s	6.0	0.0	25.6	11.9	0.0	6.6	14.9	12.3	5.0	1.4	9.2	5.0
Cycle Q Clear(g_c), s	12.6	0.0	25.6	37.6	0.0	6.6	14.9	12.3	5.0	1.4	9.2	5.0
Prop In Lane	1.00		0.58	1.00		0.24	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	472	0	672	198	0	711	306	670	291	462	982	426
V/C Ratio(X)	0.21	0.00	0.75	0.55	0.00	0.25	0.89	0.70	0.31	0.07	0.41	0.23
Avail Cap(c_a), veh/h	479	0	682	203	0	722	420	1318	574	462	982	426
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.4	0.0	25.9	42.1	0.0	20.2	40.5	37.9	35.0	27.9	29.5	28.0
Incr Delay (d2), s/veh	0.2	0.0	4.6	3.0	0.0	0.2	14.4	5.9	2.7	0.0	1.3	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	10.8	2.8	0.0	2.7	7.5	5.7	2.1	0.6	4.0	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.6	0.0	30.5	45.1	0.0	20.3	54.8	43.8	37.7	28.0	30.8	29.3
LnGrp LOS	C	A	C	D	A	C	D	D	D	C	C	C
Approach Vol, veh/h		605			285			828			534	
Approach Delay, s/veh		29.6			29.8			46.8			30.3	
Approach LOS		C			C			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	22.6	33.0		44.4	31.4	24.2		44.4				
Change Period (Y+Rc), s	5.4	5.4		* 4.7	5.4	5.4		* 4.7				
Max Green Setting (Gmax), s	23.6	20.6		* 40	7.1	37.1		* 40				
Max Q Clear Time (g_c+I1), s	16.9	11.2		27.6	3.4	14.3		39.6				
Green Ext Time (p_c), s	0.3	2.6		3.1	0.0	4.6		0.1				

Intersection Summary			
HCM 6th Ctrl Delay		36.1	
HCM 6th LOS		D	

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Lane Group	EBT	EBR	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	161	273	4	387	502	496	245
v/c Ratio	0.52	0.28	0.02	0.69	0.25	0.55	0.44
Control Delay	30.4	2.4	30.5	15.9	8.0	23.6	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.4	2.4	30.5	15.9	8.0	23.6	7.0
Queue Length 50th (ft)	46	0	1	56	34	70	2
Queue Length 95th (ft)	146	38	12	202	113	185	62
Internal Link Dist (ft)	486		78		253	275	
Turn Bay Length (ft)		195		105			100
Base Capacity (vph)	585	1149	224	734	2380	1474	767
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.24	0.02	0.53	0.21	0.34	0.32

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	139	7	248	0	3	1	352	457	0	0	451	223
Future Volume (vph)	139	7	248	0	3	1	352	457	0	0	451	223
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1	5.4		5.1		5.4	5.4			5.4	5.4
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95			0.95	1.00
Frpb, ped/bikes		1.00	1.00		0.99		1.00	1.00			1.00	0.96
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00			1.00	1.00
Frt		1.00	0.85		0.97		1.00	1.00			1.00	0.85
Flt Protected		0.95	1.00		1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)		1776	1583		1778		1770	3539			3539	1523
Flt Permitted		0.73	1.00		1.00		0.29	1.00			1.00	1.00
Satd. Flow (perm)		1366	1583		1778		536	3539			3539	1523
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	153	8	273	0	3	1	387	502	0	0	496	245
RTOR Reduction (vph)	0	0	161	0	1	0	0	0	0	0	0	178
Lane Group Flow (vph)	0	161	112	0	3	0	387	502	0	0	496	67
Confl. Peds. (#/hr)	2					2			3			10
Confl. Bikes (#/hr)									3			3
Turn Type	Perm	NA	pm+ov		NA		pm+pt	NA		Prot	NA	Perm
Protected Phases		4	1		3		1	6		5	2	
Permitted Phases	4		4	3			6					2
Actuated Green, G (s)		13.6	26.2		0.9		33.6	33.6			15.6	15.6
Effective Green, g (s)		13.6	26.2		0.9		33.6	33.6			15.6	15.6
Actuated g/C Ratio		0.21	0.41		0.01		0.53	0.53			0.24	0.24
Clearance Time (s)		5.1	5.4		5.1		5.4	5.4			5.4	5.4
Vehicle Extension (s)		2.0	2.0		2.0		2.0	3.0			3.0	3.0
Lane Grp Cap (vph)		291	651		25		526	1866			866	372
v/s Ratio Prot			0.03		c0.00		c0.15	0.14			0.14	
v/s Ratio Perm		c0.12	0.04				c0.24					0.04
v/c Ratio		0.55	0.17		0.12		0.74	0.27			0.57	0.18
Uniform Delay, d1		22.3	11.9		31.0		10.0	8.3			21.1	19.0
Progression Factor		1.00	1.00		1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2		1.3	0.0		0.8		4.6	0.1			0.9	0.2
Delay (s)		23.6	11.9		31.8		14.6	8.4			22.0	19.2
Level of Service		C	B		C		B	A			C	B
Approach Delay (s)		16.3			31.8			11.1			21.1	
Approach LOS		B			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	63.7	Sum of lost time (s)	21.0
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	8.5
Intersection LOS	A

Approach	EB	WB	NB	SB	SE
Entry Lanes	1	0	1	1	1
Conflicting Circle Lanes	1	1	1	1	1
Adj Approach Flow, veh/h	17	0	517	464	341
Demand Flow Rate, veh/h	17	0	527	473	347
Vehicles Circulating, veh/h	805	524	310	13	486
Vehicles Exiting, veh/h	28	313	512	511	0
Ped Vol Crossing Leg, #/h	0	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.3	0.0	10.2	5.9	9.5
Approach LOS	A	-	B	A	A

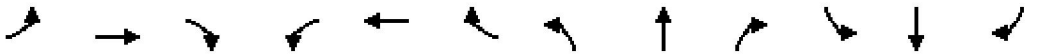
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LR
Assumed Moves	LTR	LTR	LTR	LR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	17	527	473	347
Cap Entry Lane, veh/h	607	1006	1362	841
Entry HV Adj Factor	0.993	0.981	0.982	0.982
Flow Entry, veh/h	17	517	464	341
Cap Entry, veh/h	603	987	1337	825
V/C Ratio	0.028	0.524	0.347	0.413
Control Delay, s/veh	6.3	10.2	5.9	9.5
LOS	A	B	A	A
95th %tile Queue, veh	0	3	2	2



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	126	132	7	128	43	499	8	53	492	146
v/c Ratio	0.38	0.25	0.04	0.44	0.21	0.53	0.01	0.27	0.52	0.17
Control Delay	20.5	13.3	25.3	23.4	31.0	16.3	0.0	31.8	16.2	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.5	13.3	25.3	23.4	31.0	16.3	0.0	31.8	16.2	3.2
Queue Length 50th (ft)	29	19	2	26	13	140	0	16	138	0
Queue Length 95th (ft)	88	72	14	87	50	253	0	#62	249	28
Internal Link Dist (ft)		408		339		523			385	
Turn Bay Length (ft)					150		300	200		200
Base Capacity (vph)	333	1384	887	1173	200	1348	1145	200	1348	1147
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.10	0.01	0.11	0.21	0.37	0.01	0.27	0.36	0.13

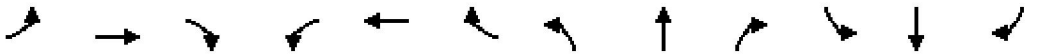
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	115	70	50	6	68	48	39	454	7	48	448	133
Future Volume (vph)	115	70	50	6	68	48	39	454	7	48	448	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.6		4.6	4.6		4.6	5.3	5.3	4.6	5.3	5.3
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.98		1.00	1.00		1.00	1.00	0.97	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.94		1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1718		1757	1747		1770	1863	1542	1770	1863	1539
Flt Permitted	0.40	1.00		0.73	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	745	1718		1345	1747		1770	1863	1542	1770	1863	1539
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	126	77	55	7	75	53	43	499	8	53	492	146
RTOR Reduction (vph)	0	35	0	0	36	0	0	0	5	0	0	83
Lane Group Flow (vph)	126	97	0	7	92	0	43	499	3	53	492	63
Confl. Peds. (#/hr)			10	10					8			7
Turn Type	pm+pt	NA		Perm	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4			8					2			6
Actuated Green, G (s)	13.8	13.8		5.5	5.5		2.5	23.4	23.4	2.5	23.4	23.4
Effective Green, g (s)	13.8	13.8		5.5	5.5		2.5	23.4	23.4	2.5	23.4	23.4
Actuated g/C Ratio	0.25	0.25		0.10	0.10		0.05	0.43	0.43	0.05	0.43	0.43
Clearance Time (s)	4.5	4.6		4.6	4.6		4.6	5.3	5.3	4.6	5.3	5.3
Vehicle Extension (s)	3.0	1.5		1.0	1.0		1.5	1.0	1.0	1.5	1.0	1.0
Lane Grp Cap (vph)	261	437		136	177		81	804	665	81	804	664
v/s Ratio Prot	c0.03	0.06			0.05		0.02	c0.27		c0.03	0.26	
v/s Ratio Perm	c0.09			0.01					0.00			0.04
v/c Ratio	0.48	0.22		0.05	0.52		0.53	0.62	0.01	0.65	0.61	0.09
Uniform Delay, d1	16.4	16.0		22.0	23.1		25.3	12.0	8.8	25.4	11.9	9.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	0.1		0.1	1.3		3.3	1.1	0.0	13.5	1.0	0.0
Delay (s)	17.8	16.1		22.1	24.4		28.6	13.0	8.8	39.0	12.9	9.1
Level of Service	B	B		C	C		C	B	A	D	B	A
Approach Delay (s)		16.9			24.2			14.2			14.1	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	54.2	Sum of lost time (s)	19.0
Intersection Capacity Utilization	54.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	70	50	6	68	48	39	454	7	48	448	133
Future Volume (veh/h)	115	70	50	6	68	48	39	454	7	48	448	133
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.98		0.97	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	126	77	55	7	75	53	43	499	8	53	492	146
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	411	341	243	349	174	123	79	630	527	91	642	539
Arrive On Green	0.08	0.34	0.34	0.17	0.17	0.17	0.04	0.34	0.34	0.05	0.34	0.34
Sat Flow, veh/h	1781	1008	720	1228	1006	711	1781	1870	1566	1781	1870	1569
Grp Volume(v), veh/h	126	0	132	7	0	128	43	499	8	53	492	146
Grp Sat Flow(s),veh/h/ln	1781	0	1728	1228	0	1717	1781	1870	1566	1781	1870	1569
Q Serve(g_s), s	2.9	0.0	2.9	0.3	0.0	3.5	1.2	12.8	0.2	1.5	12.4	3.6
Cycle Q Clear(g_c), s	2.9	0.0	2.9	0.3	0.0	3.5	1.2	12.8	0.2	1.5	12.4	3.6
Prop In Lane	1.00		0.42	1.00		0.41	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	411	0	584	349	0	297	79	630	527	91	642	539
V/C Ratio(X)	0.31	0.00	0.23	0.02	0.00	0.43	0.55	0.79	0.02	0.58	0.77	0.27
Avail Cap(c_a), veh/h	437	0	1324	856	0	1007	168	1238	1037	168	1238	1039
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.6	0.0	12.5	18.2	0.0	19.5	24.7	15.9	11.7	24.5	15.5	12.6
Incr Delay (d2), s/veh	0.4	0.0	0.1	0.0	0.0	0.4	2.2	0.9	0.0	2.2	0.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	1.0	0.1	0.0	1.2	0.5	4.7	0.1	0.6	4.5	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.0	0.0	12.6	18.2	0.0	19.9	26.9	16.7	11.7	26.7	16.2	12.7
LnGrp LOS	B	A	B	B	A	B	C	B	B	C	B	B
Approach Vol, veh/h		258			135			550			691	
Approach Delay, s/veh		13.8			19.8			17.5			16.3	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.3	23.1		22.5	6.9	23.5	8.7	13.8				
Change Period (Y+Rc), s	4.6	5.3		4.6	4.6	5.3	4.5	4.6				
Max Green Setting (Gmax), s	5.0	35.0		40.5	5.0	35.0	5.0	31.0				
Max Q Clear Time (g_c+I1), s	3.5	14.8		4.9	3.2	14.4	4.9	5.5				
Green Ext Time (p_c), s	0.0	1.0		0.4	0.0	1.0	0.0	0.2				

