August 2025 | Draft Environmental Impact Report

RIO VISTA GENERAL PLAN UPDATE

for the City of Rio Vista

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Abbreviations and Acronyms

ABBREVIATIONS AND ACRONYMS

AAQS	ambient air quality standards
AB	Assembly Bill
ABAG	Association of Bay Area Governments
ACM	asbestos-containing materials
ADT	average daily traffic
amsl	above mean sea level
AQMP	air quality management plan
AST	aboveground storage tank
BAU	business as usual
bgs	below ground surface
BMP	best management practices
CAA	Clean Air Act
CAFE	corporate average fuel economy
CalARP	California Accidental Release Prevention Program
CalEMA	California Emergency Management Agency
Cal/EPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
CALGreen	California Green Building Standards Code
Cal/OSHA	California Occupational Safety and Health Administration
CalRecycle	California Department of Resources, Recycling, and Recovery
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CBC	California Building Code
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDE	California Department of Education
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act

Abbreviations and Acronyms

CESA	California Endangered Species Act
cfs	cubic feet per second
CGS	California Geologic Survey
CMP	congestion management program
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CO	carbon monoxide
CO_2e	carbon dioxide equivalent
Corps	US Army Corps of Engineers
CSO	combined sewer overflows
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibel
DPM	diesel particulate matter
DTSC	Department of Toxic Substances Control
EIR	environmental impact report
EPA	United States Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GHG	greenhouse gases
GWP	global warming potential
HCM	Highway Capacity Manual
HQTA	high quality transit area
HVAC	heating, ventilating, and air conditioning system
IPCC	Intergovernmental Panel on Climate Change
L_{dn}	day-night noise level
L_{eq}	equivalent continuous noise level

Abbreviations and Acronyms

LBP	lead-based paint
LCFS	low-carbon fuel standard
LOS	level of service
LST	localized significance thresholds
M_W	moment magnitude
MCL	maximum contaminant level
MEP	maximum extent practicable
mgd	million gallons per day
MMT	million metric tons
MPO	metropolitan planning organization
MT	metric ton
MWD	Metropolitan Water District of Southern California
NAHC	Native American Heritage Commission
NOP	Notice of Preparation
NO_X	nitrogen oxides
NPDES	National Pollution Discharge Elimination System
O_3	ozone
OES	California Office of Emergency Services
PM	particulate matter
POTW	publicly owned treatment works
ppm	parts per million
PPV	peak particle velocity
RCRA	Resource Conservation and Recovery Act
REC	recognized environmental condition
RMP	risk management plan
RMS	root mean square
RPS	renewable portfolio standard
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCAG	Southern California Association of Governments

SCAQMD	South Coast Air Quality Management District
SIP	state implementation plan
SLM	sound level meter
SoCAB	South Coast Air Basin
SO_X	sulfur oxides
SQMP	stormwater quality management plan
SR-	State Route
SRA	source receptor area [or state responsibility area]
SUSMP	standard urban stormwater mitigation plan
SWP	State Water Project
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminants
TNM	transportation noise model
tpd	tons per day
TRI	toxic release inventory
TTCP	traditional tribal cultural places
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	underground storage tank
UWMP	urban water management plan
V/C	volume-to-capacity ratio
VdB	velocity decibels
VHFHSZ	very high fire hazard severity zone
VMT	vehicle miles traveled
VOC	volatile organic compound
WQMP	water quality management plan
WSA	water supply assessment
YSAQMD	Yolo-Solano Air Quality Management District

Abbreviations and Acronyms

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1. Executive Summary

1.1 INTRODUCTION

This Draft Environmental Impact Report (EIR) addresses the environmental effects associated with the implementation of the proposed Rio Vista 2045 General Plan Update (proposed project). The California Environmental Quality Act (CEQA) requires that local government agencies consider the environmental impacts before acting on projects over which they have discretionary approval authority. An EIR analyzes potential environmental impacts to inform the public and support informed decisions by local and State governmental agency decision makers.

This Draft EIR has been prepared pursuant to the requirements of CEQA and Rio Vista's CEQA procedures. The City of Rio Vista, as the lead agency, has reviewed and revised all submitted drafts, technical studies, and reports as necessary to reflect its own independent judgement, including reliance on City technical personnel from other departments and review of all technical subconsultant report.

Data for this Draft EIR derive from discussions with affected agencies; analysis of adopted plans and policies; review of available studies, reports, data, and similar literature; and specialized environmental assessments (e.g., aesthetics, agricultural resources, air quality, biological resources, cultural resources, geological resources, hazards and hazardous materials, hydrology and water quality, land use, mineral resources, noise, population and housing, public services, recreation, transportation, and utilities and service systems).

1.2 ENVIRONMENTAL PROCEDURES

An EIR is the most comprehensive form of environmental documentation in CEQA and the CEQA Guidelines; it is intended to provide an objective, factually supported analysis and full disclosure of the environmental impacts of a proposed project with the potential to result in significant, adverse environmental impacts.

An EIR is one of various decision-making tools used by a lead agency to consider the merits and disadvantages of a project that is subject to its discretionary authority. Before approving a proposed project, the lead agency must consider the information in the EIR,

determine whether the EIR was prepared in accordance with CEQA and the CEQA Guidelines, determine that it reflects the independent judgment of the lead agency, adopt findings concerning the project's significant environmental impacts and alternatives, and adopt a statement of overriding considerations if significant impacts cannot be avoided.

1.2.1 EIR Format

The EIR is organized into the following chapters and associated appendices providing additional information about the project.

Chapter 1. Executive Summary: Summarizes the background and description of the proposed project, the format of this EIR, project alternatives, any critical issues remaining to be resolved, and the potential environmental impacts and mitigation measures identified for the project.

Chapter 2. Introduction: Describes the purpose of this EIR, background on the project, the notice of preparation (NOP), the use of incorporation by reference, and Final EIR certification.

Chapter 3. Project Description: A detailed description of the project, including its objectives, its area and location, approvals anticipated to be required as part of the project, necessary environmental clearances, and the intended uses of this EIR.

Chapter 4. Environmental Setting: A description of the physical environmental conditions in the vicinity of the project as they existed at the time the NOP was published, from local and regional perspectives. These provide the baseline physical conditions from which the lead agency determines the significance of the project's environmental impacts.

Chapter 5. Environmental Analysis: Each environmental topic is analyzed in a separate section that discusses the thresholds used to determine if a significant impact would occur; the methodology to identify and evaluate the potential impacts of the project; the existing environmental setting; the potential adverse and beneficial effects of the project; the level of impact significance before mitigation; the mitigation measures for the proposed project; the level of significance after mitigation is incorporated; and the potential cumulative impacts of the proposed project and other existing, approved, and proposed development in the area.

Chapter 6. Unavoidable Impacts, Irreversible Changes, and Growth-Inducing Impacts: Describes the significant unavoidable adverse impacts of the proposed project, irreversible environmental changes associated with the project, and ways in which the

proposed project would cause increases in population that could result in new physical or environmental impacts.

Chapter 7. Alternatives to the Proposed Project: Describes the alternatives and compares their impacts to the impacts of the proposed project. Alternatives include the No Project/Existing Plans Alternative and Increased Intensity Alternative.

Chapter 8. Organizations and Persons Consulted and Qualifications of Preparers: Lists the people and organizations that were contacted during the preparation of this EIR and lists the EIR's preparers.

Appendices: The appendices for this document comprise these supporting documents:

- **Appendix 2-1:** NOP and NOP Comments
- **Appendix 5.3-1:** Air Quality and Greenhouse Gas Emissions Assessment
- **Appendix 5.4-1:** Biological Resources Assessment
- **Appendix 5.5-1:** Cultural Resources Memo
- **Appendix 5.6-1:** City of Rio Vista General Plan Update Energy Consumption Calculations
- **Appendix 5.12-1:** Noise and Vibration Assessment

1.2.2 Type and Purpose of this Draft EIR

This Draft EIR fulfills the requirements for a Program EIR. Although the legally required contents of a Program EIR are the same as for a Project EIR, Program EIRs are typically more conceptual than Project EIRs, with a more general discussion of impacts, alternatives, and mitigation measures. According to Section 15168 of the CEQA Guidelines, a Program EIR may be prepared on a series of actions that can be characterized as one large project. Use of a Program EIR gives the lead agency an opportunity to consider broad policy alternatives and program-wide mitigation measures, as well as greater flexibility to address project-specific and cumulative environmental impacts on a comprehensive scale.

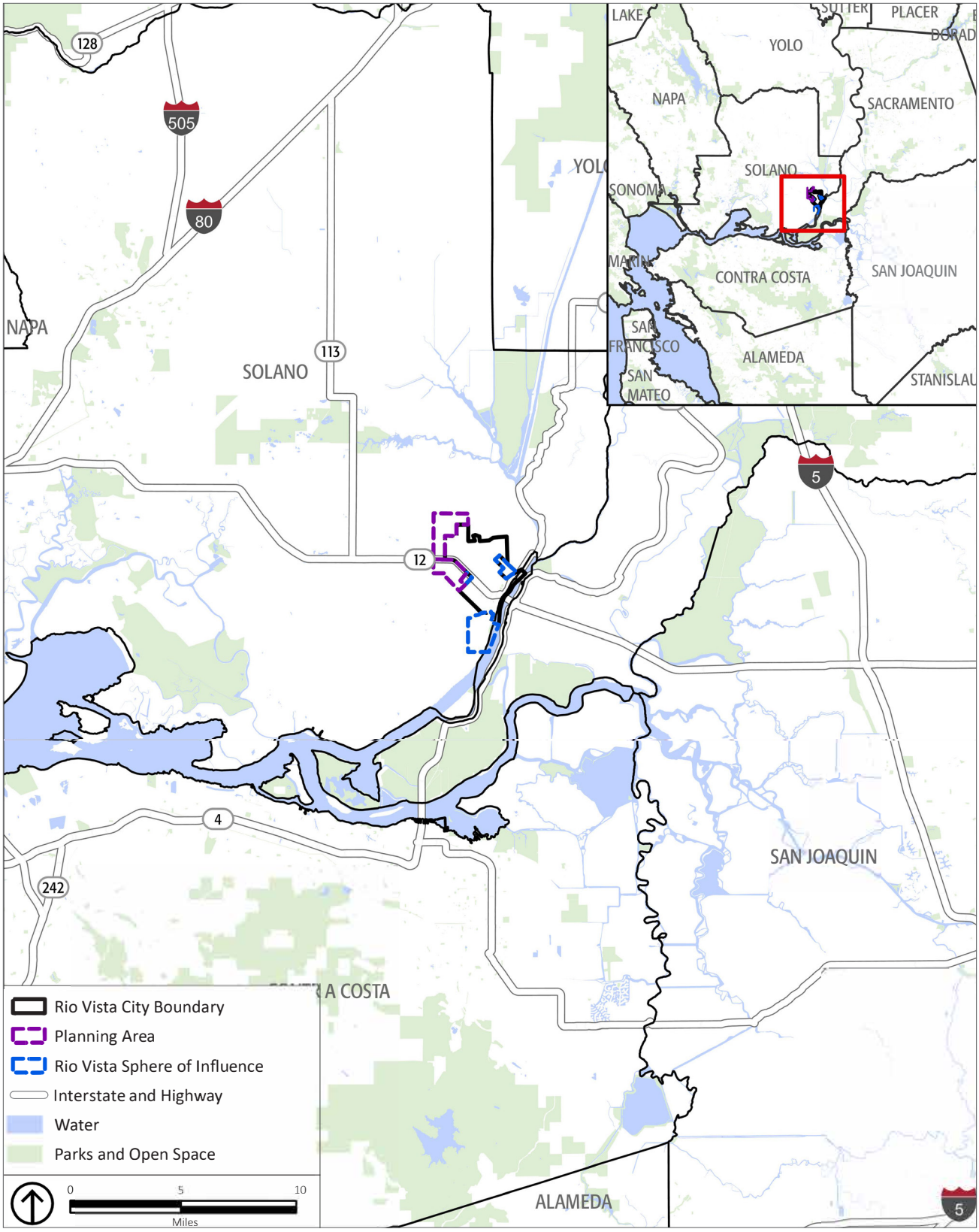
Agencies prepare Program EIRs for programs or a series of related actions that are linked geographically; logical parts of a chain of contemplated events, rules, regulations, or plans that govern the conduct of a continuing program; or individual activities carried out under the same authority and having generally similar environmental effects that can be mitigated in similar ways.

Once a Program EIR has been prepared, subsequent activities within the program must be evaluated to determine whether an additional CEQA document is necessary. However, if the Program EIR addresses the program's effects as specifically and comprehensively as possible, many subsequent activities may be within the Program EIR's scope, and additional environmental documents may not be required (CEQA Guidelines Section 15168[c]). When a lead agency relies on a Program EIR for a subsequent activity, it must incorporate feasible mitigation measures and alternatives from the Program EIR into the subsequent activities (CEQA Guidelines Section 15168[c][3]). If a subsequent activity would have effects outside the scope of the Program EIR, the lead agency must prepare a new Initial Study leading to a Negative Declaration, Mitigated Negative Declaration, or an EIR. Even in this case, the Program EIR still serves a valuable purpose as the first-tier environmental analysis. The CEQA Guidelines encourage the use of Program EIRs, citing five advantages:

- Provide a more exhaustive consideration of impacts and alternatives than would be practical in an individual EIR;
- Focus on cumulative impacts that might be slighted in a case-by-case analysis;
- Avoid continual reconsideration of recurring policy issues;
- Consider broad policy alternatives and programmatic mitigation measures at an early stage when the agency has greater flexibility to deal with them;
- Reduce paperwork by encouraging the reuse of data (through tiering) (CEQA Guidelines Section 15168[h]).

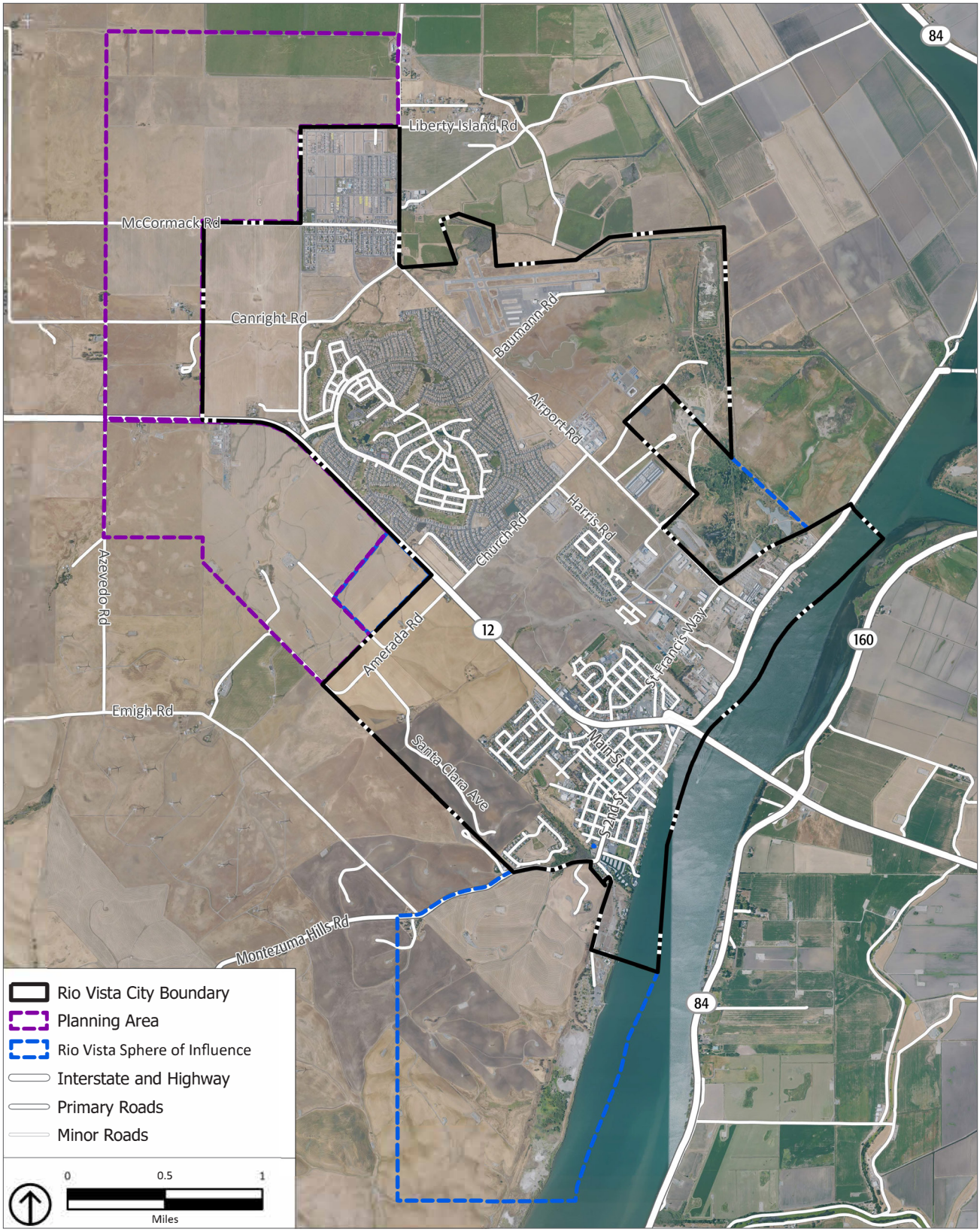
1.3 PROJECT LOCATION

The City of Rio Vista is an incorporated city in Solano County spanning 6.6 square miles, making it one of the smallest cities in Solano County by land area. Rio Vista is surrounded by Solano County unincorporated land, except the Sacramento River borders the city to the southeast and is the closest naturally occurring water resource. Rio Vista is in the heart of the Sacramento River Delta and the city is referred to as, "the Gateway to the Delta." Regional access to the city is provided by State Route (SR-) 12, which bisects the southwest portion of the city, SR-160, and SR-84. See Figure 1-1, *Regional Location,* and Figure 1-2, *Citywide Aerial,* which show the city's location and its regional context.



Source: Solano County 2024, PlaceWorks 2024.

Figure 1-1
Regional Location



Source: Solano County 2024, NAIP 2024, PlaceWorks 2024.

Figure 1-2
Citywide Aerial

1.4 PROJECT SUMMARY

The project is an update of the City of Rio Vista's existing 2001 General Plan. The General Plan is a State-required legal document that provides guidance to decision makers regarding the allocation of resources and determining the future physical form and character of development in the City of Rio Vista. The General Plan Update serves as the City's primary land use regulatory tool and is the basis for all planning-related decisions. The proposed General Plan includes updates to its Land Use and Community Character Element, Mobility and Circulation Element, Economic Development Element, Housing Element,[1] Parks and Recreation Element, Open Space and Resource Conservation Element, Public Facilities and Services Element, Safety Element, and Noise Element. The 2045 General Plan Update would amend the General Plan land use diagram. The land use diagram changes would occur throughout the city. The General Plan Update would redesignate a total of 773 acres. The proposed General Plan Update also includes changes to the titles of some of the land use designations.

1.5 SUMMARY OF PROJECT ALTERNATIVES

The CEQA Guidelines Section 15126.6[a] states that an EIR must address "a range of reasonable alternatives to the project, or to the location of the project, which could feasibly attain the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project and evaluated the comparative merits of the alternatives." The alternatives in this Draft EIR were based, in part, on their potential ability to reduce or eliminate the impacts determined to be significant and unavoidable for implementation of the proposed project. Project alternatives are assessed in further detail in Chapter 7, *Alternatives to the Proposed Project*.

1.5.1 No-Project/Existing Plans Alternative

The No Project/Existing Plans Alternative is required to discuss the existing conditions at the time the NOP is published and evaluate what would reasonably be expected to occur in the foreseeable future if the proposed project is not approved (CEQA Guidelines, Section 15126.6(e)). Pursuant to CEQA, this alternative is based on current plans and consistent with available infrastructure and community services. Therefore, the No Project/Existing Plans Alternative assumes that the proposed General Plan Update would not be adopted, the development intensity assumed in the existing General Plan would

[1] Rio Vista's 6th Cycle (2023-2031) Housing Element was updated separately before the rest of the General Plan and was adopted on July 18, 2023.

be followed, and existing General Plan goals, policies, and programs would remain unchanged.

1.5.2 Increased Density Alternative

This alternative would require new development to be at the 90th percentile of the density range in the General Plan. This alternative would require less land to accommodate the projected population for 2045. This alternative aims to encourage efficient land use and reduce future land annexation.

1.6 ISSUES TO BE RESOLVED

CEQA Guidelines Section 15123(b)(3) requires that an EIR identify issues to be resolved, including the choice among alternatives and whether or how to mitigate significant impacts. For the proposed project, the major issues to be resolved include decisions by the lead agency as to:

1. Whether this Draft EIR adequately describes the environmental impacts of the project.
2. Whether the benefits of the project override those environmental impacts that cannot be feasibly avoided or mitigated to a level of insignificance.
3. Whether the proposed land use changes are compatible with the character of the existing area.
4. Whether the identified goals, policies, or mitigation measures should be adopted or modified.
5. Whether there are other mitigation measures that should be applied to the project besides the mitigation measures identified in the Draf EIR.
6. Whether there are any alternatives to the project that would substantially lessen any of the significant impacts of the proposed project and achieve most of the basic project objectives.

1.7 AREAS OF CONTROVERSY

In accordance with Section 15123(b)(2) of the CEQA Guidelines, the EIR summary must identify areas of controversy known to the lead agency, including issues raised by agencies and the public. The City has no knowledge of expressed opposition to the project.

1.8 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE AFTER MITIGATION

Table 1-1, *Summary of Environmental Impacts, Mitigation Measures, and Level of Significance After Mitigation,* summarizes the conclusions of the environmental analysis contained in this EIR. Impacts are identified as significant or less than significant, and mitigation measures are identified for all significant impacts. The level of significance after imposition of the mitigation measures is also presented.

1. Executive Summary

Table 1-1 Summary of Environmental Impacts, Mitigation Measures, and Level of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
5.1 AESTHETICS			
Impact 5.1-1: Development in accordance with the proposed project would not substantially alter or damage scenic vistas or substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway.	Less Than Significant	No mitigation measures are required.	Less Than Significant
Impact 5.1-2: Development under the proposed project would alter visual appearance in the city but would not substantially degrade its existing visual character or quality.	Less Than Significant	No mitigation measures are required.	Less Than Significant
Impact 5.1-3: The proposed project would not generate substantial light and glare.	Less Than Significant	No mitigation measures are required.	Less Than Significant
5.2 AGRICULTURE AND FORESTRY RESOURCES			
Impact 5.2-1: The proposed project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) to nonagricultural use.	No Impact	No mitigation measures are required.	No Impact
Impact 5.2-2: The proposed project would not conflict with existing zoning for agricultural use or a Williamson Act contract nor would the proposed project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), Timberland (as defined by Public Resources Code Section 4526), or Timberland zoned Timberland Production (as defined by Government Code Section 51104(g)).	No Impact	No mitigation measures are required.	No Impact

Table 1-1 Summary of Environmental Impacts, Mitigation Measures, and Level of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact 5.2-3: The proposed project would result in the loss of forest land or conversion of forest land to non-forest use.	Less Than Significant	No mitigation measures are required.	Less Than Significant
Impact 5.2-4: The proposed project would not involve other changes in the existing environment which, due to their location or nature, could result in conversion of Important Farmland to nonagricultural use or conversion of forest land to non-forest use.	Less Than Significant	No mitigation measures are required.	Less Than Significant
5.3 AIR QUALITY			
Impact 5.3-1: Implementation of the proposed project would not conflict with or obstruct implementation of YSAQMD's air quality plans.	Less Than Significant	No mitigation measures are required.	Less Than Significant
Impact 5.3-2: Short-term construction activities associated with the proposed project would result in a cumulatively considerable net increase of criteria pollutants for which the project region is in non-attainment under applicable federal or State ambient air quality standards.	Potentially Significant	There are no feasible mitigation measures.	Significant and Unavoidable
Impact 5.3-3: Development under the proposed project would result in a cumulatively considerable net increase of criteria pollutants for which the project region is in non-attainment under applicable federal or State AAQS.	Potentially Significant	There are no feasible mitigation measures.	Significant and Unavoidable
Impact 5.3-4: The proposed project would expose sensitive receptors to substantial pollutant concentrations.	Less Than Significant	No mitigation measures are required.	Less Than Significant

1. Executive Summary

Table 1-1 Summary of Environmental Impacts, Mitigation Measures, and Level of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact 5.3-5: The proposed project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.	Less Than Significant	No mitigation measures are required.	Less Than Significant
5.4 BIOLOGICAL RESOURCES			
Impact 5.4-1: Implementation of the proposed project would not 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 plan, policies, or regulations or by the CDFW or USFWS.	Less Than Significant	No mitigation measures are required.	Less Than Significant
Impact 5.4-2: Implementation of the proposed project would not adversely impact sensitive natural communities, including wetlands and riparian habitat.	Less Than Significant	No mitigation measures are required.	Less Than Significant
Impact 5.4-3: Implementation of the proposed project could interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.	Less Than Significant	No mitigation measures are required.	Less Than Significant
Impact 5.4-4: The proposed project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance, adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan.	No Impact	No mitigation measures are required.	No Impact

Table 1-1 Summary of Environmental Impacts, Mitigation Measures, and Level of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
5.5 CULTURAL RESOURCES AND TRIBAL CULTURAL RESOURCES			
Impact 5.5-1: Implementation of the proposed project could cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines, Section 15064.5.	Potentially Significant	CUL-1 Site-Specific Cultural Resources Study and Evaluation of Resources. For projects that are on land that has not previously been developed, or will involve construction on areas where no previous ground disturbance or excavation has occurred, or for structures that are 50 years of age, a site-specific cultural resources study shall be completed prior to project approval. This site-specific cultural resources study shall include, but not be limited to a, records search with the California Historical Resource Information System, review of historical documents, a Sacred Lands File search with the NAHC, and a field survey/site effort. The findings of the study shall be submitted as a report that follows the California Office of Historic Preservation's recommended content and format. The report will provide the historic context, methods, results, and recommendations for appropriate findings	Significant and Unavoidable
Impact 5.5-2: Implementation of the proposed project could cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines, Section 15064.5.	Less Than Significant	No mitigation measures are required.	Less Than Significant
Impact 5.5-3: Implementation of the proposed project would not disturb human remains, including those interred outside of dedicated cemeteries.	Less Than Significant	No mitigation measures are required.	Less Than Significant
Impact 5.5-4: Implementation of the proposed project could cause a substantial adverse change in the significance of a tribal cultural resource that is listed or eligible for listing in the California Register of Historical Resources or a local register of historical resources, as defined in Public Resources Code Section 5020.1(k), or determined to be significant pursuant to the criteria set	Potentially Significant	TCR-1 Treatment of Native American Remains. In the event that Native American human remains are found during development of a project and a tribe(s) is determined to be MLD pursuant to Public Resources Code Section 5097.98 Inadvertent Discovery of Native American Human Remains, the following provisions shall apply: • The Medical Examiner shall immediately be notified; ground-disturbing activities in that location shall cease; and the applicable shall be allowed, pursuant to California Public Resources Code Section 5097.98(a), to:	Less Than Significant

1. Executive Summary

Table 1-1 Summary of Environmental Impacts, Mitigation Measures, and Level of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
forth in subdivision (c) of Public Resources Code Section 5024.1.		1. Inspect the site of the discovery, and 2. Make determinations as to how the human remains and grave goods should be treated and disposed of with appropriate dignity. • The applicable tribe(s) shall complete its inspection and make its MLD recommendation within 48 hours of getting access to the site. The tribe(s) shall have the final determination as to the disposition and treatment of human remains and grave goods. Said determination may include avoidance of the human remains, reburial on-site, or reburial on tribal or other lands that will not be disturbed in the future. • The applicable tribe(s) may wish to rebury said human remains and grave goods or ceremonial and cultural items on or near the site of their discovery, in an area which will not be subject to future disturbances over a prolonged period of time. Reburial of human remains shall be accomplished in compliance with the California Public Resources Code Sections 5097.98(a) and (b). TCR-2 Non-Disclosure of Location of Reburials. In the event that Native American human remains are discovered, the site of any reburial of Native American human remains shall not be disclosed and will not be governed by public disclosure requirements of the California Public Records Act, California Government Code Section 6250 et seq., unless otherwise required by law. The Medical Examiner shall withhold public disclosure of information related to such reburial pursuant to the specific exemption set forth in California Government Code Section 6254(r). The applicable tribe(s) will require that the location for reburial is recorded with the California Historic Resources Inventory System (CHRIS) on a form that is acceptable to the CHRIS center. TCR-3 Treatment of Cultural Resources. In the event that cultural items are found on-site, all such items, including ceremonial items and archaeological items, should be turned over to the applicable tribe(s) for appropriate treatment, unless otherwise ordered by a court or agency of competent jurisdiction. The project proponent should waive any and all claims to	

Table 1-1 Summary of Environmental Impacts, Mitigation Measures, and Level of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		ownership of tribal ceremonial and cultural items, including archaeological items, which may be found on a project site in favor of the applicable tribe(s). If any intermediary, for example, an archaeologist retained by the project proponent, is necessary, said entity or individual shall not possess those items for longer than is reasonably necessary, as determined solely by the applicable tribe(s). TCR-4 Inadvertent Discoveries. In the event that additional significant site(s) not identified as significant in a project environmental review process, but are later determined to be significant, are located within a project impact area, such sites will be subjected to further archaeological and cultural significance evaluation by the project proponent, lead agency, and the applicable tribe(s) to determine if additional mitigation measures are necessary to treat sites in a culturally appropriate manner consistent with CEQA requirements for mitigation of impacts to cultural resources. If there are human remains present that have been identified as Native American, all work will cease for a period of up to 30 days in accordance with federal law.	
5.6 ENERGY			
Impact 5.6-1: Implementation of the proposed project would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.	Less Than Significant	No mitigation measures are required.	Less Than Significant
Impact 5.6-2: Implementation of the proposed project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency.	Less Than Significant	No mitigation measures are required.	Less Than Significant

1. Executive Summary

Table 1-1 Summary of Environmental Impacts, Mitigation Measures, and Level of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact 5.6-3: The proposed project would not require or result in the relocation or construction of new or expanded energy facilities, the construction or relocation of which could cause significant environmental effects.	Less Than Significant	No mitigation measures are required.	Less Than Significant
5.7 GEOLOGY, SOILS, AND MINERAL RESOURCES			
Impact 5.7-1: The proposed project could directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault; ii) Strong seismic ground shaking; iii) Seismic-related ground failure, including liquefaction; or iv) Landslides, mudslides, or other similar hazards	Less Than Significant	No mitigation measures are required.	Less Than Significant
Impact 5.7-2: Unstable geologic unit or soils conditions, including soil erosion and loss off topsoil, could result from development of the proposed project.	Less Than Significant	No mitigation measures are required.	Less Than Significant
Impact 5.7-3: Development under the proposed project would connect to existing sewer lines or comply with State and local regulations for on-site septic tanks.	Less Than Significant	No mitigation measures are required.	Less Than Significant

Table 1-1 Summary of Environmental Impacts, Mitigation Measures, and Level of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact 5.7-4: Development under the proposed project could directly or indirectly destroy a unique paleontological resource or unique geologic feature.	Potentially Significant	GEO-1 Prior to issuance of a grading permit, the project applicant shall retain a Certified Paleontologist to assess the potential for presence of paleontological resources and the potential for project construction to affect such resources if present. If it is determined, to the satisfaction of the City, that there is low potential for discovery or disturbance of paleontological resources, no further action shall be required. If potential for discovery is deemed moderate to high, the project applicant shall retain a Certified Paleontologist to monitor all initial ground-disturbing activities in native soils or sediments. If the paleontologist, upon observing initial earthwork, determines there is low potential for discovery, no further action shall be required, and the paleontologist shall submit a memo to the City confirming findings of low potential. Should any paleontological resources (i.e., fossils) be uncovered during project construction activities, all work within a 100-foot radius of the discovery site shall be halted or diverted to other areas on the site and the City shall be immediately notified. A Certified Paleontologist shall evaluate the finds and recommend appropriate next steps to ensure that the resource is not substantially adversely impacted, including but not limited to avoidance, preservation in place, excavation, documentation, curation, data recovery, or other appropriate measures. Further ground disturbance shall not resume within a 100-foot radius of the discovery site until an agreement has been reached between the project applicant, a Certified Paleontologist, and the City as to the appropriate preservation or mitigation measures to ensure that the resource is not substantially adversely impacted. Salvage and collection of significant fossils shall be done in accordance with the Society of Vertebrate Paleontology guidelines. Any paleontological resources salvaged shall be provided for curation at a local curation facility, or any other local museum or repository willing and able to accept and house the resource to preserve for future scientific study.	Less Than Significant

1. Executive Summary

Table 1-1 Summary of Environmental Impacts, Mitigation Measures, and Level of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact 5.7-5: The proposed project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state or result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.	Less Than Significant	No mitigation measures are required.	Less Than Significant
5.8 GREENHOUSE GAS EMISSIONS			
Impact 5.8-1: Implementation of the proposed project could result in emissions that would exceed project-level construction significance threshold established by the SMAQMD.	Potentially Significant	There are no feasible mitigation measures.	Significant and Unavoidable
Impact 5.8-2: Implementation of the proposed project could conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing GHG emissions.	Potentially Significant	There are no feasible mitigation measures.	Significant and Unavoidable
5.9 HAZARDS AND HAZARDOUS MATERIALS			
Impact 5.9-1: Implementation of the proposed project, including construction and operation activities, could involve the transport, use, and/or disposal of hazardous materials; however, compliance with existing local, State, and federal regulations would ensure impacts are minimized.	Less Than Significant	No mitigation measures are required.	Less Than Significant

Table 1-1 Summary of Environmental Impacts, Mitigation Measures, and Level of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact 5.9-2: Implementation of the proposed project could facilitate development of a site which is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5, but would not create a significant hazard to the public or the environment.	Less Than Significant	No mitigation measures are required.	Less Than Significant
Impact 5.9-3: Development under the proposed project would not result in a safety hazard or excessive noise for people residing or working within two miles of an airport.	Less Than Significant	No mitigation measures are required.	Less Than Significant
Impact 5.9-4: Development under the proposed project could affect the implementation of an emergency responder or evacuation plan.	Less Than Significant	No mitigation measures are required.	Less Than Significant
Impact 5.9-5: The project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.	Less Than Significant	No mitigation measures are required.	Less Than Significant
5.10 HYDROLOGY AND WATER QUALITY			
Impact 5.10-1: Implementation of the proposed project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.	Less Than Significant	No mitigation measures are required.	Less Than Significant

1. Executive Summary

Table 1-1 Summary of Environmental Impacts, Mitigation Measures, and Level of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact 5.10-2: Implementation of the proposed project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.	Less Than Significant	No mitigation measures are required.	Less Than Significant
Impact 5.10-3: Implementation of the proposed project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: i) result in substantial erosion or siltation on- or off-site; ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or iv) impede or redirect flood flows.	Less Than Significant	No mitigation measures are required.	Less Than Significant
Impact 5.10-4: Implementation of the proposed project would not risk release of pollutants due to project inundation if in a flood hazard, tsunami, or seiche zones.	Less Than Significant	No mitigation measures are required.	Less Than Significant
Impact 5.10-5: The proposed project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.	Less Than Significant	No mitigation measures are required.	Less Than Significant

Table 1-1 Summary of Environmental Impacts, Mitigation Measures, and Level of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
5.11 LAND USE AND PLANNING			
Impact 5.11-1: Project implementation would not divide an established community.	Less Than Significant	No mitigation measures are required.	Less Than Significant
Impact 5.11-2: Project implementation would not conflict with applicable plans adopted for the purpose of avoiding or mitigating an environmental effect.	Less Than Significant	No mitigation measures are required.	Less Than Significant
5.12 NOISE			
Impact 5.12-1: The proposed project would result in the generation of substantial temporary and 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.	Potentially Significant	There are no feasible mitigation measures.	Significant and Unavoidable
Impact 5.12-2: The proposed project would not result in the generation of excessive groundborne vibration or groundborne noise levels.	Less Than Significant	No mitigation measures are required.	Less Than Significant
Impact 5.12-3: The proposed project would not expose people residing or working in the project area to excessive noise levels within the vicinity of a private airstrip or an airport land use plan.	Less Than Significant	No mitigation measures are required.	Less Than Significant

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Table 1-1 Summary of Environmental Impacts, Mitigation Measures, and Level of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
5.13 POPULATION AND HOUSING			
Impact 5.13-1: The proposed project would not induce substantial unplanned population growth in the city.	Less Than Significant	No mitigation measures are required.	Less Than Significant
Impact 5.13-2: The proposed project would not result in the displacement of people and/or housing.	Less Than Significant	No mitigation measures are required.	Less Than Significant
5.14 PUBLIC SERVICES AND RECREATION			
Impact 5.14-1: The proposed project could introduce new structures and residents into the RVFD service boundaries, thereby increasing the requirement for fire protection facilities and personnel.	Less Than Significant	No mitigation measures are required.	Less Than Significant
Impact 5.14-2: The proposed project could introduce new structures and residents into the RVPD boundaries, thereby potentially increasing the requirement for police protection facilities and personnel.	Less Than Significant	No mitigation measures are required.	Less Than Significant
Impact 5.14-3: Development under the proposed project could generate new students who would impact the school enrollment capacities of area schools and result in the need for new and/or expanded school facilities, the construction of which could result in environmental impacts	Less Than Significant	No mitigation measures are required.	Less Than Significant
Impact 5.14-4: Development under the proposed project could generate new residents in the city and result in the need for new and/or expanded library facilities, the construction of which could result in environmental impacts.	Less Than Significant	No mitigation measures are required.	Less Than Significant

Table 1-1 Summary of Environmental Impacts, Mitigation Measures, and Level of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact 5.14-5: The proposed project could generate additional residents that would increase the use of existing park and recreational facilities but would not require the immediate provision of new and/or expanded recreational facilities.	Less Than Significant	No mitigation measures are required.	Less Than Significant
5.15 TRANSPORTATION			
Impact 5.15-1: Implementation of the proposed project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.	Less Than Significant	No mitigation measures are required.	Less Than Significant
Impact 5.15-2: Implementation of the proposed project would conflict or be inconsistent with CEQA Guidelines Section 15064.3 (b).	Potentially Significant	See Table 5.15-4, Potential Project-Specific VMT Reduction Measures	Significant and Unavoidable
Impact 5.15-3: Implementation of the proposed project would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	Less Than Significant	No mitigation measures are required.	Less Than Significant
Impact 5.15-4: Development associated with the proposed project could result in inadequate emergency access.	Less Than Significant	No mitigation measures are required.	Less Than Significant
5.16 UTILITIES AND SERVICE SYSTEMS			
Impact 5.16-1: The proposed project would not require or result in the relocation or construction of new or expanded wastewater treatment facilities, the construction or relocation of which could cause significant environmental effects.	Less Than Significant	No mitigation measures are required.	Less Than Significant

1. Executive Summary

Table 1-1 Summary of Environmental Impacts, Mitigation Measures, and Level of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact 5.16-2: The wastewater treatment provider would have adequate capacity to serve the proposed project's projected demand in addition to the provider's existing commitments.	Less Than Significant	No mitigation measures are required.	Less Than Significant
Impact 5.16-3: Water supply and delivery systems are adequate to meet project requirements.	Less Than Significant	No mitigation measures are required.	Less Than Significant
Impact 5.16-4: The proposed project would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years.	Less Than Significant	No mitigation measures are required.	Less Than Significant
Impact 5.16-5: Existing and/or proposed storm drainage systems are adequate to serve the drainage requirements of the proposed project	Less Than Significant	No mitigation measures are required.	Less Than Significant
Impact 5.16-6: Existing and/or proposed facilities would be able to accommodate project-generated solid waste.	Less Than Significant	No mitigation measures are required.	Less Than Significant
Impact 5.16-7: The proposed project would comply with federal, State, and local statutes and regulations related to solid waste.	Less Than Significant	No mitigation measures are required.	Less Than Significant
5.17 WILDFIRE			
Impact 5.17-1: Development under the proposed project would not substantially impair an adopted emergency response plan or emergency evacuation plan.	Less Than Significant	No mitigation measures are required.	Less Than Significant

Table 1-1 Summary of Environmental Impacts, Mitigation Measures, and Level of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact 5.17-2: Development under the proposed project could exacerbate wildfire risks due to slope, prevailing winds, and other factors, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire.	Less Than Significant	No mitigation measures are required.	Less Than Significant
Impact 5.17-3: Development under the proposed project could require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities), but it would not exacerbate fire risk or result in temporary or ongoing impacts to the environment.	Less Than Significant	No mitigation measures are required.	Less Than Significant
Impact 5.17-4: The project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.	Less Than Significant	No mitigation measures are required.	Less Than Significant

1. Executive Summary

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2. Introduction

2.1 PURPOSE OF THE ENVIRONMENTAL IMPACT REPORT

The California Environmental Quality Act (CEQA) requires that all state and local governmental agencies consider the environmental consequences of projects over which they have discretionary authority before acting on those projects. This draft environmental impact report (Draft EIR) has been prepared to satisfy CEQA and the CEQA Guidelines. The EIR) is the public document designed to provide decision makers and the public with an analysis of the environmental effects of the proposed project, to indicate possible ways to reduce or avoid environmental damage and to identify alternatives to the project. The EIR must also disclose significant environmental impacts that cannot be avoided; growth-inducing impacts; effects not found to be significant; and significant cumulative impacts of all past, present, and reasonably foreseeable future projects.

Under CEQA, the lead agency is "the public agency which has the principal responsibility for carrying out or approving a project which may have a significant effect upon the environment" (Public Resources Code Section 21067). The City of Rio Vista has the principal responsibility for approval and implementation of the Rio Vista General Plan Update (project or proposed project). For this reason, the City of Rio Vista is the CEQA lead agency for this project.

The intent of this Draft EIR is to provide sufficient information on the potential environmental impacts of the proposed project to allow the City of Rio Vista (City) to make an informed decision regarding approval of the project. Specific discretionary actions to be reviewed by the City are described in Section 3.4, *Intended Use of the EIR and Proposed Project*.

This Draft EIR has been prepared in accordance with requirements of the:

- CEQA of 1970, as amended (Public Resources Code, Section 21000 et seq.)
- State Guidelines for the Implementation of the CEQA of 1970 (CEQA Guidelines), as amended (California Code of Regulations, Section 15000 et seq.)

The overall purpose of this Draft EIR is to inform the lead agency, responsible agencies, decision makers, and the public about the potential environmental effects of the development and operation of the proposed project. This Draft EIR addresses effects that may be significant and adverse; evaluates alternatives to the project; and identifies mitigation measures to reduce or avoid potentially significant adverse effects.

2.2 NOTICE OF PREPARATION

The City of Rio Vista determined that an EIR would be required for this project and issued a Notice of Preparation (NOP) (see Appendix 2-1). The NOP process helps determine the scope of the environmental issues to be addressed in the EIR. Comments were received during the first NOP public review period from **October 30, 2024**, through **November 29, 2024.** All comments received during both public review periods are included in Appendix 2-1 and summarized in Table 2-1, *NOP Comment Letters and Scoping Meeting Summary*.

A total of three agencies/interested parties responded to the NOP. There were no participants at the scoping meeting held on November 19, 2024, and no comments were received; CEQA does not require a formal response to the comments.

Table 2-1 NOP Comment Letters and Scoping Meeting Summary

Agency/ Organization/ Individual	Date	Summary of Comments	Section of EIR Comment is Addressed
Native American Heritage Commission (NAHC)	11/8/2024	▪ The NAHC explains CEQA and the requirement for the lead agency to determine substantial impacts to historical resources within the project's area. ▪ The NAHC explains Assembly Bill 52 (AB 52) and Senate Bill 18 (SB 18), which both have tribal consultation requirements. ▪ The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of the proposed project as early as possible. ▪ The NAHC summarizes the requirements for AB 52 and SB 18. ▪ The NAHC provides recommendations for cultural resources assessments.	Chapter 5.5, Cultural Resources and Tribal Cultural Resources

Table 2-1 NOP Comment Letters and Scoping Meeting Summary

Agency/ Organization/ Individual	Date	Summary of Comments	Section of EIR Comment is Addressed
California Department of Transportation (Caltrans)	11/26/2024	▪ Caltrans explains that with the enactment of SB 743, Caltrans is focused on maximizing efficient development patterns, innovative travel demand reduction strategies, and multimodal improvements. ▪ Caltrans recommends reviewing and including the reference to the *Caltrans District 4 Pedestrian Plan* (2021) and the *Caltrans District 4 Bike Plan* (2018) in the EIR and that any Complete Streets reference should be updated to reflect Caltrans Director's Policy 37. ▪ Caltrans states they look forward to collaborating with the City to prioritize projects that are equitable and provide meaningful benefits to historically underserved communities and encourages the City to foster meaningful, equitable, and ongoing public engagement in the General Plan development process to ensure future transportation decisions and investments reflect community interests and values.	Chapter 5.15, Transportation
California Department of Fish and Wildlife (CDFW)	12/11/2024	▪ CDFW explains what the project description and EIR should include regarding CEQA. ▪ CDFW describes regulatory requirements for the California Endangered Species Act (CESA), Native Plant Protection Act, lake and streambed alteration, raptors and other nesting birds, and California fully protected species; CDFW identifies potential project impacts pursuant to the these regulatory requirements. ▪ CDFW recommends that the EIR should provide sufficient information regarding the environmental setting to understand the project and its alternative's potentially significant impacts on the environment. ▪ CDFW recommends that the CEQA document prepared for the project provide baseline habitat assessments for special-status plant, fish, and wildlife species located and potentially located within the project area and surrounding lands, including, but not limited	Chapter 5.4, Biological Resources

2. Introduction

Table 2-1 NOP Comment Letters and Scoping Meeting Summary

Agency/ Organization/ Individual	Date	Summary of Comments	Section of EIR Comment is Addressed
		to, all rare, threatened, or endangered species. ▪ CDFW recommends that the EIR should describe aquatic habitats, such as wetlands or waters of the U.S. or State, and any sensitive natural communities or riparian habitat occurring on or adjacent to the project site (for sensitive natural communities) and any stream or wetland setback distances the City may require. ▪ CDFW recommends that prior to project implementation, surveys be conducted for special-status species with potential to occur, following recommended survey protocols if available. ▪ CDFW recommends that the EIR should discuss all direct and indirect impacts (temporary and permanent) that may occur with implementation of the project. ▪ CDFW recommends that the EIR should also identify reasonably foreseeable future projects in the project vicinity, disclose any cumulative impacts associated with these projects, determine the significance of each cumulative impact, and assess the significance of the project's contribution to the impact. ▪ CDFW offers specific comments related to specific impacts and recommendations to assist the City in adequately identifying and/or mitigating the project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources; comments and mitigation measures are provided for the Swainson's hawk, Mason's lilaeopsis and other special-status plants; burrowing owl; bank swallow; CESA-listed and other special-status fish; white-tailed kite, golden eagle, and other nesting birds; giant garter snake; sensitive natural communities; wetlands; riparian habitat; and lake and streambed notification.	

Table 2-1 NOP Comment Letters and Scoping Meeting Summary

Agency/ Organization/ Individual	Date	Summary of Comments	Section of EIR Comment is Addressed
		▪ CDFW acknowledges that the project will likely have an impact on fish and/or wildlife, and assessment of filing fees is necessary and states that fees are payable upon filing of the Notice of Determination by the lead agency and serve to help defray the cost of environmental review by CDFW.	

2.3 SCOPE OF THIS DRAFT EIR

The scope of the Draft EIR was determined based on the CEQA Guidelines Appendix G Checklist and comments received in response to the NOP. Pursuant to Sections 15126.2 and 15126.4 of the CEQA Guidelines, the Draft EIR should identify any potentially significant adverse impacts and recommend mitigation that would reduce or eliminate these impacts to levels of insignificance.

The information in Chapter 3, *Project Description*, establishes the basis for analyzing future, project-related environmental impacts. However, further environmental review by the City may be required as more detailed information and plans are submitted on a project-by-project basis.

2.4 INCORPORATION BY REFERENCE

According to Section 15150 of the CEQA Guidelines, an EIR may incorporate by reference all or portions of another document which is a matter of public record or is generally available to the public. The following documents are incorporated by reference into this Draft EIR and are available for review at the City of Rio Vista Community Planning Department at One Main Street, Rio Vista, California, and online at the address noted in Section 2.5.

- City of Rio Vista Municipal Code (https://ecode360.com/RI4996). The Municipal Code contains regulations that apply to new development and contain standards such as payment of impact fees, building setbacks, permit requirements, hours of operation, and types of land use that implement the General Plan. The Municipal Code also includes requirements for water and wastewater connection, refuse disposal, and subdivision standards. The standards of the Municipal Code may be referenced in this EIR as a means of addressing one or more physical impacts.

2.5 FINAL EIR CERTIFICATION

This Draft EIR is being circulated for public review for 45 days. Interested agencies and members of the public are invited to provide written comments on the Draft EIR to Krystine Ball, Public Works Program Manager, at kball@ci.rio.vista.ca.us, or mail comments to One Main Street, City of Rio Vista, California. Upon completion of the 45-day review period, the City of Rio Vista will review all written comments received and prepare written responses for each. A Final EIR will incorporate the received comments, responses to the comments, and any changes to the DEIR that result from comments. The Final EIR will be presented to the City of Rio Vista for potential certification as the environmental document for the project. Anyone who comments on the Draft EIR will be notified of the availability of the Final EIR and the date of the public hearing before the City.

The Draft EIR is available to the public for review at the following locations:

- On the City's website: https://www.riovistacity.com/planning/page/california-environmental-quality-act-ceqa-and-environmental-reports
- On the City's General Plan website: https://www.riovistacity.com/planning/page/general-plan-rio-vista-2045
- In person at the City of Rio Vista Planning Department: One Main Street, Rio Vista, CA 94571

2.6 MITIGATION MONITORING

Section 15097(a) of the CEQA Guidelines requires that the City adopt a mitigation monitoring and reporting program (MMRP) for any project for which it has required mitigation measures to either reduce impacts to less than significant, or made findings of overriding considerations if despite all feasible mitigation, the resulting impact cannot be reduced to less than significant. The intent of the MMRP is to ensure the implementation of all mitigation measures adopted as part of the project approvals.

CEQA Guidelines Section 15097(b) states that "Where the project at issue is the adoption of a general plan, specific plan, community plan or other plan-level document (zoning, ordinance, regulation, policy), the monitoring plan shall apply to policies and any other portion of the plan that is a mitigation measure or adopted alternative. The monitoring plan may consist of policies included in plan-level documents. The annual report on general plan status required pursuant to the Government Code is one example of a reporting program for adoption of a city or county general plan." For the proposed project, a list of mitigation measures and policies that will apply to subsequent development projects will be prepared as part of the Final EIR.

3. Project Description

3.1 PROJECT LOCATION

Rio Vista is an incorporated city in east Solano County, midway between Sacramento and San Francisco. The city is bounded on the north, west, and south by unincorporated agricultural lands in Solano County and on the east by the Sacramento River and unincorporated land in Sacramento County. The city is bisected by State Highway 12 and is approximately 18 miles east of Interstate 80. Figure 1-1, *Regional Location,* and Figure 1-2, *Citywide Aerial,* show the City's location and its regional context.

3.2 PROJECT OBJECTIVES

The Rio Vista 2045 General Plan Update (proposed project) is a comprehensive update of the 2001 Rio Vista General Plan. Many of the qualities of the Rio Vista community remain quite similar to the community of 2001 and the proposed project seeks to build on the best qualities of the community with approaches and strategies that better match current and anticipated economic, social, and demographic trends.

As Rio Vista looks to the General Plan 2045 horizon, the community's potential to grow outward appears limited by physical constraints, such as the Sacramento River and historic natural gas facilities and by competitive land ownership as part of the East Solano Plan. Due to these constraints, new development is expected to focus inward into the existing community and the following objectives will inform City decisions to promote the quality of life, economic prosperity, and opportunities desired by our residents and visitors to Rio Vista.

The objectives of the Rio Vista 2045 General Plan Update, as defined by the Guiding Principles of the General Plan, are:

1. **Revitalize Downtown and the Waterfront District**.
    - Promote a downtown that is a vibrant destination with unique retail, entertainment, arts, dining, and lodging options.
    - Support and attract businesses. Provide the infrastructure needed to support growth in the downtown and waterfront area.
    - Promote, incentivize, and foster the expansion of retail, commercial, and housing uses in the downtown and waterfront area.
    - Preserve the historic character of downtown while supporting new development.

2. **Improve Mobility and Access for All Users**.
   - Provide a safe, efficient, and accessible roadway system that serves the mobility needs of all users.
   - Improve the City's circulation network to provide safe travel for pedestrians, bicyclist, vehicles, and trucks.
   - Efficiently move people and goods without compromising quality of life, safety, and smooth traffic flow for residents and businesses.
3. **Support a Variety of Housing Options.**
   - Encourage a mix of housing types to create diverse neighborhoods that meet the needs of all Rio Vista residents.
   - Promote the building, retention, and renovation of housing to meet the needs of all incomes, ages, and abilities.
4. **Foster a Sustainable Community**.
   - Plan for public facilities that respond to the community's growing needs and a changing environment.
   - Ensure today's needs are met without jeopardizing the community's ability to meet future needs.
   - Promote high-quality, long-lasting development that allows residents to meet daily needs, such as education of our children, shopping, employment, and recreation, in close proximity to their homes.
   - Encourage resource-efficient building techniques, materials, and other principles of green building design in new building construction and renovations.
5. **Offer Recreational Opportunities**.
   - Ensure all residents have easy access to recreational opportunities, such as parks, play fields, river frontage, walking and biking paths and trails.
   - Expand parks and recreational programs to serve both residents and visitors. Provide a variety of sports and activities for Rio Vista residents of all ages.
6. **Foster Economic Growth**.
   - Promote a strong local economy by fostering the growth and expansion of a diversified business community.
   - Support businesses that create a wide range of jobs for Rio Vista's resident workforce.
   - Make forward-thinking investments that position Rio Vista to respond successfully to an evolving economy.
7. **Promote Fiscal Strength**.
   - Plan land uses at the appropriate scale and intensity, and location to provide the right balance of revenues and costs to allow the City to deliver the services expected by the community.
   - Manage fiscal resources in a responsible, efficient, and effective manner.
8. **Promote a Healthy Community**.
   - Create a community that has options for residents to live a healthy lifestyle and provides access to health care services.

3.3 PROJECT CHARACTERISTICS

"Project," as defined by the CEQA Guidelines, means:

> ... the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment, and that is any of the following: (1)…enactment and amendment of zoning ordinances, and the adoption and amendment of local General Plans or elements thereof pursuant to Government Code Sections 65100–65700. (Title 14 California Code of Regulations Section 15378[a]).

3.2.1 Description of the Project

The project is an update to the City's General Plan. The General Plan is a State-required land use planning document that provides guidance to decision makers regarding the allocation of resources and the future physical form and character of development in the city. It is the City's official and overarching policy statement regarding the location, extent, and types of development needed to achieve the community's physical, economic, social, and environmental goals. Although the General Plan is composed of individual sections, or "elements," that individually address a specific area of concern, the General Plan embodies a comprehensive and integrated planning approach for the jurisdiction. This section of the Draft EIR summarizes the proposed General Plan Update's components. More information on the General Plan Update is available on the City's website: https://riovista2045.com/.

3.2.2 Proposed General Plan

The proposed General Plan Update will provide the long-term planning framework to guide the growth of the City over the 20-year planning horizon. The proposed project is a comprehensive update of the current General Plan to conform with new State laws related to community health, environmental justice, climate adaptation, resiliency, and mobility, and to bring long-term growth and fiscal projections into alignment with current economic conditions and State mandates.

3.2.2.1 PROPOSED GENERAL PLAN ELEMENTS

The proposed General Plan Update includes an Introduction chapter and eight updated elements. The Land Use Element and Community Character Element of the 2001 General Plan are combined into one element. The optional Public Facilities and Services Element and Economic Development Element are retained. The City's Housing Element was adopted by the City Council and approved by the State in September 2023. Environmental Justice is addressed within the various elements of the proposed General

Plan but is not addressed as a stand-alone element. The proposed General Plan is organized into the following chapters and elements:

- Chapter 1: Introduction
- Chapter 2: Land Use and Community Character
- Chapter 3: Mobility and Circulation
- Chapter 4: Economic Development
- Chapter 5: Housing
- Chapter 6: Parks and Recreation
- Chapter 7: Open Space and Resource Conservation
- Chapter 8: Public Facilities and Services
- Chapter 9: Safety
- Chapter 10: Noise

3.2.3 General Plan Revisions

3.2.3.1 LAND USE AND COMMUNITY CHARACTER ELEMENT

Consolidated from the two elements under the current General Plan, this element addresses the physical form of the city. More specifically, this element establishes land use categories, maps the land uses of the City, and provides development standards, including building intensity and density. This element also seeks to protect and enhance the character of the community through guidance on the form of the built environment.

The Land Use Element provides the foundation for all other elements in the General Plan. The Land Use Element provides a framework to guide future land use decisions and development in Rio Vista, while also enhancing community character and improving the city's look and feel.

A key component of the element is the General Plan Land Use Diagram, which, along with the policies and programs in the element, determine the location, intensity, design, and quality of new development and guide the preservation of natural resources that are key to Rio Vista's identity. The Land Use Element is revised to manage development in a way that supports the community's vision for the future of Rio Vista.

Land Use Map Changes

The 2045 General Plan Update would amend the General Plan land use diagram, shown on Figure 3-1, *Existing Land Use Diagram*. The goals, policies, and implementation measures in the Land Use Element provide additional direction on how the various land use designations should be developed to contribute to the overall character and vision for Rio Vista. The land use diagram changes would occur throughout the city. The 2045 General Plan would redesignate a total of 773 acres. Figure 3-2 shows the proposed land use designations in the city. The proposed General Plan also includes changes to the titles of some of the land use designations. Table 3-1 and Table 3-2 show the summary of proposed and existing land use designations and acreages, respectively.

Table 3-1 Proposed General Plan 2045 and Land Use Designation Acres

Land Use	Acres
Downtown	29
South Waterfront	44
North Waterfront	77
Neighborhood Mixed-Use	71
Highway Commercial	50
Industrial/Employment – General	90
Industrial/Employment – Limited	222
Industrial/Employment – Warehouse Service	60
Medium Density Residential	50
Neighborhood Residential	1,943
Residential Estate	156
Multifamily Residential	35
Parks and Recreation	68
Open Space/Natural Resources	1,611
Public/Quasi-Public	550
Urban Reserve	1,824
Total	**6,880**

Table 3-2 Existing General Plan 2020 and Land Use Designation Acres

Land Use	Acres
Downtown/Waterfront	50
Marina	15
Neighborhood Service/Mixed-Use	43
Highway Commercial	32
Industrial/Employment – General	312
Industrial/Employment – Limited	113
Industrial/Employment – Warehouse Service	78
Historic Residential	63
Neighborhood Residential	2,093
Residential Estate	154
Parks and Recreation	15
Agriculture/Open Space	1,803
Army Base Reuse Area	27
Airport Transportation	256
Study Area	76
County Land (Not Part of 2001 General Plan) Area	1,750
Total	**6,880**

Table 3-3, *Proposed General Plan Buildout*, illustrates the buildout projections for the City of Rio Vista resulting from the General Plan Update. Note that these projections are informed by historic development trends, existing land uses in the city, and land use revisions proposed under the Rio Vista 2045 General Plan Update. Additionally, these projections assume relatively robust development rates and actual development may be less than described.