Intersection Summary												
HCM 6th Ctrl Delay			16.6									
HCM 6th LOS			B									

Cumulative Conditions

Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	0	19	78	6	35	63	482	62	13	418	29
Future Vol, veh/h	15	0	19	78	6	35	63	482	62	13	418	29
Conflicting Peds, #/hr	1	0	1	1	0	1	2	0	0	0	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	0	21	85	7	38	68	524	67	14	454	32

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1217	1227	473	1204	1210	559	488	0	0	591	0	0
Stage 1	500	500	-	694	694	-	-	-	-	-	-	-
Stage 2	717	727	-	510	516	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	158	178	591	161	183	529	1075	-	-	985	-	-
Stage 1	553	543	-	433	444	-	-	-	-	-	-	-
Stage 2	421	429	-	546	534	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	134	164	589	146	169	528	1073	-	-	985	-	-
Mov Cap-2 Maneuver	134	164	-	146	169	-	-	-	-	-	-	-
Stage 1	517	534	-	406	416	-	-	-	-	-	-	-
Stage 2	360	402	-	519	525	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	23.1	58.8	0.9	0.2
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1073	-	-	236	187	985	-	-
HCM Lane V/C Ratio	0.064	-	-	0.157	0.692	0.014	-	-
HCM Control Delay (s)	8.6	-	-	23.1	58.8	8.7	-	-
HCM Lane LOS	A	-	-	C	F	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.5	4.2	0	-	-

Intersection	
Int Delay, s/veh	16.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↑↑	↗	↖	↑↑	
Traffic Vol, veh/h	5	5	0	263	5	15	5	613	78	10	608	5
Future Vol, veh/h	5	5	0	263	5	15	5	613	78	10	608	5
Conflicting Peds, #/hr	2	0	0	0	0	2	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	100	75	-	-
Veh in Median Storage, #	-	0	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	5	0	286	5	16	5	666	85	11	661	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1034	1448	333	1032	1365	336	666	0	0	752	0	0
Stage 1	686	686	-	677	677	-	-	-	-	-	-	-
Stage 2	348	762	-	355	688	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	186	130	663	~ 187	146	660	919	-	-	853	-	-
Stage 1	404	446	-	409	450	-	-	-	-	-	-	-
Stage 2	641	412	-	635	445	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	175	127	663	~ 178	143	658	919	-	-	852	-	-
Mov Cap-2 Maneuver	175	127	-	299	266	-	-	-	-	-	-	-
Stage 1	400	440	-	405	446	-	-	-	-	-	-	-
Stage 2	611	408	-	619	439	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	31.4	89.9	0.1	0.1
HCM LOS	D	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	919	-	-	147	307	852	-	-
HCM Lane V/C Ratio	0.006	-	-	0.074	1.002	0.013	-	-
HCM Control Delay (s)	8.9	0	-	31.4	89.9	9.3	-	-
HCM Lane LOS	A	A	-	D	F	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	10.8	0	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

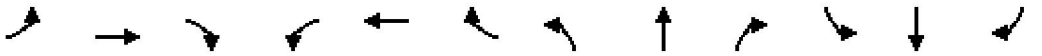
Lane Group	EBT	EBR	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	291	241	82	463	481	33	341	515
v/c Ratio	0.75	0.46	0.55	0.81	0.25	0.33	0.41	0.77
Control Delay	51.4	8.7	54.4	47.3	15.6	61.8	35.2	18.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.4	8.7	54.4	47.3	15.6	61.8	35.2	18.7
Queue Length 50th (ft)	168	5	38	255	86	20	95	69
Queue Length 95th (ft)	328	75	109	#683	176	65	167	235
Internal Link Dist (ft)	345		64		217		210	
Turn Bay Length (ft)		205		125		60		100
Base Capacity (vph)	1155	1109	436	574	1899	574	1760	980
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.22	0.19	0.81	0.25	0.06	0.19	0.53

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	253	15	222	10	30	35	426	422	20	30	314	474
Future Volume (vph)	253	15	222	10	30	35	426	422	20	30	314	474
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5	3.5		3.5		3.5	4.0		3.5	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		0.94		1.00	0.99		1.00	1.00	0.85
Flt Protected		0.95	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1779	1583		1735		1770	3511		1770	3539	1583
Flt Permitted		0.95	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1779	1583		1735		1770	3511		1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	275	16	241	11	33	38	463	459	22	33	341	515
RTOR Reduction (vph)	0	0	181	0	18	0	0	0	0	0	0	289
Lane Group Flow (vph)	0	291	60	0	64	0	463	481	0	33	341	226
Confl. Peds. (#/hr)									1	1		
Turn Type	Split	NA	Perm	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases			8									2
Actuated Green, G (s)		22.2	22.2		7.7		33.1	55.0		3.8	25.7	25.7
Effective Green, g (s)		22.2	22.2		7.7		33.1	55.0		3.8	25.7	25.7
Actuated g/C Ratio		0.22	0.22		0.07		0.32	0.53		0.04	0.25	0.25
Clearance Time (s)		3.5	3.5		3.5		3.5	4.0		3.5	4.0	4.0
Vehicle Extension (s)		2.0	2.0		1.0		1.0	5.5		1.0	5.5	5.5
Lane Grp Cap (vph)		382	340		129		567	1871		65	881	394
v/s Ratio Prot		c0.16			c0.04		c0.26	0.14		0.02	0.10	
v/s Ratio Perm			0.04									c0.14
v/c Ratio		0.76	0.18		0.50		0.82	0.26		0.51	0.39	0.57
Uniform Delay, d1		38.0	33.1		45.9		32.3	13.0		48.8	32.2	33.9
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		7.9	0.1		1.1		8.4	0.2		2.3	0.7	3.6
Delay (s)		45.9	33.1		47.0		40.7	13.2		51.0	32.9	37.5
Level of Service		D	C		D		D	B		D	C	D
Approach Delay (s)		40.1			47.0			26.7			36.3	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	33.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	103.2	Sum of lost time (s)	14.5
Intersection Capacity Utilization	67.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	253	15	222	10	30	35	426	422	20	30	314	474
Future Volume (veh/h)	253	15	222	10	30	35	426	422	20	30	314	474
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	275	16	241	11	33	38	463	459	22	33	341	515
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	316	18	297	14	42	48	471	2063	99	62	1308	583
Arrive On Green	0.19	0.19	0.19	0.06	0.06	0.06	0.26	0.60	0.60	0.03	0.37	0.37
Sat Flow, veh/h	1688	98	1585	230	690	795	1781	3452	165	1781	3554	1583
Grp Volume(v), veh/h	291	0	241	82	0	0	463	236	245	33	341	515
Grp Sat Flow(s),veh/h/ln	1786	0	1585	1716	0	0	1781	1777	1840	1781	1777	1583
Q Serve(g_s), s	19.1	0.0	17.6	5.7	0.0	0.0	31.3	7.5	7.5	2.2	8.1	36.9
Cycle Q Clear(g_c), s	19.1	0.0	17.6	5.7	0.0	0.0	31.3	7.5	7.5	2.2	8.1	36.9
Prop In Lane	0.95		1.00	0.13		0.46	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	335	0	297	104	0	0	471	1062	1100	62	1308	583
V/C Ratio(X)	0.87	0.00	0.81	0.79	0.00	0.00	0.98	0.22	0.22	0.53	0.26	0.88
Avail Cap(c_a), veh/h	944	0	838	340	0	0	471	1062	1100	471	1439	641
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.8	0.0	47.1	56.1	0.0	0.0	44.3	11.3	11.3	57.4	26.7	35.8
Incr Delay (d2), s/veh	2.8	0.0	2.0	5.0	0.0	0.0	36.9	0.3	0.3	2.6	0.3	15.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.7	0.0	7.0	2.6	0.0	0.0	18.2	2.9	3.0	1.0	3.4	16.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.5	0.0	49.2	61.1	0.0	0.0	81.1	11.6	11.6	60.1	27.0	51.1
LnGrp LOS	D	A	D	E	A	A	F	B	B	E	C	D
Approach Vol, veh/h		532			82			944			889	
Approach Delay, s/veh		49.9			61.1			45.7			42.2	
Approach LOS		D			E			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	35.5	48.6		10.8	7.7	76.3		26.2				
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5				
Max Green Setting (Gmax), s	32.0	49.0		24.0	32.0	49.0		64.0				
Max Q Clear Time (g_c+I1), s	33.3	38.9		7.7	4.2	9.5		21.1				
Green Ext Time (p_c), s	0.0	5.7		0.1	0.0	6.9		1.5				