Table 3-3 Proposed General Plan Buildout

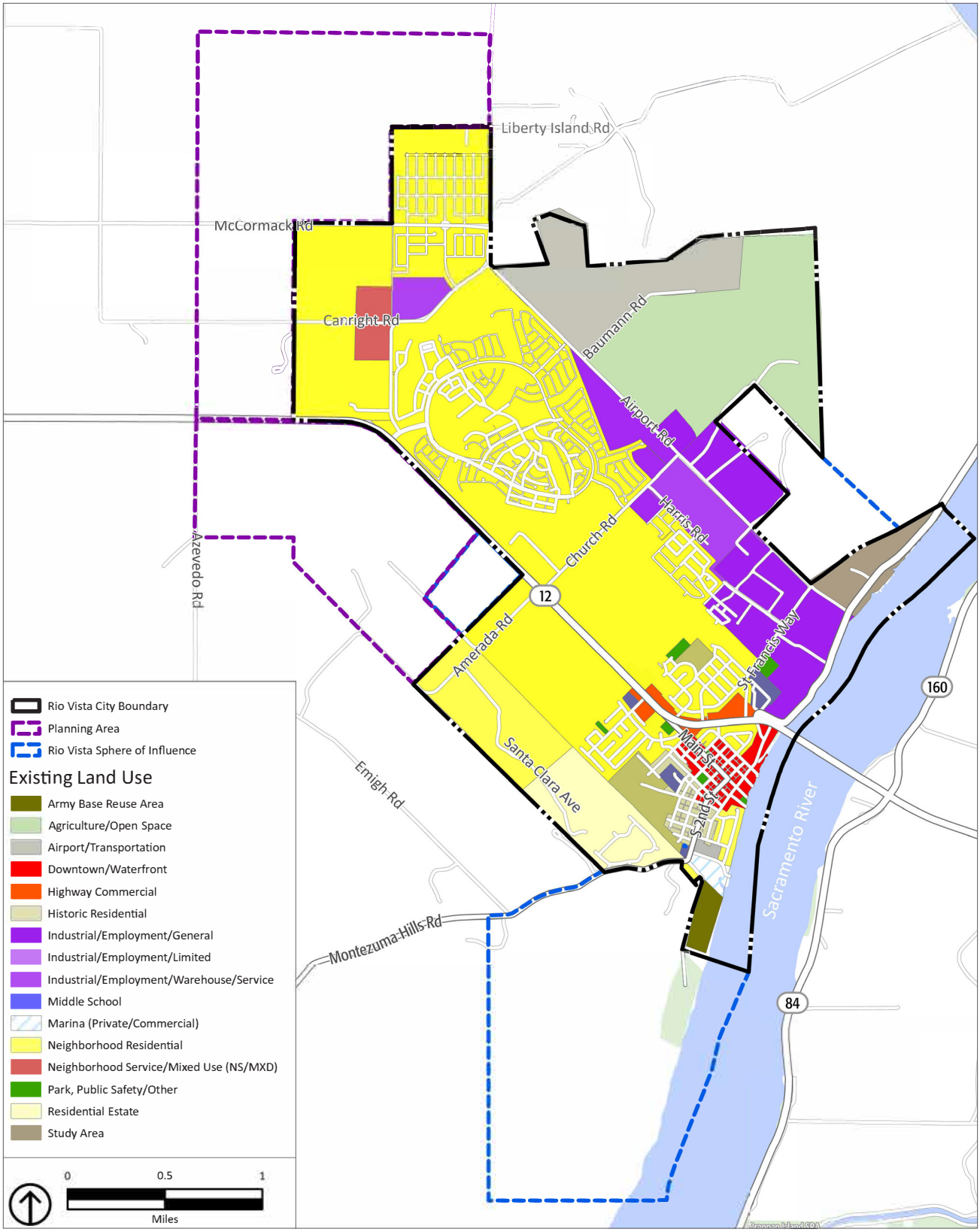
	Existing	Proposed General Plan	Net Change	Percentage Difference (%)
Housing Units	5,247	7,714 [1]	2,467	47%
Population	10,553	16,722 [2]	6,169	58%
Employment	2,437	3,842 [3]	1,405	58%

Source: City of Rio Vista 2024.

1 Based on a mix of housing types (90% single-family and 10% multifamily) and densities consistent with past development (6 single-family dwellings per acre and 20 multifamily dwellings per acre), it is anticipated the following residential development will be required to accommodate the 6,169 anticipated new residents of Rio Vista:
- Single-Family: 1,850 new dwellings situated on 308 acres of land.
- Multifamily: 617 new dwellings situated on 31 acres of land.

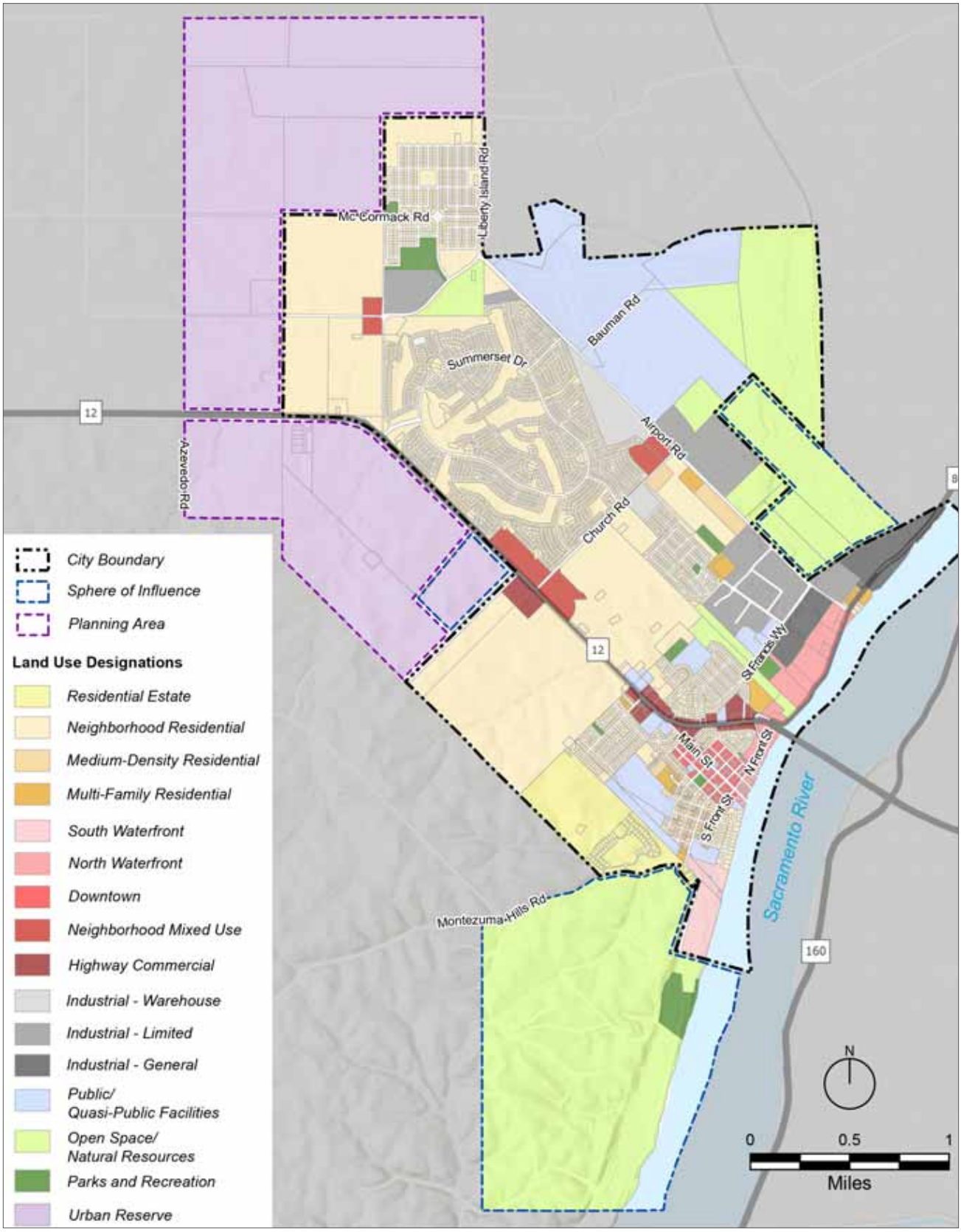
2 Based on a 2% annual growth rate, Rio Vista's population in year 2045 will be 16,722 persons.

3 Based on factors of the increased number of residents, a transition to web-based work that provides employees greater opportunities for remote work, and an increasing regional shortage of sites available for light industrial development, these projections assume a 2% annual growth rate for employment in the city through year 2045.



Source: Solano County 2024, PlaceWorks 2024.

Figure 3-1
Existing Land Use Diagram



Source: Solano County 2022, US Census Bureau 2022, Interwest 2023, ESRI.

Figure 3-2
Proposed Land Use in Rio Vista

Based on a mix of job types (75 percent commercial and 25 percent industrial) and jobs per acre consistent with local and regional trends (12 employees per acre for commercial and 6.5 jobs per acre for industrial), it is anticipated the following development will be required to accommodate employment growth through 2045:

- Commercial: 1,054 new jobs on 88 acres of land.
- Industrial: 351 new jobs on 54 acres of land.

3.2.3.2 MOBILITY AND CIRCULATION ELEMENT

The Mobility and Circulation Element describes the City's existing transportation network and the network required to serve the community through 2045. The element identifies improvements for motorized, pedestrian, and bicycle circulation; and the goals, policies, and implementation programs related to these circulation improvements. The element includes policy additions and revisions, as well as updated mapping for road classifications, and active transportation facilities. The element also addresses truck routes consistent with requirements of the recently adopted Assembly Bill (AB) 98.

3.2.3.3 ECONOMIC DEVELOPMENT

The Economic Development Element describes goals, policies, and implementation programs to support a thriving business environment, job growth and retention, and community revitalization. The element includes policy additions and revisions, as well as updated mapping for vacant and underutilized areas.

3.2.3.4 HOUSING ELEMENT

The Housing Element is a standalone document. State law requires that this element be revised every eight years. The 2023–2031 Housing Element was adopted by the City Council and approved by the State in September 2023. This element will be integrated into the General Plan 2045; however, it will not be amended or changed as part of the proposed project.

The Housing Element analyzes housing needs in the city across all income groups and discusses the actions necessary to meet those needs. These actions include an inventory and analysis of adequate housing sites and goals; analysis of potential constraints; and goals, policies, and programs related to the preservation and production of housing.

3.2.3.5 PARKS AND RECREATION ELEMENT

The Parks and Recreation Element provides an inventory of existing parks and community facilities that serve the recreational needs of the community and presents goals, policies, and programs related to existing facilities and facilities needed to serve the community through 2045. The element includes policy additions and revisions, as well as updated mapping for existing and approved park and recreation facilities, and a proposed trail system.

3.2.3.6 OPEN SPACE AND RESOURCE CONSERVATION ELEMENT

The Open Space and Resource Conservation Element describes resources that contribute to the general health of and quality of life in Rio Vista. The element addresses natural resources such as water, air, wildlife, and farmland, as well as historic and cultural resources. The element includes policy additions and revisions, as well as updated mapping for wetlands projects.

3.2.3.7 PUBLIC FACILITIES AND SERVICES ELEMENT

The Public Facilities and Services Element describes existing conditions related to infrastructure, utilities, municipal operations, emergency services, and educational facilities. It establishes how the City will maintain public facilities and public services to meet future demands. The Public Facilities and Services Element will provide guidance on the maintenance and planning for public facilities in the city, such as the fire station and library. It also addresses required infrastructure, including sewer, water, storm drainage, and communications. The element includes policy additions and revisions, as well as updated mapping for public facilities.

3.2.3.8 SAFETY ELEMENT

The Safety Element defines a comprehensive strategy to reduce the short-term and long-term potential for harm from various threats to community health and safety, including seismic, geologic, flood, and wildfire hazards. This element also addresses climate change adaptation and resiliency. The element includes policy additions and revisions, as well as updated mapping for potential evacuation routes, evacuation-constrained residential areas, flood-hazard areas, sea level rise inundation, dam inundation areas, fault lines, liquefaction areas, and landslides susceptibility areas.

3.2.3.9 NOISE ELEMENT

The Noise Element describes the Rio Vista noise environment and the common noise generators in the community. This section also projects noise levels in the year 2045 and provides strategies for minimizing excessive noise levels in the community. The element includes policy additions and revisions, as well as updated mapping for existing noise levels, projected noise levels, and airport noise contours.

3.4 INTENDED USE OF THE EIR AND PROPOSED PROJECT

This EIR is intended to review potential environmental impacts associated with the adoption and implementation of the proposed General Plan, and determine corresponding mitigation measures, as necessary. This EIR is a program-level EIR and does not evaluate the impacts of specific, individual developments that may be allowed under the proposed General Plan. Each specific future project will require separate environmental review, as required by CEQA, to secure the necessary discretionary development permits. Therefore, while subsequent environmental review may be tiered off this EIR, this EIR is not intended to address impacts of individual projects. Subsequent projects will be reviewed by the City for consistency with the General Plan and this EIR, and subsequent project-level environmental review will be conducted as required by CEQA. Projects successive to this EIR include, but are not limited to, the following:

- Approval and funding of major public projects and capital improvements.
- Periodic update of the Municipal Code.
- Periodic update of master water, sewer, and storm drainage plans.
- Issuance of permits and other approvals necessary for implementation of the proposed General Plan.
- Future Specific Plan and Planned Unit Development approvals.
- Property rezoning consistent with the proposed General Plan.
- Development plan approvals, such as tentative maps, variances, conditional-use permits, and other land use permits.
- Permit issuances and other approvals necessary for public and private development projects.
- Development agreement processes and approvals.
- Updates to the Municipal Code to implement the General Plan.

This program-level EIR may be used to eliminate or reduce the scope of future environmental review for individual projects that are consistent with the General Plan, pursuant to CEQA Guidelines Section 15183 and other streamlining provisions authorized by CEQA.

3.5 REFERENCES

Rio Vista, City of. 2024. *2045 General Plan Update*. Preliminary Final Draft. https://riovista2045.com/

4. Environmental Setting

4.1 INTRODUCTION

This chapter provides a "description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published, ... from both a local and a regional perspective" (CEQA Guidelines Section 15125[a]), pursuant to provisions of the California Environmental Quality Act (CEQA) and the CEQA Guidelines. The environmental setting provides the baseline physical conditions from which the lead agency will determine the significance of environmental impacts resulting from the proposed project.

4.2 REGIONAL ENVIRONMENTAL SETTING

4.2.1 Regional Location

The City of Rio Vista is an incorporated city in Solano County and is 48 miles southwest of Sacramento and 65 miles northeast of San Francisco. Rio Vista is adjacent to the west side of the Sacramento River, about 22 miles east of the City of Fairfield. Rio Vista is also in the heart of the Sacramento River Delta and the city is referred to as, "the Gateway to the Delta." Regional access to the city is provided by State Route 12, which bisects the southwest portion of the city.

4.2.2 Regional Planning Considerations

4.2.2.1 REGIONAL TRANSPORTATION PLAN/SUSTAINABLE COMMUNITIES STRATEGY

The Association of Bay Area Governments (ABAG) is a regional planning agency and a forum for addressing regional issues concerning transportation, the economy, community development, and the environment for the greater San Francisco Bay Area. It is also the regional clearinghouse for projects requiring environmental documentation under federal and State law. In this role, ABAG reviews proposed development and infrastructure projects to analyze their impact on regional planning programs. ABAG and the Metropolitan Transportation Commission (MTC) are jointly responsible for regional planning of the 9-county, 101-city, San Francisco Bay Area. These agencies are responsible for developing the long-range regional transportation plan, known as the

Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). ABAG/MTC adopted its RTP/SCS, known as Plan Bay Area 2050, in October 2021.

Plan Bay Area 2050 integrates the components of the RTP/SCS and the Regional Housing Needs Allocation (RHNA) into a single document. The plan connects the elements of housing, the economy, transportation, and the environment through 35 strategies that will make the Bay Area more equitable for all residents and more resilient in the face of unexpected challenges. In the short-term, the plan's Implementation Plan identifies more than 80 specific actions for MTC, ABAG, and partner organizations to take over the next five years. The plan focuses on five major principles to drive the overarching planning process, including: affordability, connectivity, diversity, health, and vibrancy. Using these principles, the plan developed three sets of future conditions by which to analyze the success of its strategies. These scenarios vary in terms of economic vibrancy, population growth rates, severity of natural hazards, and adoption rates for telecommuting, among other forces. The plan also emphasizes the role of advancing equity through investment in residents of systemically underserved communities in the region.

Plan Bay Area 2050 does not require that local General Plans, Specific Plans, or zoning be consistent with its policies; instead, it provides incentives to governments and developers for consistency. The consistency of the proposed General Plan Update (i.e., the proposed project) with the applicable Plan Bay Area 2050 policies is analyzed in detail in Section 5.11, *Land Use and Planning*.

4.2.2.2 YOLO-SOLANO AIR QUALITY MANAGEMENT DISTRICT

Yolo-Solano Air Quality Management District (YSAQMD) is the regional agency with jurisdiction over all of Yolo County and the northeast portion of Solano County, including Rio Vista. YSAQMD is responsible for attaining and maintaining air quality in the region within federal and State air quality standards. Specifically, YSAQMD has the responsibility to monitor ambient air pollutant levels throughout the region and develop and implement strategies to attain the applicable federal and State standards. YSAQMD has permit authority over most types of stationary emission sources and can require stationary sources to obtain permits, impose emission limits, set fuel or material specifications, or establish operational limits to reduce air emissions (YSAQMD 2023). The proposed project's consistency with the applicable policies is discussed in Section 5.3, *Air Quality*.

4.2.2.3 GREENHOUSE GAS EMISSIONS REDUCTION LEGISLATION

Current State guidance and goals for reductions in greenhouse gas (GHG) emissions are embodied in several State regulations. Executive Order S-03-05, signed June 1, 2005, set the following GHG reduction goals for the State:

- 2000 levels by 2010
- 1990 levels by 2020
- 80 percent below 1990 levels by 2050

Assembly Bill (AB) 32, the Global Warming Solutions Act (2006), was passed by the State legislature on August 31, 2006, to place the state on a course toward reducing its contribution of GHG emissions. AB 32 established a legislative target for the year 2020 goal outlined in Executive Order S-03-05. The California Air Resources Board (CARB) prepared its first Scoping Plan in 2008 that outlined the State's plan for achieving the 2020 targets of AB 32.

In 2008, Senate Bill (SB) 375 was adopted to connect passenger-vehicle GHG emissions reduction targets for the transportation sector to local land use decisions that affect travel behavior. Its intent is to reduce GHG emissions from light-duty trucks and automobiles by aligning regional long-range transportation plans, investments, and housing allocations to local land use planning to reduce vehicle miles traveled (VMT) and vehicle trips.

In September 2016, Governor Brown signed SB 32, making the Executive Order B-15-30 goal for year 2030 of a 40 percent reduction below 1990 levels by 2030 into a statewide-mandated legislative target. CARB issued an update to its Scoping Plan in 2017, with programs for meeting the SB 32 reduction target.

Executive Order B-55-18 sets a goal for the state to achieve carbon neutrality no later than 2045 and to achieve and maintain net negative emissions thereafter. SB 100 would help the state reach the goal set by Executive Order B-55-18 by requiring that the state's electricity suppliers have a source mix that consists of at least 60 percent renewable/zero carbon sources in 2030 and 100 renewable/zero carbon sources in 2045.

4.2.2.4 SENATE BILL 743

On September 27, 2013, SB 743 was signed into law and started a process that has fundamentally changed transportation impact analysis for CEQA compliance. With the adoption of SB 375, the State signaled its commitment to encouraging land use and transportation planning decisions and investments that reduce VMT and contribute to the

reduction of GHG emissions, as required by the Global Warming Solutions Act of 2006 (AB 32).

SB 743 generally eliminates auto delay, level of service, and other similar measures of vehicular capacity or traffic congestion as the basis for determining significant impacts under CEQA. Pursuant to the CEQA Guidelines, the new criteria "shall promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses" (Public Resources Code Section 21099[b][1]).

Pursuant to SB 743, the Natural Resources Agency adopted revisions to the CEQA Guidelines to implement SB 743 on December 28, 2018. Under the new guidelines, VMT-related metric(s) that evaluate the significance of transportation-related impacts under CEQA for development projects, land use plans, and transportation infrastructure projects, were required beginning July 1, 2020. The legislation does not preclude the application of local General Plan policies, zoning codes, conditions of approval, or any other planning requirements for evaluation of level of service, but these metrics can no longer be the basis for determining transportation impacts under CEQA.

4.2.2.5 WATER QUALITY CONTROL PLANS (BASIN PLANS)

The city is within the water quality control jurisdiction of the Central Valley Regional Water Quality Control Board (RWQCB). Each regional board in the state is required to adopt a water quality control plan, or basin plan, that recognizes and reflects the regional differences in existing water quality, the beneficial uses of the region's ground and surface water, and local water quality conditions and problems. The Central Valley RWQCB prepared the Water Quality Control Plan for the Sacramento and San Joaquin River Basins and is tasked with implementing the adopted Basin Plan through planning, permitting, and enforcement of established water quality objectives. In accordance with State Policy for Water Quality Control, the region employs a range of beneficial use designations for surface waters (including creeks, streams, lakes, and reservoirs), groundwaters, marshes, and mudflats that serve as the basis for establishing water quality objectives, discharge conditions, and prohibitions. The Basin Plans identify existing and potential beneficial uses supported by the key surface water drainages throughout their respective jurisdictional planning areas.

4.3 LOCAL ENVIRONMENTAL SETTING

4.3.1 Natural Setting

The City of Rio Vista is within the greater San Francisco Bay Area, Sacramento River–San Joaquin River Delta (Delta), and Central Valley. The city has an average elevation of 20 feet, and the topography within two miles of Rio Vista contains only modest variations in elevation, with a maximum elevation change of 164 feet. The Montezuma Hills, a prominent geographical feature, lie to the west and south of Rio Vista. These distinctive landforms create the hilly topography stretching westward from downtown Rio Vista and State Route 12 (SR-12). Further south, the hilly terrain becomes increasingly prominent, particularly in the areas beyond the existing neighborhoods and the high school. These variations in elevation contribute to Rio Vista's unique geographical character. The Montezuma Hills stand as the most significant topographic feature shaping Rio Vista's distinctive landscape.

4.3.1.1 WATERSHED

Rio Vista is in the Sacramento Valley subregion of the Sacramento River Watershed. The Sacramento Valley subregion encompasses approximately 5,500 square miles. The Sacramento Valley represents that portion of the Sacramento River Hydrologic Region starting at Shasta Lake and Redding in the north and extending south to Sacramento and the Delta.

4.3.1.2 VEGETATION

Excluding the city’s urbanized lands, lands in the city and its Planning Area are predominantly agricultural, managed, or natural-state lands. Small amounts of herbaceous upland and some open water habitats may be found, as well as woody non-native vegetation. Sensitive habitat types found in the nearby Delta lands include marsh, riparian, and naturally occurring vernal pools. Sensitive habitat types found in the nearby Delta lands include marsh, riparian, and naturally occurring vernal pools.

4.3.1.3 RIPARIAN HABITAT

Riparian habitats are characterized by shrubby or wooded plant communities along the fringes of ponds and streams. Ecologically, riparian habitats are biologically very rich, supporting more species than most other habitat types due to the presence of water and a productive, nutrient-rich environment. Within the Rio Vista city limits and immediate surroundings, riparian communities are quite limited. The two best examples of riparian habitat are found north of Airport Road on California Department of Water Resources land

where riparian plant communities have developed over a period of 30 years following land disturbance related to sand and aggregate mining, and opposite the Delta Marina along Montezuma Hills Road, adjacent to the Vineyard Bluffs development.

4.3.1.4 HERBACEOUS UPLAND

Annual grassland is found primarily on the broad, gentle interior slopes of the perimeter levees in the eastern portion of the city and within set-aside open space lands, such as the northern portion of the Trilogy development. Typical annual grassland species include canary grass, ripgut brome, mustard, and burr-clover. Annual grasslands are also found along levees and on agricultural lands that are not cultivated for an extended period. These annual grasslands are typically dominated by non-native species, but with appropriate management, native plant species can be encouraged.

4.3.1.5 VERNAL POOL AND VERNAL SWALE

Vernal pools are seasonally flooded depressions that pond water during the rainy season. They lack a drainage outlet and due to slow-draining clay soils, these depressions retain water for an extended period. This combination of persistent water and soil is conducive to native species and vernal pools tend to have high species diversity and support many rare plants and animals. Vernal pools in Rio Vista's city limits and Planning Area are limited and such resources would likely only be affected by the city through future land annexations.

4.3.1.6 WILDLIFE

The Sacramento-San Joaquin Delta supports a diversity of plant, bird, mammal, fish, and aquatic species. Rio Vista is fortunate to be located adjacent to this rich biological diversity. Within the City of Rio Vista, the biological diversity is much more limited. Migratory and wintering wildlife include waterfowl, shorebirds, and raptors that congregate primarily on agricultural lands northeast of Airport Road. Concentrations of starlings, egrets, snow geese, tundra swans, white-fronted geese, pintails, mallards, and blue heron are among the more visible species that are attracted to the Delta. Large bodies of grain harvest spill and winter wheat provide foraging habitat, and seasonally flooded fields provide both food and roosting habitat. The Delta is also home to an abundance of wintering raptors, including red-tailed hawk, ferruginous hawk, rough-legged hawk, white-tailed kite, American kestrel, sharp-shinned hawk, Cooper's hawk, osprey, and peregrine falcon. During winter, raptors forage opportunistically throughout the Delta on rodents that become accessible because of flooded fields, harvest, cultivation, and other agricultural activities.

4.3.1.7 SPECIAL-STATUS SPECIES

The Rio Vista Planning Area and the broader Delta region include valuable habitat that supports hundreds of wildlife species, including numerous species protected by State and federal regulations. Within the Planning Area, much of the value of this habitat has been reduced by urban development or past and ongoing disturbance from grazing and agricultural uses. The California Department of Fish and Wildlife's Natural Diversity Database indicates the following:

- Two special-status plants have been identified in the Planning Area: San Joaquin spearscale and Suisun Marsh aster.
- Four special-status aquatic species have been identified in the Planning Area: Green sturgeon, steelhead, Delta smelt, and longfin smelt.
- Three special-status avian have been identified in the Planning Area: Swainson's hawk, American peregrine falcon, and song sparrow "Modesto."

4.3.1.8 SCENIC RESOURCES

Scenic resources are varied and abundant in and around Rio Vista. Those approaching town from the west will pass through the rolling Montezuma Hills, with undulating topography that creates spectacular vistas across the Delta to Mount Diablo. On the northern edge of the city, the Delta marshlands provide yet another viewing opportunity to the Delta Island network. Travelers from the east enter the city via the Rio Vista Bridge (also known as Helen Madere Bridge), with panoramic views of the city's waterfront, the Sacramento River, Mount Diablo, and the Delta Marina. Boaters can view the city from a unique water perspective that showcases the city and the Delta Islands levee system. Primary viewing opportunities in Rio Vista are intermittent, with vantage points along SR 12 from River Road (SR 84), the City's Promenade ("Beach to Bridge") trail, the Delta Marina, the docks at City Hall, and properties in the South Waterfront, including Sandy Beach Regional Park. Rio Vista's location, adjacent to the Montezuma Hills and the Sacramento River, is a unique feature of the city's character and speaks to its agricultural heritage of managed resources. The Montezuma Hills offer outstanding views of the existing city, the Sacramento River, sustainable energy generation from the windmills, and the regional agricultural landscape. The hilltops and ridgelines offer the potential for views to a variety of urban and natural features and the low-lying areas include drainage corridors (intermittent streams), wetlands and floodplains, absorb stormwater runoff, and help to alleviate or reduce flooding.

The agricultural lands surrounding Rio Vista contribute to its rural community setting. This connection to its agricultural heritage and the landscape of rolling hills is highly valued by Rio Vista residents. Because most agricultural lands in the Planning Area are outside the city limits and under the jurisdiction of Solano County, Rio Vista will have limited influence on and control over the agricultural lands and hillsides that surround the city. Development in areas near these key scenic areas should be sensitive to the essential natural features of the area, including ecological systems, vegetative communities, mature trees, watercourses, crucial hilltops and landforms, and areas adjacent to the Sacramento River waterfront.

4.3.2 Land Use and Housing

4.3.2.1 EXISTING USES

The majority of Rio Vista land use is residential and commercial, with most of the commercial uses close to the downtown core. The commercial land includes city hall, the library, public safety offices, the post office, and public and private offices. Industrial uses in or near the Rio Business Park, with large industrial development for manufacturing, storage, and service companies located between the Business Park and the Sacramento River. Agricultural, recreational, and open space lands make up the area just outside the city limits and within the unincorporated areas of Solano County (Rio Vista 2001).

4.3.3 Farmland, Mineral and Natural Gas Resources

Farming and natural gas extraction have both played significant roles in Rio Vista's economy in the past. Today, natural gas production has diminished as underground gas reserves have become depleted. While farming remains a significant and important activity regionally, farming within Rio Vista and its Planning Area is focused primarily on grazing and dry pasture, with the primary economic impacts of farming in the city being related to sales of farming equipment and supplies and the transport of agricultural products.

4.3.3.1 FARMLAND

There is limited commercial agricultural activities inside the city limits and in the Sphere of Influence of Rio Vista, with the exception of land in the Sphere of Influence south of Rio Vista along Beach Drive and the Sacramento River, in the city limits between McCormack Road and SR 12, and from west of SR 12 to the sphere's boundary. Active commercial agriculture inside the city limits is mostly limited to grazing activities on City-owned property adjacent to the intersection of Airport Road and Church Road and

adjacent to the City's Northwest Wastewater Treatment Plant. Grain cultivation also occurs along SR 12. The Planning Area contains large tracts of land in active agricultural use generally southwest of Rio Vista between the city and the Montezuma Hills. Agricultural lands in the Sphere of Influence and adjacent to the Montezuma Hills are primarily grazing lands and unirrigated pasture. Much of the agricultural land in the Sphere of Influence and the Planning Area have natural gas infrastructure and wind turbines that can be compatible with dry-land grain cultivation, pasture, and grazing operations.

4.3.3.2 MINERAL RESOURCES

The alluvial depositions of sand and gravel along the historic course of the Sacramento River represent an important resource. Historically, mining of sand and aggregate has occurred on lands north of Airport Road and on Decker Island south of Rio Vista in the Sacramento River. Property owned by the California Department of Water Resources has been mined since the 1980s and mining operations continue to the north of the Rio Vista city limits. Areas close to Airport Road and south of the City's Northwest Wastewater Treatment Plant were mined in the early 2000s, and since that time riparian vegetation has become established. This area now approximates young riparian forest and demonstrates that after completion of mining operations, land can be restored for use in various ways, including the establishment of naturalized landscapes. The City will consult with the Department of Water Resources to determine the Department's ultimate plans for the use of this land and, if feasible, the City will encourage public access for bicycle and pedestrian use to these naturalized areas.

4.3.3.3 NATURAL GAS WELL RESERVE SITES

Natural gas well reserve sites are found both within the city and on surrounding unincorporated lands. The presence of natural gas resources in areas planned for or developed as urban uses has created challenges in Rio Vista. In some residential developments, existing natural gas wells remain active, and homes have been developed immediately adjacent to the well sites. The City recognizes both the importance of energy production and the rights of parties owning wells and underground resource rights to continue operations to extract natural gas, but the interface between residential uses and natural gas facilities can result in both community character and safety issues.

4.3.4 Historic Resources

The Delta possesses a unique blend of historic and archaeological resources. Until the Gold Rush of the 1840s and 1850s, the Delta was a network of waterways and natural islands of sand and peat. The levee system that evolved between the 1850s and the present represents a unique human-made landscape that contributes to the rich historic heritage of the Delta as a whole and to Rio Vista as a Delta community. The settlement of Rio Vista was northeast of the current city and was relocated to its present location on higher ground following a flood in 1862. The Rio Vista Museum on Front Street houses most of the documentation of Rio Vista's history. While the community is rich in its history—with numerous homes and commercial buildings dating back to the mid-nineteenth century and the settlement of Chinese immigrants—there is no historic district in Rio Vista, nor do any formal programs exist outside the General Plan to promote or preserve its historic structures or sites.

4.3.5 Cultural and Tribal Resources

The Sacramento River and associated Delta provided a resource-rich environment to the indigenous peoples that occupied the region prior to European settlement. Artifacts of these peoples are considered significant cultural resources and must be handled appropriately when discovered. Due to the high level of disturbance in Rio Vista, first for Delta reclamation and later for agricultural operations, Rio Vista has had a generally low-level likelihood of locating indigenous cultural resources.

Rio Vista is in the western portion of the territory occupied by the Eastern Miwok; however, it is also approximately eight miles east of the territory occupied by the Patwin. Ethnographically, the City and Sphere of Influence is in the western portion of the territory occupied by the Utian-speaking Eastern Miwok. The Eastern Miwok consists of three groups: the Plains Miwok, who occupied the area between Freeport and Rio Vista along the Sacramento River, and extends eastward along the Mokelumne and Cosumnes rivers; the Bay Miwok, who occupied the Sacramento-San Joaquin Delta area west to the eastern portion of Contra Costa County; and the Sierra Miwok, who occupied the foothill region south of the Cosumnes River to the upper drainages of the Chowchilla and Merced Rivers. The City and Sphere of Influence are on the margin of the Plains Miwok area, which includes tribelets along the Sacramento, Cosumnes, and Mokelumne Rivers.

4.3.6 Public Services and Utilities

4.3.6.1 FIRE PROTECTION SERVICES

The Rio Vista Fire Department (RVFD) provides fire protection and emergency medical response services to the community, and to those who visit or travel through the city and the community. RVFD also provides service to the residents and visitors of the Delta Fire Protection District in Sacramento County under a long-standing contract. In the event of a major disaster, the RVFD is the acting Emergency Operations Command (EOC) and coordinates response with the Solano County Office of Emergency Services (Rio Vista 2023a). The Montezuma Fire Protection District Station 51 is in the City of Rio Vista and the District provides fire protection services to rural lands surrounding the city and is part of the Solano County Mutual Aid Matrix.

RVFD relies on various agreements with other fire agencies, including a Fire Joint Operations Agreement with the City of Isleton, the Solano County Local Mutual Aid Agreement, and the State Mutual Master Mutual Aid for response to events that exceed County resources.

4.3.6.2 POLICE SERVICES

The Rio Vista Police Department (RVPD) serves the City of Rio Vista and is staffed through a contract with the Solano County Sheriff's Office. Police services are provided from the Police Station at 50 Poppy House Road. This facility is City owned and located on City property. RVPD's vehicle fleet is owned by the City.

The Sheriff's Office provides additional as-needed services, such as Homeless Resources, Crisis Negotiations, SWAT, Auto Theft investigators, and major crimes detectives.

4.3.6.3 SCHOOL SERVICES

Rio Vista includes one elementary school, one middle school, and one high school, all of which are operated by the River Delta Unified School District (RDUSD). Although RDUSD is a tri-county district, it is managed by and is part of the Sacramento County Office of Education in Sacramento, and the district has an enrollment of over 1,800 students (RDUSD 2023).

4.3.6.4 PARKS AND RECREATION

The City of Rio Vista has 10 parks consisting of Boat Launch, Bruning (City) Park, Crescent Park, Drouin Park, Egbert Field, Homecoming Park, Liberty Neighborhood Park, Memorial (Buena Vista) Park, Promenade Waterfront Park, Sierra Park, and Val de Flores Park (Rio Vista 2023b).

4.3.6.5 WASTEWATER TREATMENT

As of 2024, the City operated two wastewater treatment plants: the Beach Treatment Plant immediately south of the city, and the Northwest Treatment Plant adjacent to the Rio Vista Airport. At that time the Beach Treatment Plant processed 0.46 million gallons per day (MGD) of wastewater, and the Northwest Treatment Plant processed 0.27 MGD of wastewater. The sewer system consists of about 54 miles of gravity sewers, 7.2 miles of force main, 1,206 manholes, and 10 pump stations (Rio Vista 2022).

As of 2024, the City was in the process of consolidating and directing all wastewater flows to the Northwest Treatment Plant. Decommissioning the Beach Treatment Plant and constructing improvements to direct all wastewater treatment to the Northwest Treatment Plant will be part of the consolidation. As part of the consolidation project, the City will install infrastructure to facilitate reclaimed water use as an alternative to discharging into the river.

4.3.6.6 WATER SUPPLY

The City's Public Works Department manages the contract(s) for the operation and maintenance of the City's water system as well as the master planning, construction management, and construction of new facilities. Despite bordering the Sacramento River, water service in Rio Vista is provided entirely from water wells within the city limits. Given the city's reliance on groundwater, the quality and reliability of the water supply is a high priority for the City. Fortunately, the city aquifer is currently adequate to supply current and near future demand.

The water for the City of Rio Vista comes from eight wells at various locations within the city. The water distribution system includes over 18 miles of pipe and 2 reservoir tanks, each with a capacity of 2 million gallons (Rio Vista 2023c). Each well receives treatment as needed, including chlorination. The City currently has two 2 million water tanks and a third 2-million-gallon tank will be needed for buildout under the General Plan Update. This third tank, along with a booster pump, is currently planned to be located at the City's corporation yard.

4.3.6.7 SOLID WASTE

Disposal of solid waste is a service managed by the City and provided by contracted vendors. Solid waste disposal has been subject to additional State-imposed requirements in recent years, including recently imposed requirements of SB 1383. The City's solid waste vendor must provide services consistent with State waste diversion requirements. As of 2022, the City contracted with Mount Diablo Resource and Recovery for solid waste disposal services. It is anticipated the City will periodically consider how best solid waste disposal services can be provided, including consideration of the most appropriate vendor, how State-mandated diversion guidelines will be met, and how residents and businesses of Rio Vista can best be served.

4.4 ASSUMPTIONS REGARDING CUMULATIVE IMPACTS

Section 15130 of the CEQA Guidelines states that cumulative impacts shall be discussed when a project's incremental effect is cumulatively considerable. It further states that this discussion shall reflect the level and severity of the impact and the likelihood of occurrence, but not in as great of detail as that necessary for the proposed project alone. Section 15355 of the CEQA Guidelines defines cumulative impacts to be "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." Cumulative impacts represent the change caused by the incremental impact of the proposed project when added to effects of past projects, other current projects, and probable future projects in the vicinity.

CEQA Guidelines Section 15130(b)(1) states that the information utilized in an analysis of cumulative impacts should come from one of two sources, either:

1) A list of past, present, and probable future projects producing related cumulative impacts, including, if necessary, those projects outside the control of the agency; or

2) A summary of projections contained in an adopted general plan or related planning document designed to evaluate regional or area-wide conditions.

The cumulative impacts analyses in this EIR use the second method, the summary of projections approach. The proposed project consists of the Rio Vista Proposed General Plan. Consistent with CEQA Guidelines Section 15130(b)(1)(B), this Draft EIR analyzes the environmental impacts of development in accordance with buildout of the proposed land use plan. As a result, this Draft EIR addresses the cumulative impacts of development in the City of Rio Vista and the region surrounding it, as appropriate. In most

cases, the potential for cumulative impacts is contiguous with the city boundaries. Potential cumulative impacts that have the potential for impacts beyond the city boundaries (e.g., traffic, air quality, noise) have been addressed through cumulative growth in the city and region. Regional growth outside Rio Vista is accounted for in traffic, air quality, and noise impacts through use of the Solano County Congestion Management Program, which is a model that uses regional growth projections to calculate future traffic volumes. The growth projections adopted by the City and surrounding area are used for the cumulative impact analyses of this Draft EIR. Refer to Chapter 5, *Environmental Analysis,* for a discussion of the cumulative impacts associated with development and growth in the city and region for each environmental resource topic. The following list summarizes the geographic scope of cumulative impacts by environmental topic.

- **Aesthetics:** Coterminous with the city boundary.
- **Agricultural and Forestry Resources:** Within Solano County.
- **Air Quality:** Based on the regional boundaries of the San Francisco Bay Area Air Basin.
- **Biological Resources:** Coterminous with the city boundary but considers habitat loss in the Northern California region based on the range of the protected species.
- **Cultural Resources and Tribal Cultural Resources:** Coterminous with the city boundary and surrounding region.
- **Energy:** Based on energy use within the Pacific Gas and Electric Company service area.
- **Geology, Soils, and Mineral Resources:** Within the city boundary.
- **Greenhouse Gas Emissions:** Worldwide impacts based on the emissions sectors in the Scoping Plan in California (boundary).
- **Hazards and Hazardous Materials:** Within the city boundaries.
- **Hydrology and Water Quality:** Hydrology and water quality impacts would be within the Sacramento River Watershed, and flood impacts would be within the city boundary.
- **Land Use and Planning:** Within Solano County.
- **Noise:** Within the city boundary.
- **Population and Housing:** Within ABAG's region.
- **Public Services and Recreation:** Within the service area boundaries of the RVFD, RVPD, RDUSD, and Rio Vista Library for public services and within the city's boundary for recreation.
- **Transportation:** Considers transportation improvements identified in the Solano travel demand model and regional growth projections identified by ABAG.

- **Utilities and Service Systems:** Water and wastewater services impacts would be within the service area of the City of Rio Vista; stormwater drainage impacts would be within the Sacramento River watershed; and solid waste impacts would be within the service area of the Rio Vista Sanitary Landfill.
- **Wildfire:** Coterminous with the city boundary and surrounding areas.

4.5 REFERENCES

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5. Environmental Analysis

Chapter 5 examines the environmental setting of the proposed project, analyzes its effects and the significance of its impacts, and recommends mitigation measures to reduce or avoid impacts. This chapter has a separate section for each environmental topic that was determined to need further study in the environmental impact report (EIR). This scope was determined in the Notice of Preparation (NOP), which was published on October 30, 2024 (see Appendix 2-1), and through public and agency comments received during the NOP comment period from October 30, 2024, to November 29, 2024 (see Appendix 2-1). Environmental issues and their corresponding EIR sections are below:

- Section 5.1 Aesthetics
- Section 5.2 Agriculture and Forestry Resources
- Section 5.3 Air Quailty
- Section 5.4 Biological Resources
- Section 5.5 Cultural and Tribal Cultural Resources
- Section 5.6 Energy
- Section 5.7 Geology, Soils, and Mineral Resources
- Section 5.8 Greenhouse Gas Emissions
- Section 5.9 Hazards and Hazardous Materials
- Section 5.10 Hydrology and Water Quality
- Section 5.11 Land Use and Planning
- Section 5.12 Noise
- Section 5.13 Population and Housing
- Section 5.14 Public Services and Recreation
- Section 5.15 Transportation
- Section 5.16 Utilities and Service Systems
- Section 5.17 Wildfire

EIR Sections 5.1 through 5.17 provide a detailed discussion of the environmental setting, impacts associated with the proposed project, and mitigation measures designed to reduce significant impacts where required and when feasible. The residual impacts following the implementation of any mitigation measure are also discussed.

5. Environmental Analysis

Organization of Environmental Analysis

To assist the reader with comparing information between environmental issues, each section is organized under nine major headings:

- Environmental Setting
- Thresholds of Significance
- Proposed General Plans Goals and Policies
- Environmental Impacts
- Cumulative Impacts
- Level of Significance Before Mitigation
- Mitigation Measures
- Level of Significance After Mitigation
- References

In addition, Chapter 1, *Executive Summary,* has a table that summarizes all impacts by environmental issue.

Terminology Used in this Draft EIR

The level of significance is identified for each impact in this Draft EIR. Although the criteria for determining significance are different for each topic area, the environmental analysis applies a uniform classification of the impacts based on definitions consistent with the California Environmental Quality Act (CEQA) and the CEQA Guidelines:

- **No impact.** The project would not change the environment.
- **Less than significant.** The project would not cause any substantial, adverse change in the environment.
- **Less than significant with mitigation incorporated.** The EIR includes mitigation measures that avoid substantial adverse impacts on the environment.
- **Significant and unavoidable.** The project would cause a substantial adverse effect on the environment, and while mitigation measures may still be applied, there are no feasible mitigation measures that would reduce the impact to a less-than-significant level.

5.1 AESTHETICS

This section of the Draft Environmental Impact Report (EIR) discusses the potential impacts to the visual character and scenic resources in the city from future development envisioned under the proposed project.

5.1.1 Environmental Setting

5.1.1.1 REGULATORY BACKGROUND

This section summarizes key State and local regulations and programs related to aesthetics in the City of Rio Vista. There are no federal regulations pertaining to aesthetics that apply to the proposed project.

State

Caltrans Scenic Highway Program

In 1963, California's Scenic Highway Program was created to preserve and protect the natural scenic beauty of California highways and adjacent corridors through special conservation treatment. The State laws governing this program are in the Streets and Highways Code, Sections 260 to 263, and the California Department of Transportation (Caltrans) oversees the program. Caltrans defines a scenic highway as any freeway, highway, road, or other public right-of-way that traverses an area of exceptional scenic quality. Suitability for designation as a State Scenic Highway is based on three criteria described in Caltrans' *Guidelines for Official Designation of Scenic Highways (2008)* (Caltrans 2022):

- **Vividness.** The extent to which the landscape is memorable. This is associated with the distinctiveness, diversity, and contrast of visual elements.
- **Intactness.** The integrity of visual order and the extent to which the natural landscape is free from visual intrusions (e.g., buildings, structures, equipment, grading).
- **Unity.** The extent to which development is sensitive to and visually harmonious with the natural landscape.

There are no State-designated highways in the City of Rio Vista. However, State Route (SR-) 160 is an eligible scenic highway outside of city limits along the Sacramento River (Caltrans 2022).

California Building Code

The State of California provides a minimum standard for building design through Title 24, Part 2, of the California Code of Regulations, commonly referred to as the California Building Code (CBC). The CBC is updated every three years. It is generally adopted on a jurisdiction-by-jurisdiction basis, subject to further modification based on local conditions. The City of Rio Vista adopted the 2022 Edition of the CBC under the City of Rio Vista Ordinance Number 003-2023 by repealing and replacing Chapters 15.04.030 and 15.4.080, *California Buildings Standards Code Adopted*, of the Rio Vista Municipal Code.

California Building Code: CALGreen

The California Building Standards Commission adopted the California Green Building Standards Code, also known as CALGreen. As part of the CBC, CALGreen is in Part 11 of Title 24. CALGreen establishes building standards aimed at enhancing the design and construction of buildings using building concepts that reduce negative impacts and increase positive environmental impacts by encouraging sustainable construction practices. Specifically, Section 5.106.8, *Light Pollution Reduction*, establishes backlight, uplight, and glare ratings to minimize the effects of light pollution for nonresidential development. The local building permit process enforces the mandatory provisions of CALGreen. The City of Rio Vista adopted the new CALGreen update under Chapter 15.04, *California Building Standards Code Adopted*, of the City Municipal Code.

Local

City of Rio Vista Municipal Code

Chapter 13.24, Grading, Erosion, and Sediment Control

Chapter 13.24 regulates grading on properties within city limits. This chapter sets forth rules and regulations to reduce negative effects resulting from construction activities. Furthermore, this chapter is intended to ensure that the intended use of a graded site within the city limits is consistent with the City's general plan, any specific plans adopted thereto, and all applicable City ordinances and regulations.

Title 17 – Zoning

Title 17 establishes the Zoning Districts in the City of Rio Vista. Each district outlines the minimum setback requirements, site and architectural approval, minimum building height, and other design requirements regulated in the defined district. Designating different zoning districts allows for there to be a strong sense of place established in each zone.

- **Section 17.44.130 – Landscaping, fences, and hedges.** This section regulates the landscapes, fences, walls, and hedges, and establishes what can be built, and regulates how not to implement these materials.
- **Section 17.44.160 – Roads in Scenic Areas.** This section regulates roads through scenic areas to protect recreation values, scenic features, and gateway areas, promote economic sustainability and prosperity, and preserve the city's small-town character along SR-12. Landscaping in these areas shall include a significant urban treescape to provide a tree canopy along the roadway for shading, aesthetic, air quality, and traffic-calming purposes and shall be planted as close as is practical to the roadway while considering tree health and traffic safety matters.
- **Chapter 17.56 – Signs.** This section regulates sign use to protect public safety, and maintain the city's appearance, as well as maintain the visibility of business and commerce. Signs are regulated as to their design, location, and illumination.
- **Chapter 17.60 – Site and Architectural Review.** This section provides regulations that promote Rio Vista's orderly and harmonious development, the stability of land values and investments and to help prevent excessive and unsightly grading or the erection of structures of unsightly appearance. The review process helps the city maintain its visual community character.

City of Rio Vista 2001 General Plan

The following policies from the City's 2001 General Plan's Land Use and Community Character and Design Element pertain to aesthetics:

Land Use Element

- **Policy 4.4.D:** The City shall strive to preserve and strengthen the original downtown, waterfront, and historic community and ensure that this district remains the community's civic and commercial focus.
- **Policy 4.4.E:** The City shall retain the predominance of historic single-family homes in the Historic Residential district while allowing mixed dwelling types that reflect historical building practices, including multi-family structures, accessory apartments, and flexible setbacks.
- **Policy 4.4.F:** The City shall seek to preserve and enhance multifamily "complexes" and mobile home parks constructed between 1960 and 1990.
- **Policy 4.4.G:** The City shall seek to preserve and retain the spacious single-family character of the custom-lot Edgewater Neighborhood adjacent to Edgewater Drive, between the riverfront and Highland Drive.

Community Character and Design Element

- **Policy 5.2.B:** The City shall preserve key hilltops for public use and views.
- **Policy 5.7.A:** The City shall incorporate community landmarks and focal points into community and neighborhood parks, linear pathway intersections, and commercial areas in the Existing City and Neighborhood Core Districts.
- **Policy 5.7.B:** The City shall ensure that structures at corners of major intersections, dominant buildings in a cluster or complex, and central gathering places become community landmarks. The City shall ensure that these structures are designed to provide definition and identity to the community and individual neighborhood through the use of significant building features and landscaping.
- **Policy 5.7.E:** The City shall ensure that developers incorporate such building features as clock towers, steeples, and cupolas into new structures at key focal points.
- **Policy 5.8.D:** The City shall preserve the rural and rolling hillside and valley character of the Highway 12 corridor to the greatest extent possible
- **Policy 5.8.E:** The City shall initiate a corridor design process that includes all stakeholders (private landowners and developers, Caltrans, the Highway 12 Association, local residents, and business owners) to create an appropriate standard for future expansion throughout the corridor and more immediate improvements between Drouin Drive and the Rio Vista Bridge
- **Policy 5.9.A:** The City shall create street patterns that provide pedestrian opportunities, variety, and visual interest.
- **Policy 5.11.A:** The City shall ensure the placement of residential structures on lots and building sites is carried out in a manner that reinforces residents' awareness of the neighborhood and community interaction.
- **Policy 5.11.B:** The City shall ensure that house frontages, yards, and sidewalks are the prominent features of the streetscape and that attached garages do not dominate the appearance of the front elevation of any residential structure.
- **Policy 5.11.C:** The City shall achieve visual interest through a variety of architectural elements.
- **Policy 5.11.D:** The City shall ensure that all elevations of a building have consistent architectural treatments, although one or more elevations may be emphasized. Generally, the same treatment used on the front elevation will continue around the sides far enough to provide a finished appearance from the street.

- **Policy 5.11.E:** The City shall ensure that carports, garages, and other accessory structures incorporate the architectural theme of the main building, including roof line and materials
- **Policy 5.12.A:** The City shall ensure that each neighborhood provides a variety of styles and architectural elements, including front and side porches, bay windows, roof lines, front door entrances, massing, and façade detailing.
- **Policy 5.12.B:** The City shall ensure that features and exterior colors vary from house to house along a street. The City shall ensure that significant changes in massing and roof lines are incorporated in elevations of the same floor plan in order to avoid a "tract" appearance
- **Policy 5.12.C:** The City shall ensure that residential building design reflects a variety of forms-not only the addition of finishes to uncreative building "boxes."
- **Policy 5.12.D:** The City shall ensure that exterior materials and architectural maintain a consistent and harmonious relationship and that frequent changes in materials are avoided.
- **Policy 5.13.A:** The City shall require that secondary units are consistent with the architectural theme of the main residence, including roof line and materials.
- **Policy 5.15.C:** The City shall ensure that new structures are complimentary to (and not clash with) existing structures.
- **Policy 5.20.A:** The City shall require that new and remodeled commercial structures are consistent with downtown's historic character and building scale.
- **Policy 5.21.A:** The City shall ensure that new buildings and additions are constructed to a height, massing, and scale that bear a reasonable relationship to adjacent buildings.

Waterfront Specific Plan

The Waterfront Specific Plan establishes a planning framework for the redevelopment of approximately 15 acres of land in the heart of downtown Rio Vista. The Waterfront District focuses on building on the historic character of the community, enriching the downtown business environment, and providing a diverse system of public open space. The plan provides design guidelines for new development that reflect the unique character of the region. The City has incorporated a review process that requires the City's review and approval of building placement and layout, architecture, landscaping, parking, signage, and other proposed construction, impacting the function and visual appearance of the project (Rio Vista 2007). Proposed construction of buildings and related facilities, including public works facilities, shall require project design review as established by the City of Rio Vista zoning ordinance's Site and Architectural Review process and standards,

which is outlined in Municipal Code Section 17.42.050, *Site and architectural review required*.

5.1.1.2 EXISTING CONDITIONS

Located in the Bay Area and the Sacramento Delta, the City of Rio Vista is adjacent to the Sacramento River. With long views of Mount Diablo and the Helene Madre Bridge from SR-12, the city has distinct physical features. The city is known for its small-town rural feel; however, over the past 10 years, the city has undergone a great amount of residential growth. Residential neighborhoods and commercial corridors are located between agricultural land.

Scenic Resources

SR-160 is a scenic resource adjacent to the city along the Sacramento River; however, this route is not within the City's Planning Area. SR-160 is eligible for a scenic highway designation. Scenic freeways, expressways, and roadways tend to offer sweeping views of particularly beautiful areas or prominent features, such as valleys and mountain ranges. They also include the State-designated scenic route and eligible scenic highway. In many areas, visually prominent ridges offer a striking and welcome contrast to the urban environment.

Scenic Vistas

The Sacramento River provides a beautiful backdrop for the community, and the river and broader Delta region provide opportunities to draw in tourists to Rio Vista. Enhancement of the river frontage is a key priority of the city, as only limited development that enhances and builds on the river's frontage has occurred to date. The Waterfront Districts (North Waterfront and South Waterfront) and the Downtown area represent significant destinations in Rio Vista that both attract visitors and tourists and serve as important meeting places for community members. The City has adopted the Waterfront Specific Plan, which provides specific regulations regarding building placement, building frontage characteristics, minimum and maximum allowed floors, and district-wide design regulations to ensure development in the Waterfront Specific Plan area will be compatible with existing commercial development in Rio Vista's downtown core.

Visual Quality and Zoning

The City of Rio Vista encompasses a small-town character. Critical elements in defining a small town-character are the type and scale of buildings in a city. In Rio Vista's downtown area, buildings are between one and three stories tall, with architectural details

dating back to different eras. Rio Vista's neighborhoods have a similarly unique style of houses, between one and two stories, built over the past 100 years.

The majority of Rio Vista's land use in the Planning Area consists of Agriculture/Range and Watershed Land and Public/Quasi-Public. Most of the urbanized landscape in Rio Vista is zoned for low-density residential, with some high-density residential and mixed use. A key City priority is promoting investment in and revitalization of the Downtown area. The intensification of uses in the Downtown area and the surrounding historic core of Rio Vista presents both opportunities and challenges, which indicates planned intensification of land uses, while also maintaining the area's charm.

Light and Glare

Light sources include general nighttime outdoor lights from the existing residential, office, industrial, and commercial buildings, vehicle lights from roads, as well as lights from airports and airplanes departing and arriving at the Rio Vista Municipal Airport. During the day, sunlight reflects off glass surfaces, creating glare. However, nighttime glare is limited to headlights reflecting off glass surfaces from other vehicles and windows. Night lighting in the city comes from various sources, such as streetlights, sign and building illumination, moonlight, light reflected from the ground, vehicle headlights, and light emitted from the exteriors and interiors of buildings.

5.1.2 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:

AE-1 Have a substantial adverse effect on a scenic vista.

AE-2 Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway.

AE-3 In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings. (Public views are those that are experienced from publicly accessible vantage point). In urbanized areas, conflict with applicable zoning and other regulations governing scenic quality.

AE-4 Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

5.1.3 Proposed General Plan Goals and Policies

The following goals, policies, and actions from the General Plan Update are applicable to aesthetic resources.

Land Use Element

- **Goal LU-2:** To maintain and enhance Rio Vista while providing a safe, family-friendly small-town character.
  - **Policy LU-4:** New buildings within the Downtown and North Waterfront Districts should embrace Rio Vista's unique character and reflect the architectural styles and characteristics of historic Rio Vista development.
  - **Policy LU-5:** Require the use of high-quality, environmentally-sustainable materials and enhanced architectural design for new development and the re-use of buildings in Downtown.
  - **Policy LU-6:** Encourage development in the North Waterfront District to be a mix of uses including residential, commercial, and public park space along the waterfront.
  - **Policy LU-7:** New blocks created in the North Waterfront district shall be of a size and scale consistent with the existing urban form of Downtown and as described in the Waterfront Specific Plan.
  - **Policy LU-8:** Encourage new commercial uses to group into clustered areas or centers containing professional offices, retail sales, and services. Where feasible, clustered development should be located at the major intersections, and exclude "strip" commercial development (shallow depth, linear form, parking in front of building, etc.).
  - **Policy LU-12:** Protect, preserve and enhance significant historic buildings to preserve and enhance the identity and character of the community.

Parks and Recreation Element

- **Goal PR-1:** To provide well designed parks that are accessible, attractive, meet recreational needs of the community and enhance neighborhood identity and character.
  - **Policy PR-6:** Whenever feasible, the City will enhance the Sacramento River waterfront as a scenic resource that provides for public access and water-oriented recreation.