Intersection Summary												
HCM 6th Ctrl Delay			45.9									
HCM 6th LOS			D									



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	188	336	309	42	344	392	57	16	335	59
v/c Ratio	0.63	0.63	0.79	0.09	0.76	0.23	0.07	0.13	0.49	0.14
Control Delay	44.1	9.3	48.5	0.4	46.5	16.7	1.3	42.3	35.3	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.1	9.3	48.5	0.4	46.5	16.7	1.3	42.3	35.3	0.7
Queue Length 50th (ft)	101	0	164	0	176	66	0	9	93	0
Queue Length 95th (ft)	158	68	#276	0	#395	126	7	30	131	0
Internal Link Dist (ft)	306		234			460			694	
Turn Bay Length (ft)		150		160	125		125	125		125
Base Capacity (vph)	406	608	425	478	453	1677	786	127	766	446
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.55	0.73	0.09	0.76	0.23	0.07	0.13	0.44	0.13

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	115	323	82	215	40	330	376	55	15	322	57
Future Volume (vph)	65	115	323	82	215	40	330	376	55	15	322	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	3.5	4.0	4.0	3.5	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.99		1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.97
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.98	1.00		0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1830	1562		1837	1583	1770	3539	1546	1767	3539	1541
Flt Permitted		0.98	1.00		0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1830	1562		1837	1583	1770	3539	1546	1767	3539	1541
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	68	120	336	85	224	42	344	392	57	16	335	59
RTOR Reduction (vph)	0	0	281	0	0	33	0	0	32	0	0	48
Lane Group Flow (vph)	0	188	55	0	309	9	344	392	25	16	335	11
Confl. Peds. (#/hr)			1	1					1	1		1
Confl. Bikes (#/hr)									1			2
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3			6			2
Actuated Green, G (s)		14.7	14.7		19.2	19.2	23.1	39.7	39.7	0.9	17.5	17.5
Effective Green, g (s)		14.7	14.7		19.2	19.2	23.1	39.7	39.7	0.9	17.5	17.5
Actuated g/C Ratio		0.16	0.16		0.21	0.21	0.26	0.44	0.44	0.01	0.19	0.19
Clearance Time (s)		4.0	4.0		4.0	4.0	3.5	4.0	4.0	3.5	4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	2.5	4.0	4.0	2.5	4.0	4.0
Lane Grp Cap (vph)		298	255		391	337	454	1561	681	17	688	299
v/s Ratio Prot		c0.10			c0.17		c0.19	0.11		0.01	c0.09	
v/s Ratio Perm			0.04			0.01			0.02			0.01
v/c Ratio		0.63	0.22		0.79	0.03	0.76	0.25	0.04	0.94	0.49	0.04
Uniform Delay, d1		35.1	32.6		33.5	28.0	30.9	15.8	14.3	44.5	32.3	29.4
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		4.3	0.4		10.4	0.0	6.8	0.4	0.1	188.5	2.5	0.2
Delay (s)		39.4	33.1		43.9	28.0	37.6	16.2	14.4	233.1	34.7	29.7
Level of Service		D	C		D	C	D	B	B	F	C	C
Approach Delay (s)		35.4			42.0			25.4			41.7	
Approach LOS		D			D			C			D	

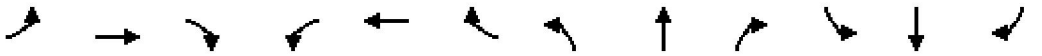
Intersection Summary			
HCM 2000 Control Delay	33.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	69.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	175	463	10	551	376	5	347	236
v/c Ratio	0.67	0.39	0.08	0.78	0.17	0.04	0.53	0.53
Control Delay	43.5	1.9	32.6	32.4	8.3	41.0	32.3	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.5	1.9	32.6	32.4	8.3	41.0	32.3	11.6
Queue Length 50th (ft)	73	0	2	201	27	2	74	12
Queue Length 95th (ft)	174	41	21	#609	107	15	147	84
Internal Link Dist (ft)	486		78		253		275	
Turn Bay Length (ft)		195		105		100		100
Base Capacity (vph)	620	1201	693	710	2363	473	1895	912
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.39	0.01	0.78	0.16	0.01	0.18	0.26

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	146	15	426	0	5	5	507	341	5	5	319	217
Future Volume (vph)	146	15	426	0	5	5	507	341	5	5	319	217
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0		5.0	5.0		5.0	5.0	5.0
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	1.00		0.93		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		0.93		1.00	1.00		1.00	1.00	0.85
Flt Protected		0.96	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1773	1583		1618		1770	3531		1770	3539	1535
Flt Permitted		0.74	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1369	1583		1618		1770	3531		1770	3539	1535
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	159	16	463	0	5	5	551	371	5	5	347	236
RTOR Reduction (vph)	0	0	215	0	5	0	0	0	0	0	0	159
Lane Group Flow (vph)	0	175	248	0	5	0	551	376	0	5	347	77
Confl. Peds. (#/hr)	5					5	4		5			4
Confl. Bikes (#/hr)									2			2
Turn Type	Perm	NA	pm+ov		NA		Prot	NA		Prot	NA	Perm
Protected Phases		4	1		3		1	6		5	2	
Permitted Phases	4		4	3								2
Actuated Green, G (s)		14.7	45.5		0.9		30.8	48.6		0.8	18.6	18.6
Effective Green, g (s)		14.7	45.5		0.9		30.8	48.6		0.8	18.6	18.6
Actuated g/C Ratio		0.17	0.54		0.01		0.36	0.57		0.01	0.22	0.22
Clearance Time (s)		5.0	5.0		5.0		5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)		2.0	2.0		2.0		2.0	3.0		2.0	3.0	3.0
Lane Grp Cap (vph)		236	940		17		641	2018		16	774	335
v/s Ratio Prot			0.10		c0.00		c0.31	0.11		0.00	c0.10	
v/s Ratio Perm		c0.13	0.06									0.05
v/c Ratio		0.74	0.26		0.30		0.86	0.19		0.31	0.45	0.23
Uniform Delay, d1		33.3	10.7		41.7		25.1	8.7		41.8	28.8	27.3
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		10.4	0.1		3.5		10.7	0.0		4.0	0.4	0.4
Delay (s)		43.8	10.7		45.3		35.8	8.8		45.9	29.2	27.7
Level of Service		D	B		D		D	A		D	C	C
Approach Delay (s)		19.8			45.3			24.9			28.7	
Approach LOS		B			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	24.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

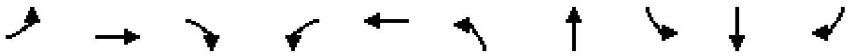
Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	0	56	0	5	5	55	771	0	5	588	10
Future Vol, veh/h	15	0	56	0	5	5	55	771	0	5	588	10
Conflicting Peds, #/hr	3	0	0	0	0	3	3	0	1	1	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	0
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	0	61	0	5	5	60	838	0	5	639	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1197	1611	323	1289	1622	423	653	0	0	839	0	0
Stage 1	652	652	-	959	959	-	-	-	-	-	-	-
Stage 2	545	959	-	330	663	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	141	103	673	121	102	579	930	-	-	791	-	-
Stage 1	423	462	-	276	334	-	-	-	-	-	-	-
Stage 2	490	334	-	657	457	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	129	95	671	104	94	577	927	-	-	790	-	-
Mov Cap-2 Maneuver	249	209	-	198	201	-	-	-	-	-	-	-
Stage 1	395	458	-	258	312	-	-	-	-	-	-	-
Stage 2	445	312	-	594	453	-	-	-	-	-	-	-

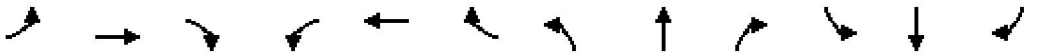
Approach	EB	WB	NB	SB
HCM Control Delay, s	13.6	17.5	0.6	0.1
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	927	-	-	494	298	790	-	-
HCM Lane V/C Ratio	0.064	-	-	0.156	0.036	0.007	-	-
HCM Control Delay (s)	9.2	-	-	13.6	17.5	9.6	-	-
HCM Lane LOS	A	-	-	B	C	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.6	0.1	0	-	-



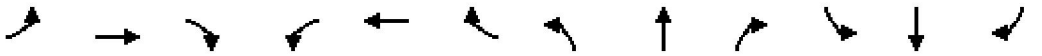
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	49	97	111	9	224	355	136	11	87	237
v/c Ratio	0.21	0.21	0.24	0.03	0.49	0.65	0.14	0.06	0.25	0.49
Control Delay	23.1	21.6	6.5	20.6	25.4	25.1	8.8	31.1	26.6	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.1	21.6	6.5	20.6	25.4	25.1	8.8	31.1	26.6	8.2
Queue Length 50th (ft)	14	28	0	2	69	110	20	4	27	0
Queue Length 95th (ft)	47	76	36	14	159	224	70	20	78	58
Internal Link Dist (ft)		435			214		337		398	
Turn Bay Length (ft)	265		265	155		120		160		160
Base Capacity (vph)	493	942	853	654	936	866	1153	866	1155	1067
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.10	0.13	0.01	0.24	0.41	0.12	0.01	0.08	0.22

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	89	102	8	196	10	327	115	10	10	80	218
Future Volume (vph)	45	89	102	8	196	10	327	115	10	10	80	218
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	4.6	4.6	4.6		4.0	5.7		4.0	5.7	5.7
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1719	1810	1538	1719	1796		1719	1788		1719	1810	1538
Flt Permitted	0.52	1.00	1.00	0.69	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	948	1810	1538	1256	1796		1719	1788		1719	1810	1538
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	49	97	111	9	213	11	355	125	11	11	87	237
RTOR Reduction (vph)	0	0	84	0	2	0	0	2	0	0	0	181
Lane Group Flow (vph)	49	97	27	9	222	0	355	134	0	11	87	56
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								6
Actuated Green, G (s)	15.6	15.6	15.6	15.6	15.6		19.7	33.7		1.2	15.2	15.2
Effective Green, g (s)	15.6	15.6	15.6	15.6	15.6		19.7	33.7		1.2	15.2	15.2
Actuated g/C Ratio	0.24	0.24	0.24	0.24	0.24		0.30	0.52		0.02	0.23	0.23
Clearance Time (s)	4.6	4.6	4.6	4.6	4.6		4.0	5.7		4.0	5.7	5.7
Vehicle Extension (s)	5.0	5.0	5.0	5.0	5.0		3.5	5.8		3.5	5.8	5.8
Lane Grp Cap (vph)	228	435	370	302	432		522	929		31	424	360
v/s Ratio Prot		0.05			c0.12		c0.21	0.08		0.01	c0.05	
v/s Ratio Perm	0.05		0.02	0.01								0.04
v/c Ratio	0.21	0.22	0.07	0.03	0.52		0.68	0.14		0.35	0.21	0.15
Uniform Delay, d1	19.7	19.7	19.0	18.8	21.3		19.8	8.1		31.4	19.9	19.7
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.0	0.5	0.2	0.1	2.1		3.8	0.2		8.1	0.6	0.5
Delay (s)	20.7	20.3	19.2	18.9	23.4		23.6	8.3		39.5	20.6	20.2
Level of Service	C	C	B	B	C		C	A		D	C	C
Approach Delay (s)		19.9			23.2			19.3			21.0	
Approach LOS		B			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	20.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	64.8	Sum of lost time (s)	14.3
Intersection Capacity Utilization	54.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	89	102	8	196	10	327	115	10	10	80	218
Future Volume (veh/h)	45	89	102	8	196	10	327	115	10	10	80	218
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	49	97	111	9	213	11	355	125	11	11	87	237
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	272	414	351	349	391	20	440	799	70	25	445	377
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.25	0.48	0.48	0.01	0.24	0.24
Sat Flow, veh/h	1129	1826	1547	1146	1721	89	1739	1654	146	1739	1826	1547
Grp Volume(v), veh/h	49	97	111	9	0	224	355	0	136	11	87	237
Grp Sat Flow(s),veh/h/ln	1129	1826	1547	1146	0	1810	1739	0	1800	1739	1826	1547
Q Serve(g_s), s	2.1	2.2	3.1	0.3	0.0	5.7	9.9	0.0	2.2	0.3	2.0	7.1
Cycle Q Clear(g_c), s	7.7	2.2	3.1	2.6	0.0	5.7	9.9	0.0	2.2	0.3	2.0	7.1
Prop In Lane	1.00		1.00	1.00		0.05	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	272	414	351	349	0	411	440	0	869	25	445	377
V/C Ratio(X)	0.18	0.23	0.32	0.03	0.00	0.55	0.81	0.00	0.16	0.45	0.20	0.63
Avail Cap(c_a), veh/h	691	1093	926	775	0	1083	1007	0	1320	1007	1339	1135
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.1	16.3	16.7	17.4	0.0	17.7	18.2	0.0	7.5	25.3	15.5	17.5
Incr Delay (d2), s/veh	0.7	0.6	1.1	0.1	0.0	2.4	4.2	0.0	0.3	14.6	0.7	5.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.9	1.0	0.1	0.0	2.3	3.7	0.0	0.6	0.2	0.8	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.7	17.0	17.8	17.5	0.0	20.1	22.4	0.0	7.8	40.0	16.2	23.0
LnGrp LOS	C	B	B	B	A	C	C	A	A	D	B	C
Approach Vol, veh/h		257			233			491			335	
Approach Delay, s/veh		18.2			20.0			18.3			21.8	
Approach LOS		B			B			B			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.7	30.7		16.4	17.1	18.3		16.4				
Change Period (Y+Rc), s	4.0	5.7		4.6	4.0	5.7		4.6				
Max Green Setting (Gmax), s	30.0	38.0		31.0	30.0	38.0		31.0				
Max Q Clear Time (g_c+I1), s	2.3	4.2		9.7	11.9	9.1		7.7				
Green Ext Time (p_c), s	0.0	1.7		2.0	1.3	3.6		2.3				

Intersection Summary												
HCM 6th Ctrl Delay			19.5									
HCM 6th LOS			B									

8: Ardilla Ave/Traffic Way & US 101 SB Ramp Performance by approach

Approach	EB	NB	SB	SE	All
Denied Del/Veh (s)	46.3	0.6	25.3	216.2	55.2
Total Del/Veh (s)	247.7	2.9	30.9	250.4	49.0

Intersection	
Int Delay, s/veh	3.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	40	80	142	32	74	214
Future Vol, veh/h	40	80	142	32	74	214
Conflicting Peds, #/hr	0	1	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	43	87	154	35	80	233

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	566	174	0	0	190	0
Stage 1	173	-	-	-	-	-
Stage 2	393	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	486	869	-	-	1384	-
Stage 1	857	-	-	-	-	-
Stage 2	682	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	453	867	-	-	1383	-
Mov Cap-2 Maneuver	453	-	-	-	-	-
Stage 1	856	-	-	-	-	-
Stage 2	637	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.7	0	2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	665	1383	-
HCM Lane V/C Ratio	-	-	0.196	0.058	-
HCM Control Delay (s)	-	-	11.7	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.7	0.2	-



Lane Group	EBT	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	131	240	5	487	128	58	560
v/c Ratio	0.29	0.58	0.03	0.66	0.19	0.25	0.63
Control Delay	19.9	24.1	33.6	20.5	8.1	31.4	15.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.9	24.1	33.6	20.5	8.1	31.4	15.2
Queue Length 50th (ft)	33	62	2	131	11	18	101
Queue Length 95th (ft)	94	166	14	314	53	65	342
Internal Link Dist (ft)	369	467		389			478
Turn Bay Length (ft)			200		105	200	
Base Capacity (vph)	1089	971	768	1741	1449	768	1726
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.25	0.01	0.28	0.09	0.08	0.32

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	69	15	108	32	81	5	448	118	53	495	20
Future Volume (vph)	37	69	15	108	32	81	5	448	118	53	495	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6		4.6	5.3	5.3	4.1	5.3	
Lane Util. Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes		1.00			0.99		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Frt		0.98			0.95		1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.98			0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1804			1715		1770	1863	1549	1770	1852	
Flt Permitted		0.88			0.81		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1608			1427		1770	1863	1549	1770	1852	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	40	75	16	117	35	88	5	487	128	58	538	22
RTOR Reduction (vph)	0	4	0	0	16	0	0	0	43	0	1	0
Lane Group Flow (vph)	0	127	0	0	224	0	5	487	85	58	559	0
Confl. Peds. (#/hr)	1					1			1	1		
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			
Actuated Green, G (s)		15.3			15.3		0.6	23.5	23.5	3.7	26.1	
Effective Green, g (s)		15.3			15.3		0.6	23.5	23.5	3.7	26.1	
Actuated g/C Ratio		0.27			0.27		0.01	0.42	0.42	0.07	0.46	
Clearance Time (s)		4.6			4.6		4.6	5.3	5.3	4.1	5.3	
Vehicle Extension (s)		1.0			1.0		1.5	1.0	1.0	1.5	1.0	
Lane Grp Cap (vph)		435			386		18	774	644	115	855	
v/s Ratio Prot							0.00	0.26		c0.03	c0.30	
v/s Ratio Perm		0.08			c0.16				0.06			
v/c Ratio		0.29			0.58		0.28	0.63	0.13	0.50	0.65	
Uniform Delay, d1		16.3			17.8		27.7	13.1	10.2	25.5	11.7	
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.1			1.4		3.0	1.2	0.0	1.3	1.4	
Delay (s)		16.5			19.3		30.8	14.2	10.2	26.8	13.1	
Level of Service		B			B		C	B	B	C	B	
Approach Delay (s)		16.5			19.3			13.5			14.4	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	14.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	56.5	Sum of lost time (s)	14.5
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	69	15	108	32	81	5	448	118	53	495	20
Future Volume (veh/h)	37	69	15	108	32	81	5	448	118	53	495	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	40	75	16	117	35	88	5	487	128	58	538	22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	206	253	45	292	70	121	12	610	516	110	654	27
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.01	0.33	0.33	0.06	0.37	0.37
Sat Flow, veh/h	340	1201	214	654	332	571	1781	1870	1583	1781	1784	73
Grp Volume(v), veh/h	131	0	0	240	0	0	5	487	128	58	0	560
Grp Sat Flow(s),veh/h/ln	1755	0	0	1558	0	0	1781	1870	1583	1781	0	1857
Q Serve(g_s), s	0.0	0.0	0.0	2.7	0.0	0.0	0.1	8.3	2.1	1.1	0.0	9.5
Cycle Q Clear(g_c), s	2.1	0.0	0.0	4.8	0.0	0.0	0.1	8.3	2.1	1.1	0.0	9.5
Prop In Lane	0.31		0.12	0.49		0.37	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	505	0	0	482	0	0	12	610	516	110	0	681
V/C Ratio(X)	0.26	0.00	0.00	0.50	0.00	0.00	0.41	0.80	0.25	0.53	0.00	0.82
Avail Cap(c_a), veh/h	1681	0	0	1514	0	0	1021	3323	2811	1021	0	3299
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.7	0.0	0.0	12.7	0.0	0.0	17.3	10.7	8.6	15.9	0.0	10.0
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.3	0.0	0.0	8.2	0.9	0.1	1.5	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	1.4	0.0	0.0	0.1	2.4	0.5	0.4	0.0	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.8	0.0	0.0	13.0	0.0	0.0	25.4	11.6	8.7	17.3	0.0	11.0
LnGrp LOS	B	A	A	B	A	A	C	B	A	B	A	B
Approach Vol, veh/h		131			240			620			618	
Approach Delay, s/veh		11.8			13.0			11.1			11.6	
Approach LOS		B			B			B			B	