Open Space and Conservation Element

- **Goal OSC-6**: To preserve and protect the cultural and historic resources of Rio Vista.
  - **Policy OSC-4**: Protect open space areas of natural resource and scenic value, including wetlands, riparian corridors, floodplains, woodlands, and hillsides.
  - **Policy OSC-6:** The City shall require that new development be designed and constructed to preserve the following types of areas and features as open space:
    - Scenic and trail corridors
    - Streams and riparian vegetation
    - Wetlands
    - Drainage corridors
    - Significant stands of vegetation
    - Wildlife corridors
    - Views of the Sacramento River

5.1.4 Environmental Impacts

Impact 5.1-1: Development in accordance with the proposed project would not substantially alter or damage scenic vistas or substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway. [Thresholds AE-1 and AE-2]

According to the Caltrans' Scenic Highway System Map, there are no State-designated highways within the City of Rio Vista. However, SR-160 is an eligible scenic highway located outside of city limits along the Sacramento River (Caltrans 2022). Scenic resources in and around Rio Vista include the Montezuma Hills, Delta Island network, the city's waterfront, the Sacramento River, Mount Diablo, and the Delta Marina.

Those traveling into Rio Vista from the west will pass through the rolling Montezuma Hills, with vistas across the Delta to Mount Diablo. On the northern edge of the city, the Delta marshlands provide a viewing opportunity to the Delta Island network. Travelers from the east enter the city via the Rio Vista Bridge (also known as Helen Madere Bridge), with panoramic views of the city's waterfront, the Sacramento River, Mount Diablo, and the Delta Marina. Boaters can view the city and the Delta Islands levee system.

5. Environmental Analysis
AESTHETICS

The only scenic resource within the vicinity of SR-160 is the Sacramento River. However, the proposed project will not affect this scenic resource since future development would be focused within city limits. Therefore, project implementation will not obstruct views of any scenic resources within any officially designated or eligible scenic highways.

Development allowed by the proposed project could occur within areas that would affect scenic vistas. Primary viewing opportunities in Rio Vista are intermittent, with vantage points along Highway 12, from River Road (SR-84), the City's Promenade ("Beach to Bridge") trail, the Delta Marina, the docks at City Hall, and properties in the South Waterfront, including Sandy Beach Regional Park. Development along these areas could adversely affect scenic vistas.

To address this concern, the proposed General Plan includes policies aimed at reducing impacts to identified scenic resources from future development, including Policy OSC-6, which requires that new development in the city be designed and constructed to preserve scenic and trail corridors, as well as views of the Sacramento River as open space. Policy PR-6 aims to enhance the Sacramento River waterfront as a scenic resource that provides for public access and water-oriented recreation.

Development in scenic areas would need to comply with development standards in the area's respective zoning district, as established in Municipal Code Title 17, Zoning. Furthermore, Municipal Code Section 17.44.160 would regulate roads in scenic areas through development standards and land use regulations to protect scenic features, gateway areas, and preserve the city's small-town character along SR-12.

The proposed project would not substantially alter scenic resources, and the urban nature of the development would be similar to existing conditions. Therefore, scenic resources and scenic vistas from publicly accessible locations in the city would not be adversely impacted. All General Plan policies, ordinances, and development standards would apply to future development, and impacts would be less than significant.

Level of Significance Before Mitigation: Impact 5.1-1 would be less than significant.

Mitigation Measures

No mitigation measures are required.

Impact 5.1-2: Development under the proposed project would alter visual appearance in the city but would not substantially degrade its existing visual character or quality. [Threshold AE-3]

Development under the proposed General Plan could alter the visual appearance of areas in the city. Future growth allowed by the proposed General Plan would be within the city limits and anticipated to develop over time. The proposed General Plan contemplates focusing new growth within the existing city limits—an area that is largely constrained by the Sacramento River and flood-prone lands to the north and east—to preserve agricultural land, grassland, natural habitats, watersheds, and open space. In recognition of these constraints, the proposed project prioritizes new development primarily through intensification of uses within Rio Vista's current footprint.

Specifically, Policy LU-4 intends to embrace Rio Vista's unique character and reflect the architectural styles and characteristics of historic Rio Vista development for new buildings within the Downtown and North Waterfront Districts, while Policy LU-5 requires the use of high-quality, environmentally sustainable materials and enhanced architectural design for new development and the re-use of buildings in the downtown area.

In addition, all development in the city must comply with applicable building and design standards to ensure that new development complements existing development. This includes adherence to the development standards in the City Municipal Code, such as Chapter 13.24, which governs grading, and Chapter 15.04, which adopts the 2022 California Buildings Standards Code. Municipal Code Title 17 further contains development standards for specific zoning districts, while Municipal Code Chapter 17.60 (Site and Architectural Review) sets forth specific findings that address aesthetic compatibility, promote orderly and harmonious development, prevent excessive or unsightly grading, and preclude the construction of visually unappealing structures. Adherence to Municipal Code Title 17 and Chapter 17.60 would ensure that the city maintains its visual community character. Moreover, the Waterfront Specific Plan provides design guidelines and a development review process that is subject to City approval of new developments near the waterfront area. These guidelines ensure that any construction within the waterfront area reflects and maintains the distinctive visual character of the community.

Compliance with development regulations is verified prior to issuance of a building permit and is therefore not reliant on future CEQA action. Because future urban development would be within existing city limits and subject to the City's established design regulations and review process, the proposed project would not substantially degrade the visual

character or quality of the city. Rather, infill projects and adaptive reuse, carried out in accordance with the City's codes and design review findings, are expected to integrate into the city's varied built environment. Therefore, the impact on visual character and quality would be less than significant.

Level of Significance Before Mitigation: Impact 5.1-2 would be less than significant.

Mitigation Measures

No mitigation measures are required.

Impact 5.1-3: The proposed project would not generate substantial light and glare. [Threshold AE-4]

The two major causes of light pollution are spill light and glare. Spill light is caused by misdirected light that illuminates outside the intended area of illumination. Glare is light that shines directly or is reflected from a surface into a viewer's eyes. Spill light and glare impacts are effects of a project's exterior lighting on adjoining uses and areas.

Sources of light in the city include building lighting (interior and exterior), security lighting, sign illumination, sports fields lighting, and parking area lighting. These sources of light and glare are mostly associated with residential, commercial, and industrial uses, as well as larger community parks. Other sources of nighttime light and glare include streetlights, vehicular traffic along surrounding roadways, and ambient lighting from surrounding communities.

Future development allowed by the proposed project could increase nighttime light and glare, including in areas that are currently undeveloped. To negate or minimize any such increase, landscaping, walls, and fences would be required construction features of future projects. Furthermore, future development must comply with the most recent CALGreen standards, including 5.106.8, *Light Pollution Reduction*, which establishes backlight, uplight, and glare ratings to minimize light pollution for nonresidential development.[1] The local building permit process enforces the provisions of CALGreen (CBSC 2022). Through compliance with the City Municipal Code and site-planning/design standards

1 Backlight, uplight, and glare (often abbreviated as BUG) are lighting characteristics that are assessed to minimize light pollution and reduce energy waste. Backlight refers to the portion of light emitted behind a luminaire, beyond the intended area of illumination, which can lead to light trespass onto adjacent properties. Uplight is the light emitted above the horizontal plane of the luminaire, contributing to skyglow and light pollution that diminishes visibility of the night sky. Glare describes the excessive brightness of light from a fixture that causes visual discomfort or impairs visibility, potentially creating safety hazards for drivers, pedestrians, and nearby residents.

pertaining to light and glare, any potential spillover and glare would be minimized, and the impact is considered less than significant.

Level of Significance Before Mitigation: Impact 5.1-3 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.1.5 Cumulative Impacts

Cumulative aesthetic impacts are based on potential changes to the visual quality in the city as development occurs consistent with the proposed project. Future development will alter the visual quality of the landscape through the introduction of structures on undeveloped parcels. Large-scale development will be discretionary and subject to design review by the Planning Department. Smaller-scale projects may be permitted uses and might not be subject to the design review process. However, all development must adhere to the General Plan policies, the City Municipal Code, and development standards that would ensure the aesthetics of new development is consistent with the General Plan. Therefore, the cumulative impacts of development consistent with the proposed General Plan are considered are less than cumulatively considerable.

5.1.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, all impacts would be less than significant.

5.1.7 Mitigation Measures

No mitigation measures are required.

5.1.8 Level of Significance After Mitigation

Impacts would be less than significant.

5.1.9 References

California Department of Transportation (Caltrans). 2022. Scenic Highways: California State Scenic Highway. Accessed April 1, 2024. https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways.

California Building Standards Commission (CBSC). 2022. California Green Building Standards Code. https://codes.iccsafe.org/content/CAGBC2022P1/chapter-5-nonresidential-mandatory-measures#CAGBC2022P1_Ch05_SubCh5.1

City of Rio Vista (City of Rio Vista). 2007. *Waterfront Specific Plan*. https://www.riovistacity.com/sites/default/files/fileattachments/planning/page/5630/rio_vista-waterfront_specific_plan-2007.pdf.

5.2 AGRICULTURE AND FORESTRY RESOURCES

This section of the Draft Environmental Impact Report (EIR) evaluates the potential for implementation of the proposed project to impact agriculture and forestry resources in the City of Rio Vista.

5.2.1 Environmental Setting

5.2.1.1 REGULATORY BACKGROUND

State

California General Plan Law

The California Government Code (Section 65302(d)) requires general plans to include an open space and conservation element for the conservation, development, and use of natural resources—including water and its hydraulic force, forests, soils, rivers and other waters, harbors, fisheries, wildlife, minerals, and other natural resources. The conservation element must consider the effect of development on natural resources that are on public lands.

Farmland Mapping and Monitoring Program

The California Natural Resources Agency is charged with restoring, protecting, and maintaining the state's natural, cultural, and historical resources. Within it, the Department of Conservation (DOC) provides technical services and information to promote informed land use decisions and sound management of the state's natural resources. DOC manages the Farmland Mapping and Monitoring Program (FMMP), which supports agriculture throughout California by developing maps and statistical data for analyzing land use impacts to farmland. FMMP publishes a field report for each county in the state; the most recent field report for Solano County was published in 2018. The field report categorizes land by agricultural production potential, according to the following classifications:[1]

- **Prime Farmland** has the best combination of physical and chemical features able to sustain long-term agricultural production. Prime Farmland has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agriculture production at some time during the four years prior to the mapping date.

1 Under CEQA, the primary concern is the conversion of Prime Farmland, Farmland of Statewide Importance, or Unique Farmland.

- **Farmland of Statewide Importance** is like Prime Farmland, but with minor shortcomings, such as steeper slopes or less ability to store moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
- **Unique Farmland** consists of lesser-quality soils used to produce the state's leading agricultural crops. This land is usually irrigated but may include no irrigated orchards or vineyards as found in some climatic zones in California. Land must have been farmed at some time during the four years prior to the mapping date.
- **Farmland of Local Importance** consists of land of importance to the local agricultural economy as determined by each county's Board of Supervisors and a local advisory committee. The Board of Supervisors determined that there will be no Farmland of Local Importance for Solano County (DOC 2018).
- **Grazing Land** is the land on which the existing vegetation is suited to the grazing of livestock.
- **Confined Animal Agriculture** lands include poultry facilities, feedlots, dairy facilities, and fish farms. In some counties, confined animal agriculture is a component of the farmland of local importance category.
- **Nonagricultural and Natural Vegetation** includes heavily wooded, rocky, or barren areas; riparian and wetland areas; grassland areas that do not qualify for grazing land due to their size or land management restrictions; small water bodies; and recreational water ski lakes. Constructed wetlands are also included in this category.
- **Semi-agricultural and Rural Commercial Land** includes farmstead, agricultural storage and packing sheds, unpaved parking areas, composting facilities, equine facilities, firewood lots, and campgrounds.
- **Vacant or Disturbed Land** includes open field areas that do not qualify for an agricultural category, mineral and oil extraction areas, off-road vehicle areas, electrical substations, channelized canals, and rural freeway interchanges.
- **Rural Residential Land** includes residential areas of one to five structures per 10 acres.
- **Urban and Built-Up Land** is occupied by structures with a building density of at least one unit per 1.5 acres, or approximately six structures to a 10-acre parcel. Common examples include residential structures, industrial structures, commercial structures, institutional facilities, cemeteries, airports, golf courses, sanitary landfills, sewage treatment structures, and water control structures.
- **Water** is used to describe perennial water bodies with an extent of at least 40 acres.

California Land Conservation Act (Williamson Act)

The California Land Conservation Act of 1965, better known as the Williamson Act, conserves agricultural and open space lands through property tax incentives and voluntary restrictive land use contracts administered by the County under State regulations. Private landowners voluntarily restrict their land to agricultural and compatible open space uses under minimum 10-year rolling term contracts, with counties and cities also acting voluntarily. In return, restricted parcels are assessed for property tax purposes at a rate consistent with their actual use, rather than potential market value.

Nonrenewal status is applied to Williamson Act contracts that are within the nine-year termination process, during which the annual tax assessment for the property gradually increases.

Forestland and Timberland Protection

State regulations such as the Forest Taxation Reform Act of 1976 and the Z'berg-Nejedly Forest Practice Act of 1973 (California Forest Practice Act) provide for the preservation of forest lands from encroachment by other, incompatible land uses and for oversight of the management of forest practices and forest resources.

Public Resources Code Section 12220(g) defines "forest land" for the purposes of the California Environmental Quality Act (CEQA) as land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits.

The California Timberland Productivity Act of 1982, like the Land Conservation Act, was passed to encourage the production of timber resources. Government Code Section 51104(g) defines Timber, Timberland, and Timberland Production Zone for the purposes of CEQA and Timberland Preserve Zone, which may be used in city and county general plans.

- **Timber** means trees of any species maintained for eventual harvest for forest production purposes, whether planted or of natural growth, standing or down, on privately or publicly owned land, including Christmas trees, but does not mean nursery stock.

- **Timberland** means privately owned land, or land acquired for State Forest purposes, which is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses, and which is capable of growing an average annual volume of wood fiber of at least 15 cubic feet per acre.
- **Timberland Production Zone** or **TPZ** means an area that has been zoned pursuant to Section 51112 or 51113 and is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses, as defined in subdivision (h). With respect to the general plans of cities and counties, Timberland Preserve Zone means Timberland Production Zone.

City Council or County Boards of Supervisors may designate areas of timberland preserve, referred to as Timberland Production Zones, which restrict the land's use to the production of timber for an initial 10-year term in return for lower property taxes.

Local

City of Rio Vista 2001 General Plan

The existing General Plan contains the Planning Constraints and Boundaries, Land Use, and Noise and Safety Elements with the following policies related to agricultural resources (Rio Vista 2001):

Planning Constraints and Boundaries Element

- **Policy 3.2.A:** Development projects shall be reviewed on a case-by-case basis to ensure that adequate buffers are maintained between urban and agricultural lands, while giving developers flexibility in design at the urban edge.
- **Policy 3.5.C:** Impacts of urban development on agricultural operations shall be minimized.
- **Policy 3.5.E:** The City shall support agricultural landowners outside the City limits in their requests for achieving land trust protection on their properties unless there is a clear or imminent conflict with City policies.
- **Policy 3.5.F:** The City shall actively oppose any annexation requests or other changes in land use designations that would allow agricultural lands to develop within the area of concern in Sacramento County.

Land Use Element

- **Policy 4.2.F:** Sub-Planning Area 6–Agricultural and Open Space Lands: The City shall strive to ensure that these lands remain in nonurban, predominantly agricultural and open space uses.
- **Policy 4.4.L:** The City shall support efforts to preserve agricultural uses outside City boundaries.

Safety Noise Element

- **Policy 11.9.B:** The City shall implement the provisions of Assembly Bill 1190 to provide that agricultural activities, operations, and facilities, or appurtenances thereof, do not constitute a nuisance as long as they continue to operate in a manner similar to that in which they have historically operated.

City of Rio Vista Climate Action Plan

The City's Climate Action Plan (CAP) was adopted in 2014. The CAP includes Measure GI-1.1: Urban Forest Program, which promotes urban forest development and maintenance for carbon sequestration through outreach, incentives, and strategic leadership. The City aims to enforce tree-planting requirements for new construction and parking lots, including the new shade tree ordinance (Rio Vista 2014).

City of Rio Vista Municipal Code

Title 17 – Zoning

There are no agricultural or forestry resources zoning designations.

Chapter 17.44 – General Design and Use Requirements

This chapter aims to protect recreation values, scenic features, and gateway areas, promote economic sustainability, and preserve the city's small-town character along SR-12. Projects requiring site plan and architectural review must comply with these requirements. One of these requirements includes landscape for new development. Landscaping along SR-12 and gateway areas should include a significant urban treescape for shading, aesthetic, air quality, and traffic-calming purposes. The requirements establish that trees should be planted as close to the roadway as possible while considering tree health and safety. Specimen-sized trees should be preserved or installed at key commercial development nodes. Landscaped areas adjacent to large development projects should be improved with treescape plantings during the first or first phases of the project to allow for significant tree growth before pavement

installation, building construction, and associated aesthetic and urban heat island impacts.

5.2.1.2 EXISTING CONDITIONS

This section describes agricultural land with respect to its physical condition and the unique geography and environmental factors that contribute to agricultural productivity in Rio Vista.

Agricultural Uses

The agricultural lands surrounding Rio Vista contribute to its rural community setting. This connection to its agricultural heritage and the landscape of rolling hills is highly valued by Rio Vista residents. Because most agricultural lands in the City's Planning Area are outside the city limits and under the jurisdiction of Solano County, Rio Vista has limited influence on and control over the agricultural lands and hillsides that surround the city.

Farmland

There is limited commercial agricultural activities inside the city limits or in the Sphere of Influence of Rio Vista, except for land in the Sphere of Influence south of Rio Vista along Beach Drive and the Sacramento River, in the city limits between McCormack Road and Highway 12, and east of Airport Road to the sphere boundary northeast of the city. Active commercial agriculture inside the city limits is mostly limited to grazing activities on City-owned property at the intersection of Airport Road and Church Road and adjacent to the City's Northwest Wastewater Treatment Plant. Grain cultivation also occurs along Highway 12.

The Planning Area contains large tracts of land in active agricultural use generally southwest of Rio Vista between the city and Montezuma Hills. Agricultural lands in the Sphere of Influence and adjacent to the Montezuma Hills are primarily grazing lands and unirrigated pasture. Much of the agricultural land in the Sphere of Influence and the Planning Area has natural gas infrastructure and wind turbines that can be compatible with dry-land grain cultivation, pasture, and grazing operations.

Although Rio Vista has not designated any of its lands in the city limits for agricultural uses, preservation of farmland is a critical component in maintaining the community's rural, small-town character.

Agricultural Classifications and Williamson Act Contracts

The California Important Farmland Finder designates the City of Rio Vista as primarily Grazing Land and Urban and Built-Up Land (DOC 2022a). Outside of city limits, Rio Vista contains land with Williamson Act contracts. The status of these contracts include mixed-enrollment agriculture land and nonprime agriculture land (DOC 2022b).

Forestland and Timberland

There are no forestland or timberland designations in the Planning Area, according to Government Code, Section 51104(g).

5.2.2 Thresholds of Significance

The City has determined that a project would normally have a significant effect on the environment if the project would:

AG-1 Convert Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance (Important Farmland), as shown on the maps prepared pursuant to the FMMP, to nonagricultural use.

AG-2 Conflict with existing zoning for agricultural use, or a Williamson Act contract.

AG-3 Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g)).

AG-4 Result in the loss of forest land or conversion of forest land to non-forest use.

AG-5 Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Important Farmland to nonagricultural use or conversion of forest land to non-forest use.

5.2.3 Proposed General Plan Goals and Policies

The following goals, policies, and actions from the proposed General Plan are applicable to agriculture and forestry resources.

Open Space and Conservation Element

- **Goal OSC-2:** To preserve agricultural resources by protecting valuable agricultural lands in and around Rio Vista.

- **Goal OSC-3:** To utilize energy and water resources wisely, and to promote conservation programs for lower energy and water consumption in the City.
  - **Policy OSC-4:** Protect open space areas of natural resource and scenic value, including wetlands, riparian corridors, floodplains, woodlands, and hillsides.
  - **Policy OSC-6:** The City shall require that new development be designed and constructed to preserve the following types of areas and features as open space:
    - Scenic and trail corridors
    - Streams and riparian vegetation
    - Wetlands
    - Drainage corridors
    - Significant stands of vegetation
    - Wildlife corridors
    - Views of the Sacramento River
  - **Policy OSC-9**: Promote preservation of agriculture in and around the City of Rio Vista.
  - **Program OSC-5: Agricultural Land Preservation.** Prior approval of any development permit on land considered prime, of statewide significance, or unique, the City shall require the following:

    1. Completion of the California Department of Conservation Land Evaluation & Site Assessment Model. If the model score is 39 points or less, conversion of the land is not significant, and no further mitigation is required. If the model score is between 40 and 79 points, conversion of the land to urban uses may be significant but will depend on the results of the model. A LESA model score of 80 or greater identifies the conversion as significant and will require mitigation.
    2. If the LESA model results determine that conversion of the land to urban uses is a significant impact, the development shall be conditioned to provide either an agricultural easement on existing farmland with a similar or greater LESA model score, or the creation of new agricultural land and easement at a 1:1 ratio.

- **Program OSC-6: Reduce Agricultural Land Impacts.** Impacts of urban development on agricultural operations shall be minimized through of the following actions:
  - The City shall not annex lands with active Williamson Act contracts.
  - Development projects abutting lands suitable for agricultural or grazing uses shall be required to disclose the presence of or potential for agricultural operations to prospective homeowners.

5.2.4 Environmental Impacts

Impact 5.2-1: The proposed project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) to nonagricultural use. [Threshold AG-1]

Rio Vista has not designated any of its lands in the city limits for agricultural uses. The Planning Area contains large tracts of land in active agricultural use generally southwest of Rio Vista between the city and Montezuma Hills. Agricultural lands in the Sphere of Influence and adjacent to the Montezuma Hills are primarily grazing lands and unirrigated pasture.

The Planning Area does not have lands designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance on the California Important Farmland Finder (DOC 2022a). As such, the proposed project would not result in the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, and no impact would occur.

Level of Significance Before Mitigation: Impact 5.2-1 would have no impact.

Mitigation Measures

No mitigation measures are required.

Impact 5.2-2: The proposed project would not conflict with existing zoning for agricultural use or a Williamson Act contract nor would the proposed project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), Timberland (as defined by Public Resources Code Section 4526), or Timberland zoned Timberland Production (as defined by Government Code Section 51104(g)). [Thresholds AG-2 and AG-3]

The proposed project would not conflict with existing zoning for agricultural use as the agricultural land use is allowed to continue within each of the zoning districts. Development may eventually occur and eliminate the agricultural use, but until that time, the land can continue to be farmed. This EIR and the proposed project assume that all land within the city limits will eventually be developed with urban uses. As such, the City will not continue any Williamson Act contract land after annexation.

Outside of city limits, Rio Vista contains land with Williamson Act contracts. The status of these contracts include mixed-enrollment agriculture land and nonprime agriculture land. However, the proposed project will not affect these lands since future development would be focused within city limits, and the City has no land use authority over property outside of the city limits. Furthermore, Program OSC-6 would also ensure that the City does not annex lands with active Williamson Act contracts. As such, the proposed project would not conflict with existing zoning for agricultural use or an existing Williamson Act contract. Therefore, no impact would occur.

There are no areas zoned as forestland in Rio Vista. The Rio Vista Zoning Code contains use and zone district regulations for agriculture but does not specify forest or timberland. Forest and timberland, as defined by the State, include both land that is used for timber harvesting and other forested land that has aesthetic, recreational, and biological amenities. The proposed project would not conflict with existing zoning for, or cause rezoning of Forestland, or Timberland zoned Timberland Production. Thus, no impact would occur.

Level of Significance Before Mitigation: Impact 5.2-2 would have no impact.

Mitigation Measures

No mitigation measures are required.

Impact 5.2-3: The proposed project would result in the loss of forestland or conversion of forest land to non-forest use. [Threshold AG-4]

Government Code Section 51104(g) defines Timber, Timberland, and Timberland Production Zone for CEQA and Timberland Preserve Zone in city and county general plans. Timber refers to trees maintained for forest production purposes but does not include nursery stock. Timberland is land used for growing and harvesting timber, or for other uses, with an average annual volume of wood fiber of at least 15 cubic feet per acre. Timberland Production Zone (TPZ) is an area zoned for growing and harvesting timber or related uses and is commercially viable. There are no TPZ lands in the Planning Area. As such, the General Plan Update would not result in the conversion of forested areas to non-forested areas.

According to Public Resources Code Section 12220(g), “forest land” is land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits. Native vegetation in Rio Vista includes habitat, such as riparian habitat, that meets the definition of “forest land.” Riparian habitats are characterized by shrubby or wooded plant communities along the fringes of ponds and streams. Ecologically, riparian habitats are biologically very rich, supporting more species than most other habitat types due to the presence of water and a productive, nutrient-rich environment. However, within the Rio Vista city limits and immediate surroundings, riparian communities are quite limited. Riparian habitat is found north of Airport Road on State Department of Water Resources land where riparian plant communities have developed following land disturbance related to sand and aggregate mining, and along Montezuma Hills Road. The proposed project could result in the conversion of riparian habitat as a result of future development. However, Policy OSC-4 aims to protect open space areas of natural resource and scenic value, including wetlands, riparian corridors, floodplains, woodlands, and hillsides. Furthermore, Policy OSC-6 requires that new development be designed and constructed to preserve riparian areas as open space. Therefore, impacts to forestland under the proposed project would be less than significant.

Level of Significance Before Mitigation: Impact 5.2-3 would be less than significant.

Mitigation Measures

No mitigation measures are required.

Impact 5.2-4: The proposed project would not involve other changes in the existing environment which, due to their location or nature, could result in conversion of Important Farmland to nonagricultural use or conversion of forest land to non-forest use. [Threshold AG-5]

Rio Vista has not designated any of its lands within city limits for agricultural uses. Furthermore, the Planning Area does not have lands designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance on the California Important Farmland Finder (DOC 2022a). As such, the proposed project would not result in the conversion of Important Farmland.

However, native vegetation in Rio Vista includes habitat, such as riparian habitat, that meets the definition of "forest land." Riparian communities are quite limited within the Rio Vista city limits and immediate surroundings. The proposed project could result in the conversion of riparian habitat as a result of future development. However, Policy OSC-4 aims to protect open space areas of natural resource and scenic value, including wetlands, riparian corridors, floodplains, woodlands, and hillsides. Furthermore, Policy OSC-6 requires that new development be designed and constructed to preserve riparian areas as open space. Therefore, impacts to forestland under the proposed project would be less than significant.

Together, these policies would minimize changes to the forest land that would result in the conversion of forest land of concern under CEQA to non-forest uses, resulting in a less-than-significant impact.

Level of Significance Before Mitigation: Impact 5.2-4 would be less than significant.

Mitigation Measures

No mitigation measures would be required.

5.2.5 Cumulative Impacts

Future development under the proposed project could directly and/or indirectly impact agricultural and forestry resources. Although future development under the proposed project would be required to comply with existing laws and regulations protecting agricultural and forestry resources, the project could still result in the loss of forest land. However, adherence to the General Plan policies, the City Municipal Code, and development standards that would ensure the cumulative impacts of development to agriculture and forestry resources are less than cumulatively considerable.

5.2.6 Level of Significance Before Mitigation

After implementation of regulatory requirements and standard conditions of approval, all impacts would be less than significant.

5.2.7 Mitigation Measures

No mitigation measures are required.

5.2.8 Level of Significance After Mitigation

Impacts would be less than significant.

5.2.9 References

California Department of Conservation (DOC). 2018. Farmland of Local Importance. Accessed June 10, 2024. https://www.conservation.ca.gov/dlrp/fmmp/Documents/Farmland_of_Local_Importance_2018.pdf

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5.3 AIR QUALITY

This section of the Draft Environmental Impact Report (EIR) evaluates the potential air quality impacts of the City of Rio Vista General Plan Update (proposed project) in a local and regional context. This evaluation is based on the methodology recommended by the Yolo-Solano Air Quality Management District (YSAQMD) for plan-level analyses. The analysis focuses on air pollution from regional emissions and localized pollutant concentrations. Criteria air pollutant emissions modeling is included in Appendix 5.3-1, *Air Quality and Greenhouse Gas Emissions Assessment*, of this Draft EIR.

5.3.1 Environmental Setting

5.3.1.1 TERMINOLOGY

- **AAQS.** Ambient Air Quality Standards
- **CES.** CalEnviroScreen. CES is a mapping tool that helps identify the California communities most affected by sources of pollution and where people are often especially vulnerable to pollution's effects.
- **Concentrations.** Refers to the amount of pollutant material per volumetric unit of air. Concentrations are measured in parts per million (ppm), parts per billion (ppb), or micrograms per cubic meter ($\mu g/m^3$).
- **Criteria Air Pollutants.** Those air pollutants specifically identified for control under the federal Clean Air Act (currently seven—carbon monoxide, nitrogen oxides, lead, sulfur oxides, ozone, and coarse and fine particulates).
- **DPM.** Diesel particulate matter.
- **Emissions.** Refers to the actual quantity of pollutant, measured in pounds per day or tons per year.
- **ppm.** Parts per million.
- **Sensitive receptor.** Land uses that are considered more sensitive to air pollution than others due to the types of population groups or activities involved. These land uses include residential, retirement facilities, hospitals, and schools.
- **TAC.** Toxic air contaminant.
- **$\mu g/m^3$.** Micrograms per cubic meter.
- **VMT.** Vehicle miles traveled.