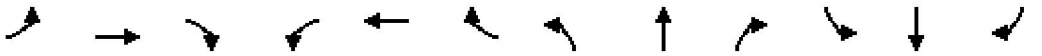
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.3	16.7		12.0	4.8	18.1		12.0				
Change Period (Y+Rc), s	4.1	5.3		4.6	4.6	5.3		4.6				
Max Green Setting (Gmax), s	20.0	62.0		33.0	20.0	62.0		32.0				
Max Q Clear Time (g_c+I1), s	3.1	10.3		4.1	2.1	11.5		6.8				
Green Ext Time (p_c), s	0.0	1.0		0.3	0.0	1.2		0.6				

Intersection Summary	
HCM 6th Ctrl Delay	11.6
HCM 6th LOS	B



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	264	43	183	126	42	532	5	129	709	187
v/c Ratio	0.75	0.12	0.71	0.46	0.41	0.71	0.01	0.65	0.80	0.24
Control Delay	69.4	5.7	76.2	38.1	83.3	42.4	0.0	79.0	40.5	16.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.4	5.7	76.2	38.1	83.3	42.4	0.0	79.0	40.5	16.1
Queue Length 50th (ft)	228	0	160	53	37	379	0	113	524	58
Queue Length 95th (ft)	395	19	295	140	95	702	0	223	947	146
Internal Link Dist (ft)	408		339			523			385	
Turn Bay Length (ft)		35		50	150		300	200		200
Base Capacity (vph)	568	525	585	542	349	1147	967	349	1149	970
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.08	0.31	0.23	0.12	0.46	0.01	0.37	0.62	0.19

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	169	74	40	17	152	116	39	489	5	119	652	172
Future Volume (vph)	169	74	40	17	152	116	39	489	5	119	652	172
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6		4.6	4.6	4.6	5.3	5.3	4.6	5.3	5.3
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00	0.96		1.00	1.00	1.00	1.00	0.97	1.00	1.00	0.97
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.97	1.00		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1800	1528		1854	1583	1770	1863	1540	1770	1863	1538
Flt Permitted		0.97	1.00		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1800	1528		1854	1583	1770	1863	1540	1770	1863	1538
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	184	80	43	18	165	126	42	532	5	129	709	187
RTOR Reduction (vph)	0	0	35	0	0	53	0	0	3	0	0	36
Lane Group Flow (vph)	0	264	8	0	183	73	42	532	2	129	709	151
Confl. Peds. (#/hr)			6	6					4			3
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7			8			2			6
Actuated Green, G (s)		26.5	26.5		18.9	18.9	6.3	56.0	56.0	15.3	65.0	65.0
Effective Green, g (s)		26.5	26.5		18.9	18.9	6.3	56.0	56.0	15.3	65.0	65.0
Actuated g/C Ratio		0.20	0.20		0.14	0.14	0.05	0.41	0.41	0.11	0.48	0.48
Clearance Time (s)		4.6	4.6		4.6	4.6	4.6	5.3	5.3	4.6	5.3	5.3
Vehicle Extension (s)		1.5	1.5		1.0	1.0	1.5	1.0	1.0	1.5	1.0	1.0
Lane Grp Cap (vph)		351	298		258	220	82	768	635	199	891	736
v/s Ratio Prot		c0.15			c0.10		0.02	0.29		c0.07	c0.38	
v/s Ratio Perm			0.01			0.05			0.00			0.10
v/c Ratio		0.75	0.03		0.71	0.33	0.51	0.69	0.00	0.65	0.80	0.21
Uniform Delay, d1		51.6	44.2		55.8	52.7	63.2	32.8	23.5	57.7	29.8	20.5
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		7.9	0.0		7.1	0.3	2.2	2.2	0.0	5.4	4.6	0.1
Delay (s)		59.4	44.2		62.9	53.1	65.5	35.0	23.5	63.0	34.5	20.5
Level of Service		E	D		E	D	E	D	C	E	C	C
Approach Delay (s)		57.3			58.9			37.1			35.5	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	42.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	135.8	Sum of lost time (s)	19.1
Intersection Capacity Utilization	76.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	72	0	95	0	0	0	45	273	5	5	428	58
Future Vol, veh/h	72	0	95	0	0	0	45	273	5	5	428	58
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	285	-	-	165	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	76	0	100	0	0	0	47	287	5	5	451	61

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	876	878	482	926	906	290	512	0	0	292	0	0
Stage 1	492	492	-	384	384	-	-	-	-	-	-	-
Stage 2	384	386	-	542	522	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	268	286	582	248	275	747	1048	-	-	1264	-	-
Stage 1	557	546	-	637	610	-	-	-	-	-	-	-
Stage 2	637	608	-	523	529	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	258	272	582	198	262	747	1048	-	-	1264	-	-
Mov Cap-2 Maneuver	258	272	-	198	262	-	-	-	-	-	-	-
Stage 1	532	544	-	608	583	-	-	-	-	-	-	-
Stage 2	608	581	-	431	527	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	22.5	0	1.2	0.1
HCM LOS	C	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1048	-	-	378	-	1264	-	-
HCM Lane V/C Ratio	0.045	-	-	0.465	-	0.004	-	-
HCM Control Delay (s)	8.6	-	-	22.5	0	7.9	-	-
HCM Lane LOS	A	-	-	C	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	2.4	-	0	-	-

Intersection	
Intersection Delay, s/veh	13.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	153	7	56	129	75	18	101	86	243	55	16
Future Vol, veh/h	12	153	7	56	129	75	18	101	86	243	55	16
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	166	8	61	140	82	20	110	93	264	60	17
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	12.2	13.8	12.1	16.2
HCM LOS	B	B	B	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	9%	7%	22%	77%
Vol Thru, %	49%	89%	50%	18%
Vol Right, %	42%	4%	29%	5%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	205	172	260	314
LT Vol	18	12	56	243
Through Vol	101	153	129	55
RT Vol	86	7	75	16
Lane Flow Rate	223	187	283	341
Geometry Grp	1	1	1	1
Degree of Util (X)	0.362	0.323	0.456	0.556
Departure Headway (Hd)	5.851	6.223	5.923	5.962
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	619	580	613	608
Service Time	3.851	4.235	3.923	3.962
HCM Lane V/C Ratio	0.36	0.322	0.462	0.561
HCM Control Delay	12.1	12.2	13.8	16.2
HCM Lane LOS	B	B	B	C
HCM 95th-tile Q	1.6	1.4	2.4	3.4

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↰	↑		↰	↑	
Traffic Vol, veh/h	38	0	51	14	0	35	40	635	27	38	555	19
Future Vol, veh/h	38	0	51	14	0	35	40	635	27	38	555	19
Conflicting Peds, #/hr	1	0	0	0	0	1	9	0	0	0	0	9
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	41	0	55	15	0	38	43	690	29	41	603	21

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1516	1510	623	1514	1506	706	633	0	0	719	0	0
Stage 1	705	705	-	791	791	-	-	-	-	-	-	-
Stage 2	811	805	-	723	715	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	98	120	486	98	121	436	950	-	-	882	-	-
Stage 1	427	439	-	383	401	-	-	-	-	-	-	-
Stage 2	373	395	-	417	434	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	83	108	482	81	109	436	942	-	-	882	-	-
Mov Cap-2 Maneuver	83	108	-	81	109	-	-	-	-	-	-	-
Stage 1	404	415	-	365	383	-	-	-	-	-	-	-
Stage 2	325	377	-	352	410	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	58.4	30.4	0.5	0.6
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	942	-	-	158	194	882	-	-
HCM Lane V/C Ratio	0.046	-	-	0.612	0.275	0.047	-	-
HCM Control Delay (s)	9	-	-	58.4	30.4	9.3	-	-
HCM Lane LOS	A	-	-	F	D	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	3.3	1.1	0.1	-	-

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↑↑	↗	↖	↑↑↔	
Traffic Vol, veh/h	10	5	10	123	10	15	15	737	199	35	658	10
Future Vol, veh/h	10	5	10	123	10	15	15	737	199	35	658	10
Conflicting Peds, #/hr	1	0	0	0	0	1	4	0	2	2	0	4
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	100	75	-	-
Veh in Median Storage, #	-	0	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	5	11	129	11	16	16	776	209	37	693	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1204	1796	356	1233	1592	391	708	0	0	987	0	0
Stage 1	777	777	-	810	810	-	-	-	-	-	-	-
Stage 2	427	1019	-	423	782	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	140	79	640	133	106	608	887	-	-	696	-	-
Stage 1	356	405	-	340	391	-	-	-	-	-	-	-
Stage 2	576	313	-	579	403	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	121	71	638	~ 115	96	606	884	-	-	695	-	-
Mov Cap-2 Maneuver	121	71	-	231	212	-	-	-	-	-	-	-
Stage 1	340	382	-	325	374	-	-	-	-	-	-	-
Stage 2	522	299	-	532	380	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	34.5	42.2	0.3	0.5
HCM LOS	D	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	884	-	-	148	245	695	-	-
HCM Lane V/C Ratio	0.018	-	-	0.178	0.636	0.053	-	-
HCM Control Delay (s)	9.1	0.2	-	34.5	42.2	10.5	-	-
HCM Lane LOS	A	A	-	D	E	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.6	3.9	0.2	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBT	EBR	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	341	238	83	705	551	21	391	482
v/c Ratio	0.79	0.45	0.58	1.32	0.29	0.26	0.45	0.79
Control Delay	54.9	12.0	61.1	191.0	16.3	67.5	37.5	23.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.9	12.0	61.1	191.0	16.3	67.5	37.5	23.9
Queue Length 50th (ft)	215	24	43	~613	93	14	119	109
Queue Length 95th (ft)	412	108	121	#1290	217	51	204	286
Internal Link Dist (ft)	345		64		217		210	
Turn Bay Length (ft)		205		125		60		100
Base Capacity (vph)	1074	1030	404	533	1926	533	1633	874
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.23	0.21	1.32	0.29	0.04	0.24	0.55

Intersection Summary

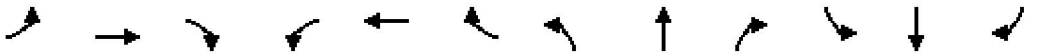
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	298	30	228	20	25	35	677	499	30	20	375	463
Future Volume (vph)	298	30	228	20	25	35	677	499	30	20	375	463
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5	3.5		3.5		3.5	4.0		3.5	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	1.00		1.00		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		0.94		1.00	0.99		1.00	1.00	0.85
Flt Protected		0.96	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1782	1583		1732		1770	3501		1770	3539	1536
Flt Permitted		0.96	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1782	1583		1732		1770	3501		1770	3539	1536
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	310	31	238	21	26	36	705	520	31	21	391	482
RTOR Reduction (vph)	0	0	147	0	16	0	0	0	0	0	0	230
Lane Group Flow (vph)	0	341	91	0	67	0	705	551	0	21	391	252
Confl. Peds. (#/hr)									4			2
Confl. Bikes (#/hr)									1			3
Turn Type	Split	NA	Perm	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases			8									2
Actuated Green, G (s)		26.7	26.7		8.2		33.4	61.0		2.2	29.8	29.8
Effective Green, g (s)		26.7	26.7		8.2		33.4	61.0		2.2	29.8	29.8
Actuated g/C Ratio		0.24	0.24		0.07		0.30	0.54		0.02	0.26	0.26
Clearance Time (s)		3.5	3.5		3.5		3.5	4.0		3.5	4.0	4.0
Vehicle Extension (s)		2.0	2.0		1.0		1.0	5.5		1.0	5.5	5.5
Lane Grp Cap (vph)		422	375		126		525	1896		34	936	406
v/s Ratio Prot		c0.19			c0.04		c0.40	0.16		0.01	0.11	
v/s Ratio Perm			0.06									c0.16
v/c Ratio		0.81	0.24		0.53		1.34	0.29		0.62	0.42	0.62
Uniform Delay, d1		40.5	34.8		50.4		39.6	14.0		54.8	34.2	36.4
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		10.3	0.1		2.2		166.7	0.2		21.2	0.7	4.5
Delay (s)		50.8	34.9		52.5		206.3	14.2		76.0	35.0	41.0
Level of Service		D	C		D		F	B		E	C	D
Approach Delay (s)		44.3			52.5			122.1			39.2	
Approach LOS		D			D			F			D	

Intersection Summary			
HCM 2000 Control Delay	77.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	112.6	Sum of lost time (s)	14.5
Intersection Capacity Utilization	83.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	298	30	228	20	25	35	677	499	30	20	375	463
Future Volume (veh/h)	298	30	228	20	25	35	677	499	30	20	375	463
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	310	31	238	21	26	36	705	520	31	21	391	482
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	349	35	340	26	33	45	453	1979	118	49	1261	548
Arrive On Green	0.21	0.21	0.21	0.06	0.06	0.06	0.25	0.58	0.58	0.03	0.35	0.35
Sat Flow, veh/h	1626	163	1585	434	537	744	1781	3403	202	1781	3554	1544
Grp Volume(v), veh/h	341	0	238	83	0	0	705	271	280	21	391	482
Grp Sat Flow(s),veh/h/ln	1789	0	1585	1715	0	0	1781	1777	1828	1781	1777	1544
Q Serve(g_s), s	23.3	0.0	17.5	6.0	0.0	0.0	32.0	9.5	9.5	1.5	10.0	36.8
Cycle Q Clear(g_c), s	23.3	0.0	17.5	6.0	0.0	0.0	32.0	9.5	9.5	1.5	10.0	36.8
Prop In Lane	0.91		1.00	0.25		0.43	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	384	0	340	105	0	0	453	1034	1063	49	1261	548
V/C Ratio(X)	0.89	0.00	0.70	0.79	0.00	0.00	1.56	0.26	0.26	0.43	0.31	0.88
Avail Cap(c_a), veh/h	910	0	806	327	0	0	453	1034	1063	453	1383	601
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.0	0.0	45.7	58.3	0.0	0.0	46.9	13.0	13.0	60.2	29.4	38.1
Incr Delay (d2), s/veh	2.8	0.0	1.0	5.0	0.0	0.0	261.2	0.4	0.4	2.2	0.4	15.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.6	0.0	6.9	2.7	0.0	0.0	46.7	3.7	3.8	0.7	4.3	15.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.8	0.0	46.7	63.3	0.0	0.0	308.1	13.4	13.4	62.4	29.8	53.7
LnGrp LOS	D	A	D	E	A	A	F	B	B	E	C	D
Approach Vol, veh/h		579			83			1256			894	
Approach Delay, s/veh		49.1			63.3			178.8			43.5	
Approach LOS		D			E			F			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	35.5	48.7		11.2	7.0	77.2		30.5				
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5				
Max Green Setting (Gmax), s	32.0	49.0		24.0	32.0	49.0		64.0				
Max Q Clear Time (g_c+I1), s	34.0	38.8		8.0	3.5	11.5		25.3				
Green Ext Time (p_c), s	0.0	5.8		0.1	0.0	8.0		1.7				

Intersection Summary												
HCM 6th Ctrl Delay			105.7									
HCM 6th LOS			F									



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	318	445	283	47	388	543	107	36	668	105
v/c Ratio	0.89	0.68	0.84	0.12	0.91	0.34	0.14	0.40	0.85	0.24
Control Delay	66.3	9.4	61.4	0.6	63.1	19.8	4.4	60.1	50.8	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.3	9.4	61.4	0.6	63.1	19.8	4.4	60.1	50.8	5.1
Queue Length 50th (ft)	198	2	172	0	236	126	0	23	225	0
Queue Length 95th (ft)	#349	92	#297	0	#398	171	32	#62	#347	29
Internal Link Dist (ft)	306		234			460			694	
Turn Bay Length (ft)		150		160	125		125	125		125
Base Capacity (vph)	370	666	363	421	451	1594	755	90	784	441
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.67	0.78	0.11	0.86	0.34	0.14	0.40	0.85	0.24

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	205	427	142	130	45	372	521	103	35	641	101
Future Volume (vph)	100	205	427	142	130	45	372	521	103	35	641	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	3.5	4.0	4.0	3.5	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.98		1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.97
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.98	1.00		0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1833	1558		1815	1583	1770	3539	1545	1770	3539	1531
Flt Permitted		0.98	1.00		0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1833	1558		1815	1583	1770	3539	1545	1770	3539	1531
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	104	214	445	148	135	47	388	543	107	36	668	105
RTOR Reduction (vph)	0	0	355	0	0	38	0	0	60	0	0	82
Lane Group Flow (vph)	0	318	90	0	283	9	388	543	47	36	668	23
Confl. Peds. (#/hr)			3	3					1			3
Confl. Bikes (#/hr)									1			2
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4			3			6			2
Actuated Green, G (s)		19.6	19.6		18.6	18.6	24.2	43.6	43.6	2.7	22.1	22.1
Effective Green, g (s)		19.6	19.6		18.6	18.6	24.2	43.6	43.6	2.7	22.1	22.1
Actuated g/C Ratio		0.20	0.20		0.19	0.19	0.24	0.44	0.44	0.03	0.22	0.22
Clearance Time (s)		4.0	4.0		4.0	4.0	3.5	4.0	4.0	3.5	4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	2.5	4.0	4.0	2.5	4.0	4.0
Lane Grp Cap (vph)		359	305		337	294	428	1543	673	47	782	338
v/s Ratio Prot		c0.17			c0.16		c0.22	0.15		0.02	c0.19	
v/s Ratio Perm			0.06			0.01			0.03			0.02
v/c Ratio		0.89	0.30		0.84	0.03	0.91	0.35	0.07	0.77	0.85	0.07
Uniform Delay, d1		39.1	34.3		39.3	33.3	36.8	18.8	16.4	48.3	37.4	30.8
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		22.0	0.5		16.6	0.0	22.4	0.6	0.2	50.5	11.5	0.4
Delay (s)		61.1	34.9		55.8	33.4	59.2	19.4	16.6	98.8	48.9	31.2
Level of Service		E	C		E	C	E	B	B	F	D	C
Approach Delay (s)		45.8			52.6			34.0			48.8	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	43.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	82.9%	ICU Level of Service	E
Analysis Period (min)	15		

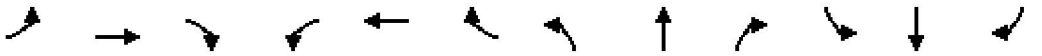
c Critical Lane Group



Lane Group	EBT	EBR	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	199	366	10	487	605	696	328
v/c Ratio	0.71	0.34	0.10	0.83	0.26	0.71	0.64
Control Delay	50.7	2.3	40.6	45.5	7.8	35.4	23.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.7	2.3	40.6	45.5	7.8	35.4	23.2
Queue Length 50th (ft)	104	0	3	248	61	183	88
Queue Length 95th (ft)	228	47	23	#678	157	324	229
Internal Link Dist (ft)	486		78		253	275	
Turn Bay Length (ft)		195		105			100
Base Capacity (vph)	511	1088	576	588	2353	1567	740
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.34	0.02	0.83	0.26	0.44	0.44

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	173	10	337	0	5	5	448	557	0	0	640	302
Future Volume (vph)	173	10	337	0	5	5	448	557	0	0	640	302
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0		5.0	5.0			5.0	5.0
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95			0.95	1.00
Frpb, ped/bikes		1.00	1.00		0.97		1.00	1.00			1.00	0.96
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00			1.00	1.00
Frt		1.00	0.85		0.93		1.00	1.00			1.00	0.85
Flt Protected		0.95	1.00		1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)		1775	1583		1677		1770	3539			3539	1512
Flt Permitted		0.73	1.00		1.00		0.95	1.00			1.00	1.00
Satd. Flow (perm)		1358	1583		1677		1770	3539			3539	1512
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	188	11	366	0	5	5	487	605	0	0	696	328
RTOR Reduction (vph)	0	0	177	0	5	0	0	0	0	0	0	104
Lane Group Flow (vph)	0	199	189	0	5	0	487	605	0	0	696	224
Confl. Peds. (#/hr)	2					2			3			10
Confl. Bikes (#/hr)									3			3
Turn Type	Perm	NA	pm+ov		NA		Prot	NA		Prot	NA	Perm
Protected Phases		4	1		3		1	6		5	2	
Permitted Phases	4		4	3								2
Actuated Green, G (s)		19.2	50.2		0.9		31.0	62.0			26.0	26.0
Effective Green, g (s)		19.2	50.2		0.9		31.0	62.0			26.0	26.0
Actuated g/C Ratio		0.20	0.52		0.01		0.32	0.64			0.27	0.27
Clearance Time (s)		5.0	5.0		5.0		5.0	5.0			5.0	5.0
Vehicle Extension (s)		2.0	2.0		2.0		2.0	3.0			3.0	3.0
Lane Grp Cap (vph)		268	899		15		565	2259			947	404
v/s Ratio Prot			0.07		c0.00		c0.28	0.17			c0.20	
v/s Ratio Perm		c0.15	0.05									0.15
v/c Ratio		0.74	0.21		0.34		0.86	0.27			0.73	0.55
Uniform Delay, d1		36.6	12.7		47.8		31.0	7.7			32.4	30.6
Progression Factor		1.00	1.00		1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2		9.3	0.0		4.8		12.4	0.1			3.0	1.7
Delay (s)		45.9	12.8		52.6		43.4	7.7			35.4	32.2
Level of Service		D	B		D		D	A			D	C
Approach Delay (s)		24.4			52.6			23.6			34.4	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	28.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	97.1	Sum of lost time (s)	20.0
Intersection Capacity Utilization	72.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