5.3.1.2 SACRAMENTO VALLEY AIR BASIN

The California Air Resources Board (CARB) divides the state into air basins that share similar meteorological and topographical features. Rio Vista is in the Sacramento Valley Air Basin (SVAB), in a portion of area that is under the jurisdiction of the YSAQMD. The

air basin is relatively flat, bordered by mountains to the east, west, and north and by the San Joaquin Valley to the south. Air flows into the SVAB through the Carquinez Strait, moving across the Sacramento Delta, and bringing pollutants from the heavily populated San Francisco Bay Area. The climate is characterized by hot, dry summers and cool, rainy winters. Characteristic of SVAB winter weather are periods of dense and persistent low-level fog, which are most prevalent between storm systems. From May to October, the region's intense heat and sunlight lead to high ozone pollutant concentrations. Summer inversions are strong and frequent but are less troublesome than those that occur in the fall. Autumn inversions, formed by warm air subsiding in a region of high pressure, have accompanying light winds that do not provide adequate dispersion of air pollutants.

5.3.1.3 AIR POLLUTANTS OF CONCERN

Criteria Air Pollutants

Criteria air pollutants are defined as those pollutants for which the federal and state governments have established air quality standards for outdoor or ambient concentrations to protect public health with a determined margin of safety. Ozone (O_3), coarse particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$) are generally considered to be regional pollutants because they or their precursors affect air quality on a regional scale. Pollutants such as carbon monoxide (CO), nitrogen dioxide (NO_2), and sulfur dioxide (SO_2) are local pollutants because they tend to accumulate in the air locally. PM is also considered a local pollutant. Health effects commonly associated with criteria pollutants are summarized in Table 5.3-1, *Summary of Criteria Air Pollutants and Sources.*

Table 5.3-1 Summary of Criteria Air Pollutants and Sources

Pollutant	Major Human-made Sources	Human Health and Welfare Effects
CO	An odorless, colorless gas formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, affecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.
NO_2	A reddish-brown gas formed during fuel combustion for motor vehicles, energy utilities, and industrial sources.	Respiratory irritant; aggravates lung and heart problems. Precursor to ozone and acid rain. Causes brown discoloration of the atmosphere.
O_3	Formed by a chemical reaction between reactive organic gases (ROGs) and nitrogen oxides (NOx) in the presence of sunlight. Common sources of these precursor pollutants include motor vehicle exhaust, industrial emissions, solvents, paints, and landfills.	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.

Table 5.3-1 Summary of Criteria Air Pollutants and Sources

Pollutant	Major Human-made Sources	Human Health and Welfare Effects
$PM_{2.5}$ and PM_{10}	Power plants, steel mills, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles, and others.	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).
SO_2	An odorless, colorless gas formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, affecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.

Source: CARB 2025.

Carbon Monoxide

CO in the urban environment is associated primarily with the incomplete combustion of fossil fuels in motor vehicles. CO combines with hemoglobin in the bloodstream and reduces the amount of oxygen that can be circulated through the body. High CO concentrations can cause headaches, aggravate cardiovascular disease, and impair central nervous system functions. CO concentrations can vary greatly over comparatively short distances. Relatively high concentrations of CO are typically found near crowded intersections and along heavy roadways with slow-moving traffic. Even under the most severe meteorological and traffic conditions, high concentrations of CO are limited to locations within relatively short distances (i.e., up to 600 feet or 185 meters) of the source. Overall, CO emissions are decreasing as a result of the federal Motor Vehicle Control Program, which has mandated increasingly lower emission levels for vehicles manufactured since 1973.

Toxic Air Contaminants

People exposed to TACs at sufficient concentrations and durations may have an increased chance of getting cancer or experiencing other serious health effects. These health effects can include damage to the immune system as well as neurological, reproductive (e.g., reduced fertility), developmental, respiratory, and other health problems (USEPA 2020). By the last update to the TAC list in December 1999, CARB had designated 244 compounds as TACs (CARB 1999). Additionally, CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. There are no air quality standards for TACs. Instead, TAC impacts are

evaluated by calculating the health risks associated with a given exposure. The majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most relevant to the proposed project being particulate matter from diesel-fueled engines.

Nitrogen Oxides

Nitrogen gas comprises about 80 percent of the air and is naturally occurring. At high temperatures and under certain conditions, nitrogen can combine with oxygen to form several different gaseous compounds collectively called nitric oxides (NOx). Motor vehicle emissions are the main source of NOx in urban areas. NOx is very toxic to animals and humans because of its ability to form nitric acid with water in the eyes, lungs, mucus membrane, and skin. In animals, long-term exposure to NOx increases susceptibility to respiratory infections, and lowering resistance to such diseases as pneumonia and influenza. Laboratory studies show that susceptible humans, such as asthmatics, who are exposed to high concentrations can suffer from lung irritation or possible lung damage. Precursors of NOx, such as NO and NO_2, attribute to the formation of O_3 and $PM_{2.5}$. Epidemiological studies have also shown associations between NO_2 concentrations and daily mortality from respiratory and cardiovascular causes and with hospital admissions for respiratory conditions.

Ozone

Ozone (O_3) is a secondary pollutant, meaning it is not directly emitted. It is formed when volatile organic compounds (VOCs), also known as reactive organic gases (ROG) and NOx, undergo photochemical reactions that occur only in the presence of sunlight. The primary source of ROG emissions is unburned hydrocarbons in motor vehicles and other internal combustion engine exhaust. Sunlight and hot weather cause ground-level O_3 to form. Ground-level O_3 is the primary constituent of smog. Because O_3 formation occurs over extended periods of time, both O_3 and its precursors are transported by wind and high O_3 concentrations can occur in areas well away from sources of its constituent pollutants.

People with lung disease, children, older adults, and people who are active can be affected when O_3 levels exceed ambient air quality standards. Numerous scientific studies have linked ground-level O_3 exposure to a variety of problems, including lung irritation, difficult breathing, permanent lung damage to those with repeated exposure, and respiratory illnesses.

Sulfur Dioxide

SO_2 is a colorless gas with a pungent odor; however, sulfur dioxide can react with other particulates in the atmosphere which contribute to the haze effect. SO_2 standards have been developed by the United States Environmental Protection Agency (USEPA) to regulate all sulfur oxides, however SO_2 is by far the most abundant sulfur oxide in the atmosphere. Currently, SO_2 is primarily a result of the burning of fossil fuels for power generation and other industrial sources. Modern regulations on diesel fuel have greatly reduced the amount of SO_2 in the atmosphere and there are currently no areas in California that have nonacceptable levels of SO_2, by state or federal standards.

Particulate Matter

Particulate matter includes both aerosols and solid particulates of a wide range of sizes and composition. Of concern are those particles smaller than or equal to 10 microns in diameter size (PM_{10}) and small than or equal to 2.5 microns in diameter ($PM_{2.5}$). Smaller particulates are of greater concern because they can penetrate deeper into the lungs than larger particles. PM_{10} is generally emitted directly as a result of mechanical processes that crush or grind larger particles or form the resuspension of dust, typically through construction activities and vehicular travel. PM_{10} generally settles out of the atmosphere rapidly and is not readily transported over large distances. $PM_{2.5}$ is directly emitted in combustion exhaust and is formed in atmospheric reactions between various gaseous pollutants, including NOx, sulfur oxides (SOx) and VOCs. $PM_{2.5}$ can remain suspended in the atmosphere for days and/or weeks and can be transported long distances.

The principal health effects of airborne PM are on the respiratory system. Short-term exposure of high $PM_{2.5}$ and PM_{10} levels are associated with premature mortality and increased hospital admissions and emergency room visits. Long-term exposure is associated with premature mortality and chronic respiratory disease. According to the USEPA, some people are much more sensitive than others to breathing PM_{10} and $PM_{2.5}$. People with influenza, chronic respiratory and cardiovascular diseases, and the elderly may suffer worse illnesses; people with bronchitis can expect aggravated symptoms; and children may experience decline in lung function due to breathing in PM_{10} and $PM_{2.5}$. Other groups considered sensitive include smokers and people who cannot breathe well through their noses. Exercising athletes are also considered sensitive because many breathe through their mouths.

Toxic Air Contaminants

In addition to the criteria pollutants discussed previously, TACs are another group of pollutants of concern. TACs are considered either carcinogenic or noncarcinogenic based on the nature of the health effects associated with exposure to the pollutant. For regulatory purposes, carcinogenic TACs are assumed to have no safe threshold below which health impacts would not occur, and cancer risk is expressed as excess cancer cases per one million exposed individuals. Noncarcinogenic TACs differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis. Carcinogenic TACs can also have noncarcinogenic health hazard levels.

There are many different types of TACs, with varying degrees of toxicity. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Additionally, diesel engines emit a complex mixture of air pollutants composed of gaseous and solid material. The solid emissions in diesel exhaust are known as diesel particulate matter (DPM). In 1998, California identified DPM as a TAC based on its potential to cause cancer, premature death, and other health problems (e.g., asthma attacks and other respiratory symptoms). Those most vulnerable are children (whose lungs are still developing) and the elderly (who may have other serious health problems). Overall, diesel engine emissions are responsible for the majority of California's known cancer risk from outdoor air pollutants. Diesel engines also contribute to California's $PM_{2.5}$ air quality problems. Public exposure to TACs can result from emissions from normal operations, as well as from accidental releases of hazardous materials during upset conditions. The health effects of TACs include cancer, birth defects, neurological damage, and death.

Diesel Exhaust

CARB has identified DPM as a TAC. DPM differs from other TACs in that it is not a single substance but rather a complex mixture of hundreds of substances. Diesel exhaust is a complex mix of particles and gases produced when an engine burns diesel fuel. DPM is a concern because it causes lung cancer; many compounds found in diesel exhaust are carcinogenic. DPM includes the particle-phase constituents in diesel exhaust. The chemical composition and particle sizes of DPM vary between different engine types (heavy-duty, light-duty), engine operating conditions (idle, accelerate, decelerate), fuel formulations (high/low sulfur fuel), and the year of the engine (USEPA 2002). Some short-term (acute) effects of diesel exhaust include eye, nose, throat, and lung irritation, and diesel exhaust can cause coughs, headaches, light headedness, and nausea. DPM

poses the greatest health risk among the TACs; due to their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung.

Ambient Air Quality

Ambient air quality in Rio Vista can be inferred from ambient air quality measurements conducted at nearby air quality monitoring stations. CARB maintains more than 60 monitoring stations throughout California. O_3, PM_{10}, and $PM_{2.5}$ are the pollutants most potently affecting the Rio Vista region. As described in detail below, the region is designated nonattainment for the federal standards of O_3 and $PM_{2.5}$ and is nonattainment for the State standards of O_3 and PM_{10}. Solano County contains several air quality monitors throughout the area, which capture the ambient concentrations of O_3, $PM_{2.5}$, and PM_{10}. The Vacaville-Ulatis Drive and Vacaville-Merchant Street air quality monitoring stations monitor O_3 and PM_{10}, respectively. The Davis-University of California Davis (UCD) campus air quality monitoring station is the closest $PM_{2.5}$ monitoring station to Rio Vista, approximately eight miles to the north. Table 5.3-2 summarizes the air quality data from the most recent years that is relevant to Rio Vista. Ambient emission concentrations will vary due to localized variations in emission sources and climate, yet these measurements should be considered “generally” representative of ambient concentrations in the city.

Table 5.3-2 Summary of Ambient Air Quality Data in Rio Vista

Pollutant Scenario	2021	2022	2023
O_3			
Max 1-hour concentration (ppm)	0.095	0.086	0.075
Max 8-hour concentration (ppm) (state/federal)	0.078 / 0.078	0.068 / 0.069	0.069 / 0.069
Number of days above 1-hour standard (state/federal)	1 / 0	1 / 0	1 / 0
Number of days above 8-hour standard (state/federal)	0 / 0	0 / 0	0 / 0
PM_{10}			
Max 24-hour concentration ($\mu g/m_3$) (state/federal)	49.6 / 50.0	35.4 / 33.4	38.1 / 37.6
Number of days above 24-hour standard (state/federal)	0 / 0	0 / 0	0 / 0
$PM_{2.5}$**			
Max 24-hour concentration ($\mu g/m_3$) (state/federal)	66.2 / *	31.3 / *	38.3 / *
Number of days above federal 24-hour standard	*	*	*

Source: CARB 2024.
Notes:
** = $PM_{2.5}$ measurements were taken from the Davis-UCD Campus air quality monitoring station. This is the closest monitor to Rio Vista that provides data for PM_{10}, and the only air quality monitoring station in Solano County that monitors $PM_{2.5}$.
* = Insufficient data available.
$\mu g/m_3$ = micrograms per cubic meter; ppm = parts per million

The USEPA and CARB designate air basins or portions of air basins and counties as being in “attainment” or “nonattainment” for each of the criteria pollutants. Areas that do not meet the standards are classified as nonattainment areas. The National Ambient Air Quality Standards (NAAQS) for O_3, PM_{10}, and $PM_{2.5}$ are based on statistical calculations over one- to three-year periods, depending on the pollutant. The California Ambient Air Quality Standards (CAAQS) are not to be exceeded during a three-year period. The attainment status for the Rio Vista portion of Solano County is presented in Table 5.3-3.

Table 5.3-3 Attainment Status of Criteria Pollutants in the Rio Vista Portion of Solano County

Pollutant	State Designation	Federal Designation
O_3	Nonattainment - Transitional	Nonattainment
PM_{10}	Nonattainment	Unclassified
$PM_{2.5}$	Unclassified	Nonattainment
CO	Attainment	Unclassified/Attainment
NO_2	Attainment	Unclassified/Attainment
SO_2	Attainment	Unclassified/Attainment

Source: CARB 2023.

The determination of whether an area meets the state and federal standards is based on air quality monitoring data. As shown in Table 5.3-3, sometimes areas are unclassified, which means there is insufficient monitoring data for determining attainment or nonattainment. Unclassified areas are typically treated as being in attainment. Because the attainment/nonattainment designation is pollutant-specific, an area may be classified as nonattainment for one pollutant and attainment for another. Similarly, because the state and federal standards differ, an area could be classified as attainment for the federal standards of a pollutant and as nonattainment for the state standards of the same pollutant. The Solano County region is designated as a nonattainment area for the federal O_3 and $PM_{2.5}$ standards and is also a nonattainment area for the state standards for O_3 and PM_{10} (CARB 2023).

Sensitive Receptors

Sensitive receptors are defined as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis.

Because placement of sensitive land uses falls outside CARB's jurisdiction, CARB developed and approved the Air Quality and Land Use Handbook: A Community Health Perspective (2005) to address the siting of sensitive land uses in the vicinity of freeways, distribution centers, rail yards, ports, refineries, chrome plating facilities, dry cleaners, and gasoline-dispensing facilities. This guidance document was developed to assess compatibility and associated health risks when placing sensitive receptors near existing pollution sources. CARB's recommendations on the siting of new sensitive land uses

identified in Table 5.3-4 were based on a compilation of recent studies that evaluated data on the adverse health effects from proximity to air pollution sources.

Table 5.3-4 CARB Recommendations on Siting New Sensitive Land Uses Near Air Pollutant 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 per day, or rural roads with 50,000 vehicles per 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 per day, or where transport refrigeration unit operations exceed 300 hours per week). Take into account the configuration of existing distribution centers and avoid locating residences and other 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 new sensitive land uses immediately downwind of ports in the most heavily impacted zones. Consult local air districts or CARB 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	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 three 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.

Source: CARB 2005.

The key observation in these studies is that proximity to air pollution sources substantially increases both exposure and the potential for adverse health effects. There are three carcinogenic TACs that constitute the majority of the known health risks from motor vehicle traffic: DPM from trucks and benzene and 1,3-butadiene from passenger vehicles. In 2017, CARB provided a supplemental technical advisory to the handbook for near-roadway air pollution exposure, titled Strategies to Reduce Air Pollution Exposure Near High-Volume Roadways. Strategies include practices and technologies that reduce traffic

emissions, increase dispersion of traffic pollution (or the dilution of pollution in the air), or remove pollution from the air (CARB 2017).

Odors

Typically, odors are regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals can smell minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; in fact, an odor that is offensive to one person (e.g., from a fast-food restaurant) may be perfectly acceptable to another. It is also important to note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word "strong" to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air.

When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

5.3.1.4 REGULATORY BACKGROUND

Ambient Air Quality Standards (AAQS) have been adopted at the State and federal levels for criteria air pollutants. In addition, both the State and federal government regulate the release of TACs. Land uses in Solano County are subject to the rules and regulations imposed by the Bay Area Air District (Air District, formerly BAAQMD), the CAAQS adopted by CARB, and NAAQS adopted by the USEPA. Federal, State, regional, and local laws,

regulations, plans, or guidelines that are potentially applicable to the proposed project are summarized in this section.

Federal and State

Ambient Air Quality Standards

The Clean Air Act was passed in 1963 by the US Congress and has been amended several times. The 1970 Clean Air Act amendments strengthened previous legislation and laid the foundation for the regulatory scheme of 1970s and 1980s. In 1977, Congress again added several provisions, including nonattainment requirements for areas not meeting NAAQS and the Prevention of Significant Deterioration program. The 1990 amendments represent the latest in a series of federal efforts to regulate the protection of air quality in the United States. The Clean Air Act allows states to adopt more stringent standards or to include other pollution species. The California Clean Air Act, signed into law in 1988, requires all areas of the state to achieve and maintain the CAAQS by the earliest practical date. The CAAQS tend to be more restrictive than the NAAQS.

The NAAQS and CAAQS are the levels of air quality considered to provide a margin of safety in the protection of the public health and welfare. They are designed to protect "sensitive receptors" most susceptible to further respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

Both California and the federal government have established health-based AAQS for seven air pollutants, which are shown in Table 5.3-5, *Ambient Air Quality Standards for Criteria Air Pollutants.* These pollutants are ozone (O_3), nitrogen dioxide (NO_2), carbon dioxide (CO), sulfur dioxide (SO_2), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead (Pb). In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

Table 5.3-5 Ambient Air Quality Standards for Criteria Air Pollutants

Pollutant	Averaging Time	California Standard [1]	Federal Primary Standard [2]	Major Pollutant Sources
Ozone (O_3)[3]	1 hour	0.09 ppm	*	Motor vehicles, paints, coatings, and solvents.
	8 hours	0.070 ppm	0.070 ppm	
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm	
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm	0.053 ppm	Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads.
	1 hour	0.18 ppm	0.100 ppm	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	*	0.030 ppm	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	1 hour	0.25 ppm	0.075 ppm	
	24 hours	0.04 ppm	0.14 ppm	
Respirable Coarse Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 µg/m^3	*	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	50 µg/m^3	150 µg/m^3	
Respirable Fine Particulate Matter ($PM_{2.5}$)[4]	Annual Arithmetic Mean	12 µg/m^3	12 µg/m^3	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	*	35 µg/m^3	
Lead (Pb)	30-Day Average	1.5 µg/m^3	*	Present source: lead smelters, battery manufacturing and recycling facilities. Past source: combustion of leaded gasoline.
	Calendar Quarter	*	1.5 µg/m^3	
	Rolling 3-Month Average	*	0.15 µg/m^3	
Sulfates (SO_4)[5]	24 hours	25 µg/m^3	No Federal Standard	Industrial processes.

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Table 5.3-5 Ambient Air Quality Standards for Criteria Air Pollutants

Pollutant	Averaging Time	California Standard [1]	Federal Primary Standard [2]	Major Pollutant Sources
Visibility-Reducing Particles	8 hours	ExCo =0.23/km visibility of 10≥ miles	No Federal Standard	Visibility-reducing particles consist of suspended particulate matter, which is a complex mix of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size, and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt.
Hydrogen Sulfide	1 hour	0.03 ppm	No Federal Standard	Hydrogen sulfide (H_2S) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas and can be emitted as the result of geothermal energy exploitation.
Vinyl Chloride	24 hours	0.01 ppm	No Federal Standard	Vinyl chloride (chloroethene), a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites, due to microbial breakdown of chlorinated solvents.

Source: CARB 2016.
Notes: ppm: parts per million; $\mu g/m^3$: micrograms per cubic meter
* Standard has not been established for this pollutant/duration by this entity.
1 California standards for O_3, CO (except 8-hour Lake Tahoe), SO_2 (1 and 24 hour), NO_2, and particulate matter (PM_{10}, $PM_{2.5}$, and visibility-reducing particles) are values that are not to be exceeded. All others are not to be equaled or exceeded. CAAQS are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2 National standards (other than O_3, PM, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The O_3 standard is attained when the fourth-highest, 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standard.
3 On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
4 On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM_{10} standards (primary and secondary) of 150 $\mu g/m^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

Table 5.3-5 Ambient Air Quality Standards for Criteria Air Pollutants

Pollutant	Averaging Time	California Standard [1]	Federal Primary Standard [2]	Major Pollutant Sources

5 On June 2, 2010, a new 1-hour SO_2 standard was established, and the existing 24-hour and annual primary standards were revoked. The 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard, the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

California has also adopted a host of other regulations that reduce criteria pollutant emissions as follows:

- **AB 1493: Pavley Fuel-Efficiency Standards.** Pavley I is a clean-car standard that reduces greenhouse gas (GHG) emissions from new passenger vehicles (light-duty auto to medium-duty vehicles) from 2009 through 2016. In January 2012, CARB approved the Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025.
- **Heavy-Duty (Tractor-Trailer) GHG Regulation.** The tractors and trailers subject to this regulation must either use USEPA SmartWay-certified tractors and trailers or retrofit their existing fleet with SmartWay-verified technologies. The regulation applies primarily to owners of 53-foot or longer box-type trailers, including both dry-van and refrigerated-van trailers, and owners of the heavy-duty tractors that pull them on California highways. These owners are responsible for replacing or retrofitting their affected vehicles with compliant aerodynamic technologies and low rolling resistance tires. Sleeper cab tractors model year 2011 and later must be SmartWay certified. All other tractors must use SmartWay-verified low-rolling-resistance tires. There are also requirements for trailers to have low-rolling-resistance tires and aerodynamic devices.
- **Senate Bill (SB) 1078, SB 107, SB 350, and SB 100: Renewables Portfolio Standards.** A major component of California's Renewable Energy Program is the renewables portfolio standard (RPS) established under SB 1078 (Sher) and SB 107 (Simitian). Under the RPS, certain retail sellers of electricity were required to increase the amount of renewable energy each year by at least 1 percent to reach at least 20 percent by December 30, 2010. In October 2015, SB 350 increases California's renewable electricity procurement goal from 33 percent RPS target by 2020 to 50 percent RPS target by 2030. SB 350 also requires the state to double statewide energy-efficiency savings in electricity and natural gas end uses by 2030. In September 2018, SB 100 sets a 2045 goal of powering all retail electricity solid in California and state agency electricity needs with renewable and zero-carbon resources. SB 100 updates the RPS to ensure that by 2030, at least 50 percent of California's electricity is renewable.
- **California Code of Regulations (CCR), Title 20: Appliance Energy-Efficiency Standards.** The 2006 Appliance Efficiency Regulations (Title 20 of California Code of Regulations [CCR] Sections 1601–1608) were adopted by the California Energy Commission (CEC) on October 11, 2006, and approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally regulated appliances and non-federally regulated appliances. There

have been numerous amendments to the Title 20 Appliance Efficiency Regulations adopted on December 9, 2020, and made effective in 2021 (CEC 2025).

- **24 CCR, Part 6: Building and Energy Efficiency Standards (Energy Code).** Energy conservation standards for new residential and nonresidential buildings adopted by the California Energy Resources Conservation and Development Commission (now the CEC) in June 1977. On August 11, 2021, the CEC adopted the 2022 Building Energy Efficiency Standards, which were subsequently approved by the California Building Standards Commission in December 2021. The 2022 standards went into effect on January 1, 2023, replacing the 2019 standards. The 2022 standards require mixed-fuel, single-family homes to be electric-ready to accommodate replacement of gas appliances with electric appliances. In addition, the new standards also include prescriptive photovoltaic system and battery requirements for high-rise, multifamily buildings (i.e., more than three stories) and noncommercial buildings such as hotels, offices, medical offices, restaurants, retail stores, schools, warehouses, theaters, and convention centers (CEC 2021).
- **24 CCR, Part 11: Green Building Standards Code (CALGreen).** Establishes planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants.[1] The mandatory provisions of CALGreen became effective January 1, 2011, and were last updated in 2022. The 2022 CALGreen update, which was approved as part of the 2022 Energy Code, became effective on January 1, 2023, and provides updates to the residential and nonresidential voluntary measures.

Tanner Air Toxics Act and Air Toxics Hot Spot Information and Assessment Act

Public exposure to TACs is a significant environmental health issue in California. In 1983, the California legislature enacted a program to identify the health effects of TACs and reduce exposure to them. The California Health and Safety Code defines a TAC as “an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health” (17 CCR 93000). A substance that is listed as a hazardous air pollutant pursuant to Section 112(b) of the federal Clean Air Act (42 US Code Section 7412[b]) is a TAC. Under State law, the California EPA, acting through CARB, is authorized to identify a substance as a TAC if it

1 The green building standards became mandatory in the 2010 edition of the code.

is an air pollutant that may cause or contribute to an increase in mortality or serious illness, or may pose a present or potential hazard to human health.

California regulates TACs primarily through Assembly Bill (AB) 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics "Hot Spot" Information and Assessment Act of 1987). The Tanner Air Toxics Act set up a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an "airborne toxics control measure" for sources that emit that TAC. If there is a safe threshold for a substance (i.e., a point below which there is no toxic effect), the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate "toxics best-available control technology" to minimize emissions. To date, CARB has established formal control measures for 11 TACs that are identified as having no safe threshold.

Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High-priority facilities are required to perform a health risk assessment, and if specific thresholds are exceeded, are required to communicate the results to the public through notices and public meetings.

CARB has promulgated the following specific rules to limit TAC emissions:

- **13 CCR Chapter 10 Section 2485.: Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling**. Generally restricts on-road diesel-powered commercial motor vehicles with a gross vehicle weight rating of greater than 10,000 pounds from idling more than five minutes.
- **13 CCR Chapter 10 Section 2480: Airborne Toxic Control Measure to Limit School Bus Idling and Idling at Schools**. Generally restricts a school bus or transit bus from idling for more than five minutes when within 100 feet of a school.
- **13 CCR Section 2477 and Article 8: Airborne Toxic Control Measure for In-Use Diesel-Fueled Transport Refrigeration Units (TRU) and TRU Generator Sets and Facilities Where TRUs Operate**. Regulations established to control emissions associated with diesel-powered TRUs.

CalEnviroScreen and Disadvantaged Communities (Senate Bill 535)

CalEnviroScreen is a mapping tool that helps identify California communities that are most affected by many sources of pollution, and where people are often especially vulnerable to pollution's effects. This tool is used by the California Environmental Protection Agency to determine which communities are considered disadvantaged based on factors like pollution levels, demographics, and human risks. While CalEnviroScreen was originally developed as part of SB 535 and used to identify disadvantaged

communities for the purpose of allocating funding from the State's Cap-and-Trade regulation, its application and scope have expanded over the years. The tool uses environmental, health, and socioeconomic information to produce scores for every census tract in the state. The CalEnviroScreen model is made up of four components – two pollution burden components (exposures and environmental effects) and two population characteristics components (sensitive populations and socioeconomic factors). The four components are further divided into 20 indicators. An indicator is a measure of either environmental condition, in the case of pollution burden indicators, or health and vulnerability factors, in the case of population characteristic indicators.

Exposure indicators are based on the measurements of diverse types of pollution that people may come into contact with. Exposure indicators include:

- Air Quality: Ozone
- Air Quality: $PM_{2.5}$
- Children's Lead Risk from Housing
- Diesel Particular Matter
- Drinking Water Contaminants
- Pesticide Use
- Toxic Releases from Facilities
- Traffic Density

Environmental effects indicators are based on the locations of toxic chemicals in or near communities. Environmental effects indicators include:

- Cleanup Sites
- Groundwater Threats
- Hazardous Waste Generators and Facilities
- Impaired Water Bodies
- Solid Waste Sites and Facilities

Sensitive population indicators measure the number of people in a community who may be more severely affected by pollution because of their age or health. Sensitive population indicators include:

- Asthma
- Cardiovascular Disease
- Low Birth Weight Infants

Socioeconomic factor indicators are conditions that may increase people's stress or make healthy living difficult and cause them to be more sensitive to pollution's effects. Socioeconomic factors include:

- Education Attainment
- Housing Burden
- Linguistic Isolation
- Poverty
- Unemployment

Each census tract receives scores for as many of the 20 indicators as possible, and the scores are then mapped so that different communities can be compared. Percentiles are assigned to each census tract based on the census tract's score in relation to the rest of the state. An area with a high percentile is one that experiences a much higher pollution burden than areas with low scores. For example, if a census tract has an indicator in the 40th percentile, it means that indicator's percentile is higher than 40 percent of the census tracts in the state. CalEnviroScreen also provides a total (or cumulative) score, which is the product of multiplying the 10 pollution burden components by the 10 population characteristics. This total/cumulative score helps contextualize how multiple contaminants from multiple sources affect people, while considering their living conditions (e.g., nonchemical factors such as socioeconomic and health status). Communities that are within the top 25th percentile for total CalEnviroScreen scores are considered disadvantaged communities pursuant to SB 535.

Regional

Yolo-Solano County Air Quality Management District

The YSAQMD is designated by law to adopt and enforce regulations to achieve and maintain ambient air quality standards. The YSAQMD responsibilities include preparing plans for the attainment of ambient air quality standards, adopting and enforcing air pollution rules, issuing permits for and inspecting stationary air pollution sources, responding to citizen complaints, monitoring ambient air quality and meteorological conditions, and implementing state and federal programs and regulations. The YSAQMD has also adopted various rules and regulations that are designed to reduce and control pollutant emissions from project construction and operational activities. The following provisions applicable to the proposed project are summarized as follows:

- **Rule 2.1, Control of Emissions:** The emission of material which may be the cause of air pollution shall be controlled.

- **Rule 2.3, Ringelmann Chart Visible Emissions:** A person shall not discharge into the atmosphere from any single source of emissions whatsoever any air contaminant for a period or periods aggregating more than three in any one hour, which is: (a) As dark or darker in shade as that designated as No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines, or (b) of such opacity as to obscure an observer's view to a degree equal to or greater than smoke, as described in subsection 301.1 a. of this rule.
- **Rule 2.5, Nuisance:** A person shall not discharge from any source such quantities of air contaminants or other material that causes injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which have a natural tendency to cause injury or damage to businesses or property.
- **Rule 2.14, Architectural Coating:** To limit the quantity of VOCs in architectural coating supplied, sold, offered for sale, applied, solicited for application, or manufactured for use within the Air District.
- **Rule 2.19, Particulate Matter Process Emission Rate:** To reduce the amount of particulate matter entrained in the ambient air, or discharge into the ambient air, as a result of human-made fugitive dust sources by requiring actions to prevent, reduce, or mitigate fugitive dust emissions.
- **Rule 3.4, New Source Review:** The purpose of this rule is to provide for the review of new and modified stationary air pollution sources and to provide mechanisms, including emission offsets, by which authorities to construct for such sources may be granted without interfering with the attainment or maintenance of ambient air quality standards.

Local

Climate Action Plan

Rio Vista's existing 2014 Climate Action Plan (CAP) examines the communitywide activities that result in GHG emissions and establishes strategies to help reduce those emissions in existing and future development through both voluntary and mandatory actions. It also considers the local impact of federal and statewide actions to reduce GHG emissions. The CAP identifies how the City will achieve the 2020 communitywide emissions reduction target is 38,027 metric tons of carbon dioxide equivalent per year (MT CO_2e/yr; i.e., 15 percent below 2005 emissions levels) and 2035 communitywide emissions reduction target of 22,816 MT CO_2e/yr (i.e., 49 percent below 2005 emissions levels.

5.3.1.5 EXISTING CONDITIONS

Sacramento Valley Air Basin Conditions

California is divided geographically into air basins for the purpose of managing air resources on a regional basis. An air basin generally has similar meteorological and geographic conditions throughout. The state is divided into 15 air basins. The City of Rio Vista is in the Sacramento Valley Air Basin (SVAB). The following discussion identifies the natural factors in the SVAB that affect air pollution. Air pollutants of concern are criteria air pollutants and TACs. Federal, State, and local air districts have adopted laws and regulations intended to control and improve air quality.

YSAQMD is the regional air quality agency for a portion of the SVAB, which comprises all of Butte, Colusa, Glenn, Placer, Sacramento, Shasta, Sutter, Tehama, Yolo, and Yuba Counties, which make up the southeastern portion of Solano County. Air quality in this area is determined by such natural factors as topography, meteorology, and climate, in addition to the presence of existing air pollution sources and ambient conditions.

Climate and Meteorology

The SVAB is bounded by the North Coast Ranges on the west and northern Sierra Nevada on the east. The intervening terrain is relatively flat. Hot, dry summers and mild, rainy winters characterize the Mediterranean climate of the SVAB. During the year, the temperature may range from 20 to 115 degrees Fahrenheit (°F), with summer highs usually in the 90s and winter lows occasionally below freezing. Average annual rainfall is about 20 inches, and the rainy season generally occurs from November through March.

The prevailing winds are moderate in strength and vary from moist clean breezes from the south to dry winds from the north. The mountains surrounding the SVAB create a barrier to airflow, which can trap air pollutants under certain meteorological conditions. The highest frequency of air stagnation occurs in the autumn and early winter when large high-pressure cells cover the Sacramento Valley. The lack of surface wind during these periods and the reduced vertical flow caused by less surface heating reduces the influx of outside air and allows air pollutants to become concentrated in a stable volume of air. The surface concentrations of pollutants are highest when these conditions are combined with temperature inversions that trap pollutants near the ground. The ozone season in the SVAB (May through October) is characterized by stagnant morning air or light winds with the delta breeze arriving from the southwest in the afternoon. Generally, the evening breeze transports the airborne pollutants to the north out of the SVAB. During about half of the days from July to September, however, a phenomenon called the “Schultz Eddy”

prevents this from occurring. Instead of allowing for the prevailing wind patterns to move north, carrying the pollutants out, the Schultz Eddy causes the wind pattern to circle back to the south. Essentially, this phenomenon causes air pollutants to be blown south toward Vacaville and the surrounding areas. This phenomenon exacerbates the pollution levels in the area and increases the likelihood of violating federal and/or State standards. The eddy normally starts in the afternoon or evening, then dissipates around noon the following day when the delta breeze arrives.

Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardiorespiratory diseases.

Residential areas are considered sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Other sensitive receptors are retirement facilities, hospitals, and schools. Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial, commercial, retail, and office areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, because the majority of these workers tend to stay indoors most of the time. In addition, the workforce is generally the healthiest segment of the population.

Disadvantaged Communities

According to the Office of Environmental Health Hazard Assessment (OEHHA) CalEnviroScreen 4.0 Map, the City of Rio Vista is in Census Tract 6095253500. This area shows an average pollution indicator percentile of 77.76 percent based on the CalEnviroScreen indicators (e.g., exposure, environmental effects, population characteristics, socioeconomic factors) and has a population of 10,676 people (OEHHA 2021). The CalEnviroScreen data indicates approximately 86 in 10,000 people in the city's census tract visited an emergency facility for asthma-related health issues. This rate places the city's census tract in the 23rd percentile, meaning the asthma rate in this census tract is higher than 23 percent of the census tracts in the state.

Census Tract 6095253500 is within the top 25 percent of total CalEnviroScreen percentiles throughout the state. It is burdened by exposure to ozone but overall is subject to relatively low levels of pollution and underlying conditions. Census Tract 6095253500 is in the 35th percentile for ozone, meaning this census tract has higher exposure to ozone than 35 percent of census tracts in the state. However, the census tract is not heavily burdened by socioeconomic factors, with a Population Characteristics Percentile of 71. The total CalEnviroScreen percentile is 77.76, which falls within the top 25 percent, meaning the most burdened by pollution and socioeconomic factors of all CalEnviroScreen scores statewide. Since this census tract is within the top 25 percent in scoring, according to the CalEnviroScreen methodology, it is considered a disadvantaged community pursuant to SB 535.

5.3.2 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:

AQ-1 Conflict with or obstruct implementation of the applicable air quality plan.

AQ-2 Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or State AAQS.

AQ-3 Expose sensitive receptors to substantial pollutant concentrations.

AQ-4 Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

5.3.2.1 YOLO-SOLANO AIR QUALITY MANAGEMENT DISTRICT THRESHOLDS

The analysis of the proposed project's air quality impacts follows the guidance and methodologies recommended in YSAQMD's *Handbook for Assessing and Mitigating Air Quality Impacts* (Handbook) and the significance thresholds on YSAQMD's website (YSAQMD 2007, 2024). CEQA allows the significance criteria established by the applicable air quality management or air pollution control district to be used to assess impacts of a project on air quality. YSAQMD has established regional thresholds of significance. In addition to the regional thresholds, projects are subject to the AAQS.

Criteria Air Pollutant Emissions and Precursors

Regional Thresholds

To assist local jurisdictions in the evaluation of air quality impacts under CEQA, the YSAQMD has published a guidance document for the preparation of the air quality portions of environmental documents that include thresholds of significance to be used in evaluating land use proposals. Thresholds of significance are based on a source's projected impacts and are a basis from which to apply mitigation measures. YSAQMD's CEQA thresholds have also been used to determine air quality impacts in this analysis. According to the YSAQMD, an air quality impact is considered significant if the proposed project would violate any ambient air quality standard, contribute substantially to an existing or projected air quality violation, or expose sensitive receptors to substantial pollutant concentrations.

The YSAQMD's established thresholds of significance for air quality for construction and operational activities of land use development projects are shown in Table 5.3-6.

Table 5.3-6 YSAQMD Significance Thresholds

Air Pollutant	Thresholds of Significance
ROG	10 tons/year
NOx	10 tons/year
CO	Violation of a state ambient air quality standard for CO
SO_2	--
PM_{10}	80 pounds/day
$PM_{2.5}$	--

Source: CARB 2005.

By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size, by itself, to result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's individual emissions exceed its identified significance thresholds, the project would be cumulatively considerable. Projects that do not exceed significance thresholds would not be considered cumulatively considerable.

5.3.3 Proposed General Plan Goals and Policies

The following goals and policies from the proposed General Plan are applicable to air quality.

Open Space and Conservation Element

- **Goal OSC-3:** To utilize energy and water resources wisely, and to promote conservation programs for lower energy and water consumption in the City.
  - **Policy OSC-13:** Projects greater than five acres in size and projects anticipated to be constructed over a period of two years or more shall prepare a site-specific construction pollutant mitigation plan prior to City issuance of grading or building permits. Such plan shall be completed consistent with Yolo Solano Air Quality Management District (YSAQMD) standards and practices and to the satisfaction of the City and shall contain appropriate requirements and standards to ensure pollutant health risks do not exceed YSAQMD risk thresholds.

Land Use and Community Character Element

- **Goal LU-1:** To create a Downtown and Waterfront that is a vibrant, highly desirable place for residents, businesses, and visitors.
- **Goal LU-2:** To maintain and enhance Rio Vista while providing a safe, family-friendly small-town character.
- **Goal LU-4:** To create a community with a variety of housing types that offer choices for Rio Vista residents and create complete, livable neighborhoods.
- **Goal LU-6:** To encourage the growth and development of new retail services and businesses, employment, restaurants/dining establishments, and entertainment uses in Rio Vista to meet the needs of the community and visitors to the City.
- **Goal LU-7:** To welcome new businesses and job opportunities in the City, while ensuring compatibility with surrounding uses and planned new uses.
  - **Policy LU-1:** Promote the development of compact, complete residential neighborhoods by encouraging the location of services and amenities within walking and biking distance of residences.
  - **Policy LU-3:** Encourage new residential development to incorporate design features that promote walking and connectivity between blocks and adjacent neighborhoods.

- **Policy LU-6:** Encourage development in the North Waterfront District to be a mix of uses including residential, commercial, and public park space along the waterfront.
- **Policy LU-7:** New blocks created in the North Waterfront district shall be of a size and scale consistent with the existing urban form of Downtown and as described in the Waterfront Specific Plan.
- **Policy LU-9:** Promote pedestrian-oriented retail and mixed use development in Neighborhood Mixed Use, Downtown, and the Waterfront areas.

Mobility and Circulation Element

- **Goal MC-1:** A circulation and mobility system that prioritizes safety and supports and accommodates all modes of transportation.
- **Goal MC-2:** A network of roads and trails that balances local mobility needs of community members with the needs of regional circulation/commuters passing through Rio Vista.
- **Goal MC-3:** A citywide circulation system that is adequate and evolves to meet the needs of the community over time.
  - **Policy MC-15:** In new construction, provide mid-block pedestrian crossings and off-street pedestrian paths in areas with high pedestrian traffic to create more direct walking routes.

Parks and Recreation Element

- **Goal PR-1:** To provide well designed parks that are accessible, attractive, meet recreational needs of the community and enhance neighborhood identity and character.
  - **Policy PR-9:** Create an integrated trail, bikeway, and open space network within the City that links parks and recreation areas, schools, downtown, the waterfront, and residential neighborhoods. These should also provide connections to regional trails, bikeways, and open space areas.

5.3.4 Environmental Impacts

5.3.4.1 METHODOLOGY

Impacts related to air quality resulting from implementation (future construction and operation) of the proposed General Plan Update are discussed below. Air quality impacts were assessed in accordance with methodologies recommended by the YSAQMD. The analysis focuses on the extent to which the 2045 General Plan Update would conflict with

regional and local air quality planning and regulatory compliance efforts. Ozone precursors and particulate matter emitted anywhere in the SVAB can affect air quality throughout the region; thus, any increases in ozone precursors and particulate matter associated with the General Plan Update are inherently cumulative in nature. In contrast, the effects of diesel particulate matter, TAC, or odor emissions are localized to the vicinity of their specific sources, and the cumulative context for these emissions sources would include existing and proposed future development within the Planning Area. The impact analysis is based on calculations of the criteria air pollutant and ozone precursor emissions that would result from projected future growth at buildout of the General Plan Update.

Compared with buildout of the City of Rio Vista under the existing General Plan 2001, buildout of the proposed General Plan Update would allow for an additional 2,467 residential units, and an increase of 142 acres of nonresidential use. Where criteria air pollutant quantification was required, emissions were modeled using the California Emissions Estimator Model (CalEEMod), version 2022.1.28. CalEEMod is a statewide land use emissions computer model designed to quantify potential criteria pollutant emissions associated with operations from a variety of land use projects. The net increase in criteria air pollutant emissions for which the region is in nonattainment of ambient air quality standards (respirable and fine particulate matter, PM_{10} and $PM_{2.5}$, respectively) and ozone precursors (ROG and NOx) generated by the General Plan Update were estimated based on CalEEMod default vehicle miles traveled (VMT) and General Plan land use buildout assumptions. Operational air pollutant emissions calculations employed land uses and acreage provided by the City coupled with the median density/intensity standards contained in the City's Municipal Code. (Density/intensity standards indicate how much development is allowed on a single plot of land. A maximum permitted floor-area ratio (FAR) is specified for nonresidential uses. FAR refers to the ratio of building floor space compared to the square footage of the site.)

It is noted here that following completion of the original citywide emissions modeling effort for the proposed General Plan Update (Table 5.3-7), the City of Rio Vista made a minor adjustment to the anticipated land use buildout assumptions. Specifically, the revised land use scenario includes approximately 555 fewer residential units than were originally modeled and approximately 11 additional acres of commercial and industrial land uses. Although the revised land use assumptions slightly shift the overall development balance in the city, the originally modeled scenario remains a valid and conservative estimate of potential air quality impacts. The net reduction of 555 residential units represents a meaningful decrease in potential sources of mobile emissions (e.g., residential vehicle

trips) and area source emissions (e.g., landscaping, consumer product use). While the increase in commercial and industrial acreage may lead to marginally higher emissions associated with those sectors (e.g., delivery vehicle traffic, energy usage), such uses tend to have lower overall emissions per acre than residential development when evaluated on a citywide scale, particularly when considering indirect emissions such as VMT. Furthermore, the original modeling effort was designed to evaluate a maximum reasonable development scenario based on the buildout of the land use map. As such, the shift in land use assumptions does not introduce new land use types, nor does it substantially increase overall development intensity relative to the modeled scenario. On balance, the revised land use scenario is not expected to result in materially greater emissions than those previously modeled.

The estimated daily PM_{10} emissions and annual average NOx and ROG operational emissions from the CalEEMod modeling results are compared to the YSAQMD thresholds of significance.

The analysis also evaluates the potential for exposure of sensitive receptors to substantial pollutant concentrations and to excessive odors according to guidance from YSAQMD (YSAQMD 2007).

Impact 5.3-1: Implementation of the proposed project would not conflict with or obstruct implementation of YSAQMD's air quality plans. [Threshold AQ-1]

As part of its enforcement responsibilities, the USEPA requires each state with nonattainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the federal standards. The SIP must integrate federal, State, and local plan components and regulations to identify specific measures to reduce pollution in nonattainment areas, using a combination of performance standards and market-based programs. Similarly, under State law, the Clean Air Act requires an air quality attainment plan to be prepared for areas designated as nonattainment regarding the federal and State ambient air quality standards. Air quality attainment plans outline emissions limits and control measures to achieve and maintain these standards by the earliest practical date.

As previously described, the YSAQMD is the agency responsible for enforcing many federal and State air quality requirements and for establishing air quality rules and regulations. The YSAQMD attains and maintains air quality conditions in Solano County. They achieve this through a comprehensive program of planning, regulation,

enforcement, technical innovation, and promotion of the understanding of air quality issues. As part of this effort, the YSAQMD has developed input to the SIP. The 2017 Sacramento Regional 2008 8-Hour Ozone Attainment and Reasonable Further Progress Plan (including 2018 updates), the PM_{10} Implementation/Maintenance Plan and Re-Designation Request (2010), and $PM_{2.5}$ Implementation/Maintenance Plan and Re-designation Request for Sacramento $PM_{2.5}$ Nonattainment Area (2013) constitute the current SIP for Solano County and include the YSAQMD's plans and control measures for attaining air quality standards. These air quality attainment plans are a compilation of new and previously submitted plans, programs (e.g., monitoring, modeling, permitting), district rules, State regulations, and federal controls describing how the state will attain ambient air quality standards.

The proposed General Plan Update, and associated policy provisions, support the air quality planning efforts of the YSAQMD, as they include applicable pollutant control mechanisms. For instance, the General Plan Update promotes compact, mixed-use development patterns that reduce the need for automobile travel and thus reduce criteria air pollutants. Further, Land Use and Community Character Element Implementation Program LU-4 incentivizes development on underutilized land, which minimizes sprawl and shortens commuting distances, indirectly reducing VMT and thereby reducing criteria air pollutants. The proposed General Plan Update seeks to reduce the environmental impact (including air quality) of land use development by increasing the viability of walking, biking, and transit. The proposed General Plan Update supports the development of projects that facilitate and enhance the use of alternative modes of transportation, including pedestrian-oriented retail and activity centers and dedicated bicycle lanes and paths.

For example, proposed Land Use and Community Character Element Policy LU-1 seeks the development of compact, complete residential neighborhoods by encouraging the location of services and amenities within walking and biking distance of residences. Policy LU-3 would encourage new residential development to incorporate design features that promote walking and connectivity between blocks and adjacent neighborhoods and in a similar context, Policy LU-6 would encourage development in the North Waterfront District to be a mix of uses, including residential, commercial, and public park space along the waterfront. Proposed Policy LU-9 would promote pedestrian-oriented retail and mixed-use development in Neighborhood Mixed Use, Downtown, and the Waterfront areas. The Mobility and Circulation Element focuses on enhancing active transportation infrastructure, such as bicycle lanes and pedestrian pathways, and supports alternatives to single-occupancy vehicle trips. Additionally, this element of the proposed General Plan

Update seeks to collaborate with regional entities like the Solano Transportation Authority with the intent of improving public transit access and reducing vehicular reliance, thus reducing criteria air pollutants. By improving public transit options, the proposed General Plan aims to shift commuters from private vehicles to mass transit, reducing congestion and emissions. The Open Space and Resource Conservation Element integrates air quality considerations in the conservation of natural resources. The policy provisions in this element emphasize reducing emissions through energy efficiency in new developments and preserving open spaces, which serve as carbon sinks. Additionally, this element encourages urban greening, such as tree planting, which directly contributes to mitigating urban heat islands and improving air quality. Most importantly, Open Space and Resource Conservation Element Policy OSC-13 requires coordination with the YSAQMD, ensuring that development projects adhere to emissions-reduction targets and other air quality regulations.

These proposed policy provisions demonstrate the General Plan's alignment with the YSAQMD's goals to improve air quality by reducing vehicular emissions, supporting sustainable development, and enhancing green infrastructure. The policies and programs of the proposed General Plan Update collectively create a framework for Rio Vista to grow in a manner that actively supports air quality improvements by reducing emissions from transportation, encouraging sustainable land use, and integrating green infrastructure. The proposed General Plan Update is consistent with YSAQMD's air quality planning efforts and the proposed project would not conflict with or obstruct implementation of YSAQMD's air quality plans.

Level of Significance Before Mitigation: Impact 5.3-1 would be less than significant.

Mitigation Measures

No mitigation measures are required.

Impact 5.3-2: Short-term construction activities associated with the proposed project would result in a cumulatively considerable net increase of criteria pollutants for which the project region is in nonattainment under applicable federal or State ambient air quality standards. [Threshold AQ-2]

The General Plan Update would accommodate future development for residential, commercial, recreational, and industrial uses. The future development and other physical changes that could result from the implementation of the General Plan Update would generate construction-related emissions of criteria air pollutants and ozone precursors,

including ROG, NO_X, PM_{10}, and $PM_{2.5}$ from site preparation (e.g., excavation, clearing), off-road equipment, material delivery, worker commute trips, and other activities (e.g., building construction, asphalt paving, application of architectural coatings). Typical construction activities that could occur with land use development include use of all-terrain forklifts, cranes, pick-up and fuel trucks, compressors, loaders, backhoes, excavators, dozers, scrapers, pavement compactors, welders, concrete pumps, concrete trucks, and off-road haul trucks, as well as other diesel-powered equipment as necessary. Fugitive dust emissions of PM_{10} and $PM_{2.5}$ would be associated primarily with site preparation and grading and would vary as a function of the soil silt content, soil moisture, wind speed, acreage of disturbance, and mobile sources. Emissions of O_3 precursors would occur from the exhaust of construction equipment and on-road vehicles. Paving and the application of architectural coatings would also result in off-gas emissions of ROG. PM_{10} and $PM_{2.5}$ would also be emitted from off-road equipment and vehicle exhaust.

Construction activities associated with the proposed General Plan Update would occur over the buildout horizon of the plan, causing short-term emissions of criteria air pollutants. For the proposed General Plan Update, which is a broad policy plan, it is not possible to determine whether the scale and phasing of individual projects would exceed the YSAQMD's thresholds of criteria pollutants of concern, as identified in Table 5.3-6, due to project-level variability and uncertainties related to future individual projects in terms of detailed site plans, construction schedules, equipment requirements, etc., which are not currently determined or even proposed. Nonetheless, depending on how development proceeds, construction-generated emissions associated with the proposed General Plan Update could potentially exceed YSAQMD thresholds of significance. Overall, air quality emissions related to construction must be addressed on a project-by-project basis, and information regarding specific development projects, soil types, and the locations of receptors would be needed to quantify the level of impact associated with construction activity.

As typically required for new discretionary development projects, the City requires that development applications be reviewed against YSAQMD quantification methodologies and significant protocols and incorporate, as conditions of approval or mitigation measures, YSAQMD-recommended pollutant-reduction measures if necessary to reduce project pollutants to levels below significance thresholds. Specifically, proposed General Plan Update Policy OSC-13 would require application of the analysis methods and significance thresholds recommended by the YSAQMD to determine a future project's air quality impacts. The YSAQMD has promulgated methodology protocols for the

preparation of air quality analyses. For instance, the YSAQMD has adopted thresholds of significance depicting the approximate level of construction-generated emissions that would result in a potentially significant impact (i.e., violation of an ambient air quality standard) for each pollutant of concern. The significance criteria established by the YSAQMD may be relied upon to make a determination of impact significance level. In addition, the YSAQMD recommends appropriate emissions modeling input parameters for the Solano County region in addition to other recommended procedures for evaluating potential air quality impacts during the environmental review process consistent with CEQA requirements.

Projects estimated to exceed YSAQMD significance thresholds are required to implement mitigation measures to reduce air pollutant emissions as much as feasible. Such measures would be required to be implemented and could include, but are not limited to, the requirement that all construction equipment employ the use of the most efficient diesel engines available, which are able to reduce NO_x, PM_{10}, and $PM_{2.5}$ emissions by 60 to 90 percent (e.g., USEPA-classified Tier 3 and/or Tier 4 engines), and/or that construction equipment be equipped with diesel particulate filters. Other YSAQMD-recommended air pollutant reduction measures include, but are not limited to, the following:

- The fueling of all off-road and portable diesel-powered equipment with CARB-certified motor vehicle diesel fuel (non-taxed version suitable for use off-road).
- The prohibition of all on- and off-road diesel equipment from idling for more than five minutes and the posting of signs in the designated queuing areas and/or job sites to remind drivers and operators of the five-minute idling limit.
- The prohibition of diesel idling within 1,000 feet of sensitive receptors.
- The prohibition of locating staging and queuing areas within 1,000 feet of sensitive receptors.
- The use of electrified equipment when feasible.
- The substitution of gasoline-powered equipment in place of diesel-powered equipment, where feasible.
- The use of alternatively fueled construction equipment on-site where feasible, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane, or biodiesel.
- The requirement that contractors re-power equipment with the cleanest engines available.
- The requirement that construction equipment use installed California-Verified Diesel Emission Control Strategies. These strategies are listed at: http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm.

- The requirement that the contractor prepare a dust control plan when the disturbed area is more than one acre.
- The reduction in the number of disturbed areas where possible.
- The use of water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site, and the requirement to increase watering frequency whenever wind speeds exceed 15 miles per hour, using reclaimed (non-potable) water whenever possible.
- The spraying of all dirt stock-pile areas daily, as needed.
- The requirement that all roadways, driveways, sidewalks, etc. be paved as soon as possible, with building pads laid as soon as possible after grading unless seeding or soil binders are used.
- The requirement to show all fugitive dust mitigation measures on grading and building plans.
- The requirement that the contractor or builder designate a person or persons to monitor the fugitive dust emissions and enhance the implementation of the measures as necessary to minimize dust complaints, reduce visible emissions below 20 percent opacity, and prevent transport of dust off-site.

Furthermore, all development projects in Rio Vista are subject to YSAQMD rules and regulations adopted to reduce air pollutant emissions. As described, proposed General Plan Update Policy OSC-13 would require application of the analysis methods and significance thresholds recommended by the YSAQMD to determine a future project's air quality impacts. YSAQMD Rule 2.3, *Visible Emissions*, states that no person shall discharge into the atmosphere from any single source of emissions whatsoever any air contaminant for a period or periods aggregating more than three in any one hour, which is: (a) As dark or darker in shade as that designated as No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines, or (b) Of such opacity as to obscure an observer's view to a degree equal to or greater than smoke. Rule 2.5, *Nuisance*, states that no person shall discharge from any source whatsoever such quantities of air contaminants or other material which causes injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause to have a natural tendency to cause injury or damage to businesses or property. Rule 2.14, *Architectural Coating*, requires a limit on the quantity of VOCs in architectural coating supplied, sold, offered for sale, applied, solicited for application, or manufactured for use within the county. Rule 2.19, *Fugitive Dust*, requires the reduction of the amount of particulate matter entrained in the ambient air, or discharge into the ambient air, as a

result of human-made fugitive dust sources by requiring actions to prevent, reduce, or mitigate fugitive dust emissions.

While the YSAQMD has promulgated methodology protocols for the preparation of air quality analyses, and future development projects allowed under the proposed General Plan Update that are projected to exceed YSAQMD significance thresholds are required to implement mitigation measures to reduce air pollutant emissions as much as feasible, YSAQMD significance thresholds may still be exceeded as a result of construction activities allowed under the proposed General Plan Update. Since it cannot be guaranteed that construction of future projects allowed under the proposed General Plan Update would generate air pollutant emissions below YSAQMD significance thresholds due to the programmatic and conceptual nature of the proposed General Plan Update and uncertainties related to future individual projects, this is considered a significant impact. As such, due to nonattainment status for ozone and particulate matter (PM_{10}, and $PM_{2.5)}$, construction activities associated with implementation of the General Plan Update may result in adverse air quality impacts to surrounding land uses and may contribute to the existing air quality condition in the city. The General Plan Update has been prepared to include policies and actions to address and mitigate impacts at the plan level. Policies included in the General Plan Update would reduce emissions from construction.

For instance, implementation of Policy OSC-13 could reduce emissions of ROG, NOx, and PM_{10} associated by most future construction activities to a less-than-significant level through compliance with YSAQMD's recommended thresholds and application of applicable mitigation measures. Proposed General Plan Update Policy OSC-13 would additionally reduce future construction emissions under the proposed General Plan by requiring construction contractors to use Tier 4 engines and exhaust filters, which significantly reduce NO_x, ROG, $PM_{10,}$ and $PM_{2.5}$ emissions, when necessary to reduce projected construction emissions to levels below significance thresholds.

However, at this programmatic stage, the City cannot guarantee that implementing these measures would be sufficient to fully mitigate construction emissions for all projects in all scenarios. There are no additional plan-level measures available that would address this impact. For the vast majority of development projects implemented under the General Plan Update, compliance with existing State and federal regulations, as well as compliance with proposed General Plan Update policies and actions would minimize potential adverse air emissions; however, due to the level of uncertainty regarding the specific project types and the lack of detailed development plans at this programmatic level of analysis, it cannot be concluded that all impacts would be minimized in a manner consistent with YSAQMD's guidance. Individual projects under the General Plan Update

may involve unusual use types, locations, or design features that cannot be anticipated at this city-wide planning stage. Additional measures to minimize unique, project-specific impacts may be able to be identified at the time of environmental review for these individual projects; however, the measures cannot be identified at this time, nor can the City guarantee that such measures will, in fact, be available and feasible for all project scenarios. Therefore, implementation of the proposed General Plan Update could result in potentially significant construction-related regional air impacts.

Level of Significance Before Mitigation: Impact 5.3-2 would be potentially significant.

Mitigation Measures

There are no feasible mitigation measures.

Level of Significance After Mitigation: Impact 5.3-2 would remain significant and unavoidable.

Impact 5.3-3: Development under the proposed project would result in a cumulatively considerable net increase of criteria pollutants for which the project region is in nonattainment under applicable federal or State AAQS. [Thresholds AQ-2]

The proposed General Plan Update would accommodate new development that would operate through the planning horizon year. New residential, commercial, industrial, and recreational development facilitated by the proposed General Plan Update would result in long-term area-, energy-, and mobile-source emissions. Area source emissions are the combination of many small emission sources that include use of outdoor landscape maintenance equipment, use of consumer products, such as cleaning products, use of fireplaces and hearths, and periodic reapplication of architectural coatings. Criteria pollutants generated from energy sources are principally from the on-site use of natural gas and other heating fuels; electricity consumption is not included in energy source emissions as those potential emissions would be generated as the result of the operation of an electricity-generation facility, which may or may not be within the same air basin and under the same attainment status as the end-use. Mobile source emissions result from the vehicle activity associated with the operation of a given land use development project.