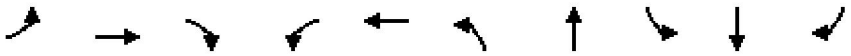
Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	40	5	79	5	5	10	60	862	0	5	807	30
Future Vol, veh/h	40	5	79	5	5	10	60	862	0	5	807	30
Conflicting Peds, #/hr	5	0	0	0	0	5	1	0	13	13	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	0
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	43	5	86	5	5	11	65	937	0	5	877	33

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1494	1968	440	1531	2001	487	911	0	0	950	0	0
Stage 1	888	888	-	1080	1080	-	-	-	-	-	-	-
Stage 2	606	1080	-	451	921	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	85	62	565	80	59	526	743	-	-	719	-	-
Stage 1	305	360	-	233	293	-	-	-	-	-	-	-
Stage 2	451	293	-	557	347	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	75	55	564	61	53	517	742	-	-	710	-	-
Mov Cap-2 Maneuver	181	161	-	150	148	-	-	-	-	-	-	-
Stage 1	278	357	-	210	264	-	-	-	-	-	-	-
Stage 2	393	264	-	462	344	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	24.6	22.2	0.7	0.1
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	742	-	-	316	231	710	-	-
HCM Lane V/C Ratio	0.088	-	-	0.427	0.094	0.008	-	-
HCM Control Delay (s)	10.3	-	-	24.6	22.2	10.1	-	-
HCM Lane LOS	B	-	-	C	C	B	-	-
HCM 95th %tile Q(veh)	0.3	-	-	2	0.3	0	-	-

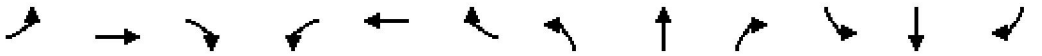


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	104	159	183	11	106	97	189	15	205	152
v/c Ratio	0.29	0.31	0.32	0.03	0.21	0.29	0.22	0.06	0.38	0.27
Control Delay	18.6	17.9	4.9	15.4	15.8	23.7	10.7	25.5	19.4	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.6	17.9	4.9	15.4	15.8	23.7	10.7	25.5	19.4	5.5
Queue Length 50th (ft)	24	37	0	2	22	24	23	4	46	0
Queue Length 95th (ft)	67	92	38	13	62	80	108	23	133	40
Internal Link Dist (ft)		435			214		337		398	
Turn Bay Length (ft)	265		265	155		120		160		160
Base Capacity (vph)	858	1246	1119	817	1215	1157	1420	1157	1443	1260
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.13	0.16	0.01	0.09	0.08	0.13	0.01	0.14	0.12

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	96	146	168	10	83	15	89	155	19	14	189	140
Future Volume (vph)	96	146	168	10	83	15	89	155	19	14	189	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	4.6	4.6	4.6		4.0	5.7		4.0	5.7	5.7
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1814		1770	1832		1770	1863	1583
Flt Permitted	0.69	1.00	1.00	0.66	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1283	1863	1583	1222	1814		1770	1832		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	104	159	183	11	90	16	97	168	21	15	205	152
RTOR Reduction (vph)	0	0	135	0	6	0	0	3	0	0	0	103
Lane Group Flow (vph)	104	159	48	11	100	0	97	186	0	15	205	49
Confl. Peds. (#/hr)						3						
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								6
Actuated Green, G (s)	13.6	13.6	13.6	13.6	13.6		7.2	22.9		1.1	16.8	16.8
Effective Green, g (s)	13.6	13.6	13.6	13.6	13.6		7.2	22.9		1.1	16.8	16.8
Actuated g/C Ratio	0.26	0.26	0.26	0.26	0.26		0.14	0.44		0.02	0.32	0.32
Clearance Time (s)	4.6	4.6	4.6	4.6	4.6		4.0	5.7		4.0	5.7	5.7
Vehicle Extension (s)	5.0	5.0	5.0	5.0	5.0		3.5	5.8		3.5	5.8	5.8
Lane Grp Cap (vph)	336	488	414	320	475		245	808		37	603	512
v/s Ratio Prot		c0.09			0.06		c0.05	0.10		0.01	c0.11	
v/s Ratio Perm	0.08		0.03	0.01								0.03
v/c Ratio	0.31	0.33	0.12	0.03	0.21		0.40	0.23		0.41	0.34	0.10
Uniform Delay, d1	15.4	15.5	14.6	14.3	15.0		20.4	9.0		25.1	13.3	12.3
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.1	0.8	0.3	0.1	0.5		1.2	0.4		8.4	0.9	0.2
Delay (s)	16.5	16.3	14.8	14.4	15.4		21.6	9.4		33.4	14.2	12.5
Level of Service	B	B	B	B	B		C	A		C	B	B
Approach Delay (s)		15.7			15.3			13.5			14.3	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	14.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	51.9	Sum of lost time (s)	14.3
Intersection Capacity Utilization	38.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	96	146	168	10	83	15	89	155	19	14	189	140
Future Volume (veh/h)	96	146	168	10	83	15	89	155	19	14	189	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	104	159	183	11	90	16	97	168	21	15	205	152
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	485	513	435	406	424	75	151	532	66	34	488	414
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.08	0.33	0.33	0.02	0.26	0.26
Sat Flow, veh/h	1282	1870	1585	1039	1545	275	1781	1630	204	1781	1870	1585
Grp Volume(v), veh/h	104	159	183	11	0	106	97	0	189	15	205	152
Grp Sat Flow(s),veh/h/ln	1282	1870	1585	1039	0	1819	1781	0	1834	1781	1870	1585
Q Serve(g_s), s	2.6	2.5	3.6	0.3	0.0	1.7	2.0	0.0	2.9	0.3	3.4	2.9
Cycle Q Clear(g_c), s	4.2	2.5	3.6	2.9	0.0	1.7	2.0	0.0	2.9	0.3	3.4	2.9
Prop In Lane	1.00		1.00	1.00		0.15	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	485	513	435	406	0	499	151	0	598	34	488	414
V/C Ratio(X)	0.21	0.31	0.42	0.03	0.00	0.21	0.64	0.00	0.32	0.44	0.42	0.37
Avail Cap(c_a), veh/h	1190	1541	1306	977	0	1499	1420	0	1852	1420	1889	1601
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.2	10.8	11.2	12.0	0.0	10.5	16.7	0.0	9.5	18.2	11.5	11.4
Incr Delay (d2), s/veh	0.5	0.7	1.4	0.1	0.0	0.4	5.4	0.0	1.0	10.2	1.9	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.8	1.0	0.1	0.0	0.5	0.8	0.0	0.9	0.2	1.2	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.6	11.6	12.6	12.0	0.0	11.0	22.1	0.0	10.5	28.4	13.4	13.1
LnGrp LOS	B	B	B	B	A	B	C	A	B	C	B	B
Approach Vol, veh/h		446			117			286			372	
Approach Delay, s/veh		12.2			11.1			14.4			13.9	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.7	18.0		14.9	7.2	15.5		14.9				
Change Period (Y+Rc), s	4.0	5.7		4.6	4.0	5.7		4.6				
Max Green Setting (Gmax), s	30.0	38.0		31.0	30.0	38.0		31.0				
Max Q Clear Time (g_c+I1), s	2.3	4.9		6.2	4.0	5.4		4.9				
Green Ext Time (p_c), s	0.0	2.5		3.9	0.3	4.4		1.0				

Intersection Summary												
HCM 6th Ctrl Delay			13.1									
HCM 6th LOS			B									

8: Ardilla Ave/Traffic Way & US 101 SB Ramp Performance by approach

Approach	EB	NB	SB	SE	All
Denied Del/Veh (s)	0.1	0.4	0.5	2.5	0.9
Total Del/Veh (s)	12.7	1.8	3.8	46.3	14.0

Intersection	
Int Delay, s/veh	3.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	45	74	187	52	53	128
Future Vol, veh/h	45	74	187	52	53	128
Conflicting Peds, #/hr	0	1	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	49	80	203	57	58	139

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	488	234	0	0	261	0
Stage 1	233	-	-	-	-	-
Stage 2	255	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	539	805	-	-	1303	-
Stage 1	806	-	-	-	-	-
Stage 2	788	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	513	803	-	-	1302	-
Mov Cap-2 Maneuver	513	-	-	-	-	-
Stage 1	805	-	-	-	-	-
Stage 2	750	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.8	0	2.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	662	1302	-
HCM Lane V/C Ratio	-	-	0.195	0.044	-
HCM Control Delay (s)	-	-	11.8	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.7	0.1	-

Lane Group	EBT	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	92	200	10	604	130	93	606
v/c Ratio	0.24	0.56	0.06	0.74	0.19	0.38	0.57
Control Delay	23.8	29.3	39.0	23.4	8.9	36.4	12.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.8	29.3	39.0	23.4	8.9	36.4	12.3
Queue Length 50th (ft)	25	57	3	176	14	31	101
Queue Length 95th (ft)	84	167	24	450	62	108	389
Internal Link Dist (ft)	369	467		389			478
Turn Bay Length (ft)			200		105	200	
Base Capacity (vph)	1021	920	648	1669	1375	648	1654
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.22	0.02	0.36	0.09	0.14	0.37

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	55	15	76	47	69	10	580	125	89	561	21
Future Volume (vph)	18	55	15	76	47	69	10	580	125	89	561	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6		4.6	5.3	5.3	4.1	5.3	
Lane Util. Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes		1.00			0.99		1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Frt		0.98			0.95		1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.99			0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1794			1724		1770	1863	1540	1770	1851	
Flt Permitted		0.93			0.86		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1687			1511		1770	1863	1540	1770	1851	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	19	57	16	79	49	72	10	604	130	93	584	22
RTOR Reduction (vph)	0	6	0	0	16	0	0	0	32	0	1	0
Lane Group Flow (vph)	0	86	0	0	184	0	10	604	98	93	605	0
Confl. Peds. (#/hr)			1	1					4			4
Confl. Bikes (#/hr)						1						
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			
Actuated Green, G (s)		14.1			14.1		0.7	30.7	30.7	6.8	36.3	
Effective Green, g (s)		14.1			14.1		0.7	30.7	30.7	6.8	36.3	
Actuated g/C Ratio		0.21			0.21		0.01	0.47	0.47	0.10	0.55	
Clearance Time (s)		4.6			4.6		4.6	5.3	5.3	4.1	5.3	
Vehicle Extension (s)		1.0			1.0		1.5	1.0	1.0	1.5	1.0	
Lane Grp Cap (vph)		362			324		18	871	720	183	1024	
v/s Ratio Prot							0.01	c0.32		c0.05	0.33	
v/s Ratio Perm		0.05			c0.12				0.06			
v/c Ratio		0.24			0.57		0.56	0.69	0.14	0.51	0.59	
Uniform Delay, d1		21.3			23.0		32.3	13.7	9.9	27.8	9.7	
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.1			1.4		19.4	1.9	0.0	0.8	0.6	
Delay (s)		21.4			24.4		51.7	15.7	9.9	28.6	10.3	
Level of Service		C			C		D	B	A	C	B	
Approach Delay (s)		21.4			24.4			15.2			12.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	15.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	65.6	Sum of lost time (s)	14.5
Intersection Capacity Utilization	64.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	55	15	76	47	69	10	580	125	89	561	21
Future Volume (veh/h)	18	55	15	76	47	69	10	580	125	89	561	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	19	57	16	79	49	72	10	604	130	93	584	22
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	147	224	55	218	89	101	23	715	603	145	783	30
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.01	0.38	0.38	0.08	0.44	0.44
Sat Flow, veh/h	200	1259	307	505	503	567	1781	1870	1577	1781	1790	67
Grp Volume(v), veh/h	92	0	0	200	0	0	10	604	130	93	0	606
Grp Sat Flow(s),veh/h/ln	1767	0	0	1574	0	0	1781	1870	1577	1781	0	1858
Q Serve(g_s), s	0.0	0.0	0.0	2.8	0.0	0.0	0.2	11.5	2.2	2.0	0.0	10.6
Cycle Q Clear(g_c), s	1.7	0.0	0.0	4.6	0.0	0.0	0.2	11.5	2.2	2.0	0.0	10.6
Prop In Lane	0.21		0.17	0.39		0.36	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	426	0	0	409	0	0	23	715	603	145	0	813
V/C Ratio(X)	0.22	0.00	0.00	0.49	0.00	0.00	0.43	0.84	0.22	0.64	0.00	0.75
Avail Cap(c_a), veh/h	1530	0	0	1377	0	0	912	2969	2503	912	0	2949
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.9	0.0	0.0	15.0	0.0	0.0	19.1	11.0	8.1	17.4	0.0	9.2
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.3	0.0	0.0	4.5	1.1	0.1	1.8	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	1.4	0.0	0.0	0.1	3.4	0.5	0.7	0.0	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.0	0.0	0.0	15.3	0.0	0.0	23.6	12.1	8.2	19.1	0.0	9.7
LnGrp LOS	B	A	A	B	A	A	C	B	A	B	A	A
Approach Vol, veh/h		92			200			744			699	
Approach Delay, s/veh		14.0			15.3			11.6			10.9	
Approach LOS		B			B			B			B	

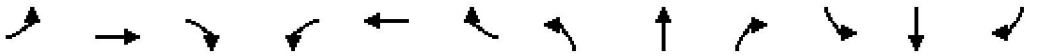
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.3	20.2		11.6	5.1	22.4		11.6				
Change Period (Y+Rc), s	4.1	5.3		4.6	4.6	5.3		4.6				
Max Green Setting (Gmax), s	20.0	62.0		33.0	20.0	62.0		32.0				
Max Q Clear Time (g_c+I1), s	4.0	13.5		3.7	2.2	12.6		6.6				
Green Ext Time (p_c), s	0.1	1.3		0.2	0.0	1.3		0.4				

Intersection Summary												
HCM 6th Ctrl Delay			11.9									
HCM 6th LOS			B									



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	222	64	102	100	43	716	14	78	682	147
v/c Ratio	0.72	0.21	0.60	0.49	0.40	0.77	0.02	0.54	0.68	0.18
Control Delay	65.6	14.6	74.3	33.7	74.7	34.5	0.1	74.3	27.8	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.6	14.6	74.3	33.7	74.7	34.5	0.1	74.3	27.8	11.4
Queue Length 50th (ft)	169	1	79	26	34	453	0	61	399	35
Queue Length 95th (ft)	314	45	170	98	89	812	0	138	709	92
Internal Link Dist (ft)	408		339			523			385	
Turn Bay Length (ft)		35		50	150		300	200		200
Base Capacity (vph)	598	540	610	566	365	1199	997	365	1207	995
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.12	0.17	0.18	0.12	0.60	0.01	0.21	0.57	0.15

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	115	89	59	14	80	92	40	659	13	72	627	135
Future Volume (vph)	115	89	59	14	80	92	40	659	13	72	627	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6		4.6	4.6	4.6	5.3	5.3	4.6	5.3	5.3
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00	0.95		1.00	1.00	1.00	1.00	0.97	1.00	1.00	0.96
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.97	1.00		0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1812	1506		1849	1583	1770	1863	1529	1770	1863	1522
Flt Permitted		0.97	1.00		0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1812	1506		1849	1583	1770	1863	1529	1770	1863	1522
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	125	97	64	15	87	100	43	716	14	78	682	147
RTOR Reduction (vph)	0	0	51	0	0	59	0	0	7	0	0	27
Lane Group Flow (vph)	0	222	13	0	102	41	43	716	7	78	682	120
Confl. Peds. (#/hr)			10	10					8			7
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7			8			2			6
Actuated Green, G (s)		21.4	21.4		11.5	11.5	6.3	63.6	63.6	10.3	67.6	67.6
Effective Green, g (s)		21.4	21.4		11.5	11.5	6.3	63.6	63.6	10.3	67.6	67.6
Actuated g/C Ratio		0.17	0.17		0.09	0.09	0.05	0.51	0.51	0.08	0.54	0.54
Clearance Time (s)		4.6	4.6		4.6	4.6	4.6	5.3	5.3	4.6	5.3	5.3
Vehicle Extension (s)		1.5	1.5		1.0	1.0	1.5	1.0	1.0	1.5	1.0	1.0
Lane Grp Cap (vph)		307	255		168	144	88	941	772	144	1000	817
v/s Ratio Prot		c0.12			c0.06		0.02	c0.38		c0.04	c0.37	
v/s Ratio Perm			0.01			0.03			0.00			0.08
v/c Ratio		0.72	0.05		0.61	0.28	0.49	0.76	0.01	0.54	0.68	0.15
Uniform Delay, d1		49.4	43.7		55.0	53.4	58.2	25.0	15.5	55.5	21.3	14.7
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		7.0	0.0		4.2	0.4	1.6	3.3	0.0	2.2	1.5	0.0
Delay (s)		56.4	43.8		59.2	53.8	59.8	28.3	15.5	57.8	22.8	14.7
Level of Service		E	D		E	D	E	C	B	E	C	B
Approach Delay (s)		53.6			56.5			29.9			24.5	
Approach LOS		D			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	33.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	125.9	Sum of lost time (s)	19.1
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↰	↑		↰	↑	
Traffic Vol, veh/h	43	0	45	5	5	0	90	461	5	0	299	49
Future Vol, veh/h	43	0	45	5	5	0	90	461	5	0	299	49
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	285	-	-	165	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	47	0	49	5	5	0	98	501	5	0	325	53

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1054	1054	352	1076	1078	504	378	0	0	506	0	0
Stage 1	352	352	-	700	700	-	-	-	-	-	-	-
Stage 2	702	702	-	376	378	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	204	226	692	197	219	568	1180	-	-	1059	-	-
Stage 1	665	632	-	430	441	-	-	-	-	-	-	-
Stage 2	429	440	-	645	615	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	187	207	692	171	201	568	1180	-	-	1059	-	-
Mov Cap-2 Maneuver	187	207	-	171	201	-	-	-	-	-	-	-
Stage 1	610	632	-	394	404	-	-	-	-	-	-	-
Stage 2	388	403	-	599	615	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	22.7	25.7	1.3	0
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1180	-	-	298	185	1059	-	-
HCM Lane V/C Ratio	0.083	-	-	0.321	0.059	-	-	-
HCM Control Delay (s)	8.3	-	-	22.7	25.7	0	-	-
HCM Lane LOS	A	-	-	C	D	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	1.3	0.2	0	-	-

Intersection	
Intersection Delay, s/veh	11.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	185	18	44	169	86	6	41	40	108	49	14
Future Vol, veh/h	15	185	18	44	169	86	6	41	40	108	49	14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	201	20	48	184	93	7	45	43	117	53	15
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.8	11.9	9.4	10.9
HCM LOS	B	B	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	7%	15%	63%
Vol Thru, %	47%	85%	57%	29%
Vol Right, %	46%	8%	29%	8%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	87	218	299	171
LT Vol	6	15	44	108
Through Vol	41	185	169	49
RT Vol	40	18	86	14
Lane Flow Rate	95	237	325	186
Geometry Grp	1	1	1	1
Degree of Util (X)	0.143	0.34	0.446	0.289
Departure Headway (Hd)	5.445	5.159	4.94	5.602
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	657	697	728	641
Service Time	3.486	3.19	2.968	3.638
HCM Lane V/C Ratio	0.145	0.34	0.446	0.29
HCM Control Delay	9.4	10.8	11.9	10.9
HCM Lane LOS	A	B	B	B
HCM 95th-tile Q	0.5	1.5	2.3	1.2