It should be noted that the proposed General Plan Update would not itself authorize specific development to occur within the city. Future development projects would be subject to the City's standard CEQA review process and would be required to assess project-specific emissions in relation to the YSAQMD significance thresholds. Although

specific project-level information for potential future development is not available at this time and the estimation of emissions resulting from future development would be speculative, anticipated average daily emissions were quantified and are presented in Table 5.3-7 to provide an estimate of the potential overall area, energy, and mobile source emissions resulting from the proposed General Plan Update based on the calculation methodology provided in Section 5.3.4.1, *Methodology*.

Table 5.3-7 Operational Criteria Air Pollutant

	Pollutant					
Emission Source	**ROG**	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Proposed General Plan Update Buildout Daily Emissions (Pounds per Day)						
Mobile	979.00	1,143.00	7,109.00	22.40	142,855.00	14,562.00
Area	1,318.00	15.50	1,808.00	0.10	2.68	2.02
Energy	18.10	326.00	253.00	1.97	25.00	25.00
Total	**2,315.10**	**1,484.50**	**9,170.00**	**24.47**	**142,882.68**	**14,589.02**
YSAQMD Significance Threshold	-	-	-	-	80 pounds/ day	-
Exceeds YSAQMD Daily Threshold?	No	No	No	No	Yes	No
Proposed General Plan Update Buildout Total Annual Emissions (Tons per Year)						
Mobile	134.00	152.00	886.00	2.86	18,496.00	1,887.00
Area	216.00	1.40	163.00	0.01	0.24	0.18
Energy	3.30	59.40	46.20	0.36	4.56	4.56
Total	**353.30**	**212.80**	**1,095.20**	**3.23**	**18,500.80**	**1,891.74**
YSAQMD Significance Threshold	10 tons/ year	10 tons/ year	-	-	-	-
Exceeds YSAQMD Daily Threshold?	Yes	Yes	No	No	No	No
Existing General Plan 2001 Buildout Daily Emissions (Pounds per Day)						
Mobile	969.00	1,587.00	6,963.00	18.80	85,349.00	8,712.00
Area	853.00	10.10	1,156.00	0.07	1.75	1.32
Energy	12.70	230.00	180.00	1.39	17.60	17.60
Total	**1,834.70**	**1,827.10**	**8,299.00**	**20.26**	**85,368.35**	**8,730.92**
YSAQMD Significance Threshold	-	-	-	-	80 pounds/ day	-
Exceeds YSAQMD Daily Threshold?	No	No	No	No	Yes	No
Existing General Plan 2001 Buildout Total Annual Emissions (Tons per Year)						
Mobile	129.00	206.00	882.00	2.43	10,962.00	1,120.00
Area	140.00	0.91	104.00	0.01	0.16	0.12

Table 5.3-7 Operational Criteria Air Pollutant

Emission Source	Pollutant					
	ROG	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Energy	3.32	41.90	32.80	0.25	3.21	3.21
Total	**272.32**	**248.81**	**1,018.80**	**2.69**	**10,965.37**	**1,123.33**
YSAQMD Significance Threshold	10 tons/ year	10 tons/ year	-	-	-	-
Exceeds YSAQMD Daily Threshold?	Yes	Yes	No	No	No	No
Daily Emissions (Pounds per Day) Difference						
Mobile	+10.00	-444.00	+146.00	+3.60	+57,506.00	+5,850.00
Area	+465.00	+5.40	+652.00	+0.03	+0.93	+0.70
Energy	+5.40	+96.00	+73.00	+0.58	+7.40	+7.40
Total	**+480.40**	**-342.60**	**+871.00**	**+4.21**	**+57,514.33**	**+5,858.10**
YSAQMD Significance Threshold	-	-	-	-	80 pounds/ day	-
Exceeds YSAQMD Daily Threshold?	No	No	No	No	Yes	No
Total Annual Emissions (Tons per Year) Difference						
Mobile	+5.00	-54.00	+4.00	+0.43	+7,534.00	+767.00
Area	+76.00	+0.49	+59.00	0.00	+0.08	+0.06
Energy	-0.02	+17.50	+13.40	+0.11	+1.35	+1.35
Total	**+80.98**	**-36.01**	**+76.40**	**+0.54**	**+7,535.43**	**+768.41**
YSAQMD Significance Threshold	10 tons/ year	10 tons/ year	-	-	-	-
Exceeds YSAQMD Daily Threshold?	Yes	Yes	No	No	No	No

Source: CalEEMod version 2022.1.1.28 Refer to Appendix 5.3-1, Attachment A and Attachment B for Model Data Outputs.

Notes: Emission projections are predominately based on CalEEMod model defaults for Solano County, site acreage provided by the City, and median building square footage and dwelling units allowed per information in the City's General Plan Land Use Element. Following completion of the original citywide emissions modeling effort for the proposed General Plan Update, the City of Rio Vista made a minor adjustment to the anticipated land use buildout assumptions. Specifically, the revised land use scenario includes approximately 555 fewer residential units than were originally modeled and approximately 11 additional acres of commercial and industrial land uses. General Plan buildout emission projections remain a valid and conservative estimate. The net reduction of 555 residential units represents a meaningful decrease in potential sources of mobile emissions (e.g., residential vehicle trips) and area source emissions (e.g., landscaping, consumer product use). While the increase in commercial and industrial acreage may lead to marginally higher emissions associated with those sectors (e.g., delivery vehicle traffic, energy usage), such uses tend to have lower overall emissions per acre than residential development when evaluated on a citywide scale, particularly when considering indirect emissions such as VMT. Furthermore, the shift in land use assumptions does not introduce new land use types, nor does it substantially increase overall development intensity relative to the modeled scenario. On balance, the revised land use scenario is not expected to result in materially greater emissions than those previously modeled.

As shown in Table 5.3-7, most criteria air pollutant emissions projected to be generated at buildout of the proposed General Plan Update would be higher than projected emissions at existing General Plan 2001 buildout. Buildout of the proposed General Plan Update would allow for an additional 2,467 residential units, and an additional 88 acres of commercial space compared with the existing General Plan 2001 buildout and the more typical fleet mix associated with these land uses would result in increases of the other pollutants.

The General Plan Update does propose several policy provisions that would assist in reducing the generation of criteria air pollutants from mobile sources, the highest emitter of criteria air pollutants. For instance, proposed Land Use and Community Character Element Policy LU-1 seeks the development of compact, complete residential neighborhoods by encouraging the location of services and amenities within walking and biking distance of residences. Policy LU-3 would encourage new residential development to incorporate design features that promote walking and connectivity between blocks and adjacent neighborhoods and in a similar context, Policy LU-6 would encourage development in the North Waterfront District to be a mix of uses, including residential, commercial, and public park space along the waterfront. Proposed Policy LU-9 would promote pedestrian-oriented retail and mixed-use development in Neighborhood Mixed Use, Downtown, and the Waterfront areas. The promotion of mixed-use development contributes to less dependency on automobiles, a source of criteria air pollutants. Mobility and Circulation Element Policies MC-2, MC-4, and MC-14 propose to promote the development of bikeways, sidewalks, pedestrian pathways, and multiuse paths that connect residential neighborhoods with other neighborhoods, schools, employment centers, commercial centers and public open space, and that separate bicyclists, skateboarders, and pedestrians from vehicular traffic whenever possible. Proposed Policy MC-15 seeks to ensure that bicycle and pedestrian facilities follow logical routes providing connections between transportation nodes and land uses, including bicycle and pedestrian connections to transit stops, buses that can accommodate bicycles, and park-and-ride lots, so that the pedestrian facilities serve the transportation needs of residents, and are not constructed as “sidewalks to nowhere.” Further, Policy MC-16 seeks to ensure that the City’s circulation network will accommodate all anticipated and potential modes of transportation, including small personal electric vehicles ranging in size up to golf carts. Additionally, Parks and Recreation Policy PR-9 proposes to create an integrated trail, bikeway, and open space network in the city that links parks and recreation areas, schools, downtown, the waterfront, and residential neighborhoods.

Development projects accommodated by the proposed General Plan Update would be analyzed on a case-by-case basis when detailed information regarding operational activities is known and, where applicable, projects will be required to implement mitigation to reduce operational emissions. Future projects would be subject to the proposed General Plan Update policies identified above, as well as YSAQMD and State rules and regulations, including, but not limited to, those identified in Section 5.3.1.4, *Regulatory Background*.

Nonetheless, due to the uncertainties discussed above, the reductions that may be achieved through implementation of General Plan Update policies cannot be assumed to be sufficient to reduce operational emissions to meet the YSAQMD's thresholds for all projects and in instances where concurrent projects may combine to exceed thresholds. Therefore, emissions associated with the project could exceed the YSAQMD significance thresholds. The proposed project has been designed to include policies and actions to address and mitigate impacts. Policies included in the General Plan Update would reduce emissions of criteria air pollutants in Rio Vista but cannot be assumed to be sufficient to reduce operational emissions to meet the YSAQMD thresholds. There are no additional plan-level measures available that would reduce impacts from long-term operational-related emissions. All feasible operational emissions-reduction measures have been incorporated into the General Plan Update through the inclusion of the policies discussed above. There could be additional project-specific mitigation measures applied to specific future development allowed under the General Plan Update to reduce long-term operational-generated emissions of air pollutants to levels below the YSAQMD's thresholds of significance. However, the nature, feasibility, and effectiveness of such project-specific mitigation cannot be determined at this time. As such, the City cannot assume that mitigation would be available and implemented such that all future operational-related emissions of air pollutants would be reduced to less-than-significant levels. Furthermore, as shown by Table 5.3-7, all criteria air pollutant emissions at buildout of the proposed 2045 General Plan Update, with the exception of NO_x, would be higher than projected emissions at existing General Plan 2001 buildout. As such, implementation of the proposed General Plan Update could result in potentially significant long-term regional air quality impacts.

Level of Significance Before Mitigation: Impact 5.3-3 would be potentially significant.

Mitigation Measures

There are no feasible mitigation measures.

Level of Significance After Mitigation: Impact 5.3-3 would remain significant and unavoidable.

Impact 5.3-4: The proposed project would expose sensitive receptors to substantial pollutant concentrations. [Threshold AQ-3]

Sensitive receptors are defined as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over age 65, children under age 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis.

According to California's SB 535, the City of Rio Vista is considered a disadvantaged community due to its designation as such based on the CalEnviroScreen tool, *CalEnviroScreen and Disadvantaged Communities (Senate Bill 535)*, which identifies areas disproportionately burdened by environmental pollution and other factors impacting public health, meaning that residents of Rio Vista are likely to experience higher levels of environmental hazards compared to other communities in California.

Proposed General Plan

Construction-Generated Air Contaminants

Construction associated with the proposed project would result in temporary emissions of ROG, NOx, CO, PM_{10}, $PM_{2.5}$, and the TAC, DPM. As previously described, TACs are a defined set of airborne pollutants that may pose a present or potential hazard to human health. Sources of the TAC, DPM, during construction activities include off-road construction vehicle and equipment use and on-road vehicle use for material and soil hauling. For construction activity, DPM is the primary TAC of concern. Identification of potential impacts to sensitive receptors resulting from individual project-generated TACs would require project-specific information for future individual land use development projects that is not currently known. Therefore, assessment of future development projects facilitated by the proposed General Plan Update that would be subject to CEQA would undergo their own review of potential construction-related localized impacts and identify appropriate and feasible mitigation to implement to reduce potentially significant impacts. The amount to which the receptors are exposed (a function of concentration and duration of exposure) is the primary factor used to determine health risk (i.e., potential exposure to TAC emission levels that exceed applicable standards). Health-related risks

associated with diesel-exhaust emissions are primarily linked to long-term exposure and the associated risk of contracting cancer. Concentrations of mobile-source diesel PM emissions are typically reduced by 70 percent at a distance of approximately 500 feet (CARB 2005). In the case of most construction projects allowed under the proposed 2045 General Plan Update, duration would be short-term, lasting less than one year. Construction-generated DPM emissions contribute to negative health impacts when construction is extended over lengthy periods of time. The use of diesel-powered construction equipment during construction would be temporary and episodic and would occur over several locations isolated from one another. Furthermore, future development allowed under the proposed 2045 General Plan Update would be subject to and would comply with California regulations limiting idling to no more than five minutes, which would further reduce nearby sensitive receptors exposure to temporary and variable diesel PM emissions. Many of the individual construction projects would span small areas.

Construction projects contained in a site of less than five acres are generally considered to represent less-than-significant health risk impacts due to (1) limitations on the off-road diesel equipment able to operate and thus a reduced amount of generated diesel PM, (2) the reduced amount of dust-generating ground disturbance possible compared to larger construction sites, and (3) the reduced duration of construction activities compared to the development of larger sites. For these reasons and because diesel fumes disperse rapidly over relatively short distances, DPM generated by most construction activities, in and of itself, would not be expected to create conditions where the probability of contracting cancer is greater than 10 in one million for nearby receptors.

Implementation of appropriate YSAQMD-recommended pollutant-reduction measures would reduce construction emissions for future individual development projects; however, because individual project-specific information is not available, it is not possible to determine with certainty whether implementation of the YSAQMD reduction measures would reduce health risk-related impacts to sensitive receptors or identify additional quantifiable mitigation measures that would reduce project-specific construction emissions to ensure that localized emissions generated during construction of future development projects under the General Plan Update do not expose sensitive receptors to substantial pollutant concentrations.

However, implementation of Policy OSC-13 could reasonably be expected to reduce emissions of DPM associated with most future construction activities to a less-than-significant level based on established regulatory thresholds and the demonstrated effectiveness of mitigation measures, such as the requirement to use Tier 4 engines and exhaust filters, which significantly reduce DPM emissions, when necessary to reduce

projected construction emissions to levels below significance thresholds. Additionally, California's mandatory five-minute idling limit further minimizes diesel emissions. Policy OSC-13 would also require large-scale construction projects (greater than five acres lasting longer than two years) to prepare a site-specific construction pollutant mitigation plan for the potential for construction-generated air pollutant impacts prior to City issuance of grading or building permits. These plans must demonstrate, using YSAQMD-approved methods, that pollutant concentrations at the nearest receptors remain below health risk thresholds. The City would review these plans to ensure consistency with YSAQMD standards and practices and confirm they contain appropriate requirements and standards to ensure pollutant health risks do not exceed YSAQMD risk thresholds. As a result, impacts would be less than significant.

Operational Air Contaminants

Common sources of operational TAC emissions are stationary sources (e.g., diesel backup generators and gasoline stations), which are subject to YSAQMD permit requirements. Another common and often more significant source type is on-road motor vehicles on high-volume roads, such as SR-12. As previously described, CARB developed and approved the *Air Quality and Land Use Handbook: A Community Health Perspective* (2005) to address the siting of sensitive land uses in the vicinity of freeways, distribution centers, rail yards, ports, refineries, chrome-plating facilities, dry cleaners, and gasoline-dispensing facilities. This guidance document was developed to assess compatibility and associated health risks when placing sensitive receptors near existing pollution sources. CARB's recommendations on the siting of new sensitive land uses identified in Table 5.3-4 were based on a compilation of recent studies that evaluated data on the adverse health effects from proximity to air pollution sources.

As a planning document, the proposed General Plan Update identifies land use designations within the city limits, Sphere of Influence, and Planning Area that specify the type of allowed uses associated with each designation. While the proposed General Plan Update does not propose site-specific development, its policies establish a framework to minimize TAC exposure risks through careful land use planning. Key characteristics include the fact that Rio Vista already hosts sensitive land uses, such as residential neighborhoods, schools, and healthcare facilities, and the proposed General Plan Update anticipates the addition of new sensitive land uses (primarily residential) during implementation but incorporates safeguards to minimize exposure risks.

5. Environmental Analysis
AIR QUALITY

The General Plan Update requires industrial uses to be located away from sensitive land uses like residences. By prohibiting heavy industrial activities near residential areas, schools, and healthcare facilities, the proposed General Plan Update minimizes potential exposure to high concentrations of TACs. For example, proposed Land Use and Community Character Element Policy LU-7 explicitly emphasizes that new developments must be compatible with surrounding uses. This ensures that sensitive receptors like schools, homes, or healthcare facilities are not situated near significant TAC sources, such as heavy manufacturing facilities or distribution centers. The proposed General Plan Update also contains policy provisions that are generally consistent with the CARB Air Quality and Land Use Handbook. For example, the General Plan Land Use Element would require the location of industrial and commercial land uses away from noise-sensitive land uses, which also includes TAC-sensitive land uses such as residences, thereby prohibiting the development of any substantial commercial or industrial source of TAC emissions in the vicinity of residential land uses. Additionally, the Land Use Element states that to protect existing industry and commercial businesses, new sensitive land uses shall not be placed near existing noise-generating uses, which often consist of sources of TAC emissions such as industrial facilities, thereby prohibiting the development of TAC-sensitive land uses in the vicinity of most sources of stationary TAC sources.

These proposed policies of the General Plan Update effectively assist to reduce human health impacts and exposure of sensitive receptors to substantial pollutant concentrations, including requiring new developments to be compatible with existing uses to prevent land use conflicts. The proposed General Plan Update generally aligns with CARB guidelines to maintain safe distances between sensitive land uses and major TAC sources. Given these proactive measures, the General Plan Update demonstrates a strong framework for managing TAC-related health risks.

Level of Significance Before Mitigation: Impact 5.3-4 would be less than significant.

Mitigation Measures

No mitigation measures are required.

Impact 5.3-5: The proposed project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people. [Threshold AQ-4]

Typically, odors are regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals can smell minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; in fact, an odor that is offensive to one person (e.g., from a fast-food restaurant) may be perfectly acceptable to another. It is also important to note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity. Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word "strong" to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

Construction activities that have the potential to emit odors from the operation of diesel equipment, generation of fugitive dust, and paving (asphalt). Odors and similar emissions from construction would be intermittent and temporary, and generally would not extend beyond the construction area. While odors could be generated during construction activities, the proposed General Plan Update would not directly result in construction of any development project. Identification of potential impacts to odor receptors resulting from construction-generated odors, such as equipment exhaust, would require project-specific information for future individual land use development projects that is not currently known. Nonetheless, odors generated from the operation of diesel equipment

are short-term in nature and rapidly dissipate and are diluted by the atmosphere downwind of the odor sources. Additionally, odors would be localized and generally confined to the construction area. Therefore, construction odors generated under the General Plan Update would not adversely affect a substantial number of people to odor emissions.

According to the YSAQMD CEQA Handbook (2007), facilities/land uses that have the potential to produce odors during standard operations and may require special attention in the environmental review process include the following:

- Wastewater Treatment Plants
- Sanitary Landfills
- Composting/Green Waste Facilities
- Recycling Facilities
- Chemical Manufacturing Plants
- Painting/Coating Operations
- Agricultural Operations
- Slaughterhouse/Food Packaging Plants

According to the YSAQMD CEQA Handbook (2007), if a land use project proposes any of these type of land uses, which have the potential to cause significant odor impacts, the odor impacts should be identified and discussed in the environmental document so mitigation measures may be identified. These guidelines further state that the most effective mitigation strategy is to provide a sufficient distance, or buffer zone, between the source and the receptor(s). The greater the distance between an odor source and receptor, the less odor impact when it reaches the receptor. The YSAQMD CEQA Handbook (2007) recommends a buffer distance of one mile between odor sources like those listed above and sensitive receptors. Consideration of YSAQMD's recommended buffer distances would be required for all future development under the proposed General Plan Update, which requires incorporation, as conditions of approval, of YSAQMD-recommended mitigation measures (see General Plan Update Policy OSC-13). Additionally, the City Municipal Code also addresses potential odor impacts by requiring that no emission of odorous gases or other odorous matter be permitted in excess of the most recent standards adopted by the YSAQMD and Solano County Department of Environmental Health. Any process that may involve the creation or emission of any odor shall be provided with a secondary safeguard system so that control will be maintained if the primary safeguard system should fail. Lastly, YSAQMD Rule 2.5, *Nuisance*, states that no person shall discharge from any source whatsoever such quantities of air contaminants or other material that causes injury, detriment, nuisance, or annoyance to

any considerable number of persons or to the public, or which endangers the comfort, repose, health, or safety of any such persons or the public, or which has a natural tendency to cause injury or damage to businesses or property. The General Plan Update addresses this restriction by requiring future development projects to comply with all applicable YSAQMD regulations and through implementation of Policy OSC-13, which requires mitigation measures and best practices to reduce emissions. These existing requirements would minimize odor emissions from adversely affecting a substantial number of people in the city, and impacts would be less than significant.

Level of Significance Before Mitigation: Impact 5.3-5 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.3.5 Cumulative Impacts

The cumulative area of analysis is the SVAB, which includes Rio Vista. By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size, by itself, to result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. Furthermore, per YSAQMD guidance, projects that would individually have a significant air quality impact would also be considered to have a significant cumulative impact. Thus, the impacts previously discussed are evaluated in the cumulative context and no additional cumulative analysis is needed.

In summary, the proposed General Plan Update is expected to generate construction and operational emissions that would exceed YSAQMD thresholds. Additionally, buildout of the proposed General Plan would result in an increase of most emissions compared with buildout of the existing General Plan. Implementation of proposed General Plan Update polices and YSAQMD-recommended mitigation measures would reduce construction and operational emissions for future projects under the proposed General Plan Update; however, due to the programmatic nature of this Draft EIR, it cannot be determined whether this would reduce emissions below the specified thresholds during construction or operation. Thus, proposed project impacts are cumulatively considerable.

Health Effects

The City of Rio Vista, within the SVAB, is designated as nonattainment with respect to the NAAQS and CAAQS for ROG and NOx, which are precursors to ozone. The health effects associated with ozone are generally associated with reduced lung function. The

contribution of reactive organic gases and NOx to regional ambient O_3 concentrations is the result of complex photochemistry. The increases in O_3 concentrations in the SVAB due to O_3 precursor emissions tend to be found downwind from the source location to allow time for the photochemical reactions to occur. Further, the potential for exacerbating excessive O_3 concentrations would also depend on the time of year that the ROG emissions would occur, because exceedances of the O_3 NAAQS and CAAQS tend to occur between April and October when solar radiation is highest. Due to the lack of quantitative methods to assess this complex photochemistry and the difficulty in connecting small amounts of pollution to generalized health outcomes, the holistic effect of a single project's emissions of O_3 precursors on health impacts is hard to predict. The effect of a single project's emissions of O_3 precursors is speculative due to the lack of quantitative methods to assess this impact.

The Rio Vista region is also designated as nonattainment with respect to the NAAQS for $PM_{2.5}$ and nonattainment with respect to the CAAQS for PM_{10}. Particulate matter (PM_{10} and $PM_{2.5}$) contains microscopic solids or liquid droplets that are so small that they can get deep into the lungs and cause serious health problems. Particulate matter exposure has been linked to a variety of problems, including premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms such as irritation of the airways, coughing, or difficulty breathing. While PM_{10} and $PM_{2.5}$ contribute to overall air quality concerns, these pollutants are highly localized. PM concentrations decrease rapidly with distance from the source due to dispersion and gravitational settling, and thus regional air quality averages do not capture the localized nature of PM emissions. For these reasons, the effect of a single project's PM emissions, in combination with other projects and sources spanning the SVAB and Rio Vista region, is speculative. While it is not possible to determine whether implementation of the YSAQMD reduction measures would reduce health risk-related impacts to sensitive receptors or identify additional quantifiable mitigation measures that would reduce project-specific construction emissions to ensure that localized emissions generated during construction of future development projects under the General Plan Update do not expose sensitive receptors to substantial pollutant concentrations, proposed policies of the General Plan Update would effectively reduce human health impacts and exposure of sensitive receptors to substantial pollutant concentrations during the operation of these future development projects.

There are numerous scientific and technological complexities associated with correlating criteria air pollutant emissions from an individual project to specific health effects or

potential additional nonattainment days, and there are currently no modeling tools that can provide reliable and meaningful additional information regarding health effects from criteria air pollutants generated by individual projects within YSAQMD's jurisdiction. Currently, YSAQMD, CARB, and the USEPA have not approved a quantitative method to reliably, meaningfully, and consistently translate the mass emission estimates for the criteria air pollutants resulting from the General Plan Update to specific health effects.

In summary, compliance with the required General Plan Update policies, along with the implementing action aimed at reduction of construction and operational criteria air pollutant emissions, would help reduce impacts associated with buildout of the General Plan Update. Future projects under the General Plan Update would comply with applicable YSAQMD rules and regulations to meet YSAQMD significance thresholds, as required under Policy OSC-13, which are based on levels that the SVAB can accommodate without affecting the attainment date for both the federal and State AAQS, that has been established to protect public health and welfare. Therefore, the General Plan Update would result in less-than-significant health effects associated with criteria air pollutants. Overall, however, cumulative impacts to air quality are considered significant.

5.3.6 Level of Significance Before Mitigation

After implementing regulatory requirements and standard conditions of approval, some impacts would be less than significant, including Impacts 5.3-1, 5.3-4, and 5.3-5.

Without mitigation, these impacts would be **potentially significant**:

- **Impact 5.3-2:** Short-term construction activities associated with the proposed project would result in a cumulatively considerable net increase of criteria pollutants for which the project region is in nonattainment under applicable federal or State ambient air quality standards.
- **Impact 5.3-3:** Development under the proposed project would result in a cumulatively considerable net increase of criteria pollutants for which the project region is in non-attainment under applicable federal or State AAQS.

5.3.7 Mitigation Measures

Impact 5.3-2

There are no feasible mitigation measures.

Impact 5.3-3

There are no feasible mitigation measures.

5.3.8 Level of Significance After Mitigation

Impact 5.3-2

Development in accordance with the proposed project could generate short-term emissions that could exceed the YSAQMD significance thresholds and cumulatively contribute to the nonattainment designations of the SVAB. While the YSAQMD has promulgated methodology protocols for the preparation of air quality analyses, and future development projects allowed under the proposed General Plan Update that are projected to exceed YSAQMD significance thresholds are required to implement mitigation measures to reduce air pollutant emissions as much as feasible, YSAQMD significance thresholds may still be exceeded as a result of construction activities allowed under the proposed General Plan Update. Since it cannot be guaranteed that construction of future projects allowed under the proposed General Plan Update would generate air pollutant emissions below YSAQMD significance thresholds due to the programmatic and conceptual nature of the proposed General Plan Update and uncertainties related to future individual projects, this is considered a significant impact. Individual projects under the General Plan Update may involve unusual use types, locations, or design features that cannot be anticipated at this city-wide planning stage. Additional measures to minimize unique, project-specific impacts may be able to be identified at the time of environmental review for these individual projects; however, the measures cannot be identified at this time, nor can the City guarantee that such measures will, in fact, be available and feasible for all project scenarios. Therefore, Impact 5.3-2 would remain ***significant and unavoidable***.

Impact 5.3-3

Development in accordance with the proposed project would generate long-term emissions that could exceed YSAQMD's regional significance thresholds and cumulatively contribute to the nonattainment designations of the SVAB. The majority of criteria air pollutant emissions projected to be generated at buildout of the proposed 2045 General Plan Update would be higher than projected emissions at existing General Plan 2001 buildout. Future development projects would be subject to the City's standard CEQA review process and would be required to assess project-specific emissions in relation to the YSAQMD significance thresholds. However, specific project-level information for potential future development is not available at this time and the estimation of emissions

resulting from future development would be speculative. Due to these uncertainties, the reductions that may be achieved through implementation of General Plan Update policies cannot be assumed to be sufficient to reduce operational emissions to meet the YSAQMD's thresholds for all projects and in instances where concurrent projects may combine to exceed thresholds. Therefore, emissions associated with the proposed project could exceed the YSAQMD significance thresholds. Therefore, Impact 5.3-3 would remain ***significant and unavoidable***.

5.3.9 References

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5.4 BIOLOGICAL RESOURCES

This section of the Draft Environmental Impact Report (EIR) evaluates the potential for implementation of the proposed project to impact biological resources in the City of Rio Vista. The analysis in this section is based in part on the following information:

- *Biological Resources Assessment: City of Rio Vista General Plan Update*, ECORP Consulting, Inc., October 2023

A complete copy of this study is included as Appendix 5.4-1 to this Draft EIR.

5.4.1 Environmental Setting

5.4.1.1 REGULATORY BACKGROUND

Federal

Federal Endangered Species Act

The federal Endangered Species Act (FESA) protects plants and animals that are listed as endangered or threatened by the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS). Section 9 of the FESA prohibits the taking of endangered wildlife, where taking is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (50 CFR [Code of Federal Regulations] Section 17.3). For plants, this statute governs removing, possessing, maliciously damaging, or destroying any endangered plant on federal land and removing, cutting, digging up, damaging, or destroying any endangered plant on nonfederal land in knowing violation of State law (16 US Code Section 1538). Under Section 7 of the FESA, federal agencies are required to consult with the USFWS if their actions, including permit approvals or funding, could adversely affect a listed (or proposed) species (including plants) or its critical habitat. Through consultation and the issuance of a biological opinion, the USFWS may issue an incidental take statement allowing take of the species that is incidental to an otherwise authorized activity provided the activity will not jeopardize the continued existence of the species. Section 10 of the FESA provides for issuance of incidental take permits where no other federal actions are necessary provided a habitat conservation plan is developed.

The FESA establishes critical habitat as a means to retain essential features for threatened or endangered species. Critical habitat requires special management and protection. When designating critical habitat, areas are assessed for if the species occupies the area and if there is space for the individual or population to grow and exhibit normal behavior, the space provides shelter and food resources, the space is adequate

for breeding and offspring rearing, and the space contains habitat that can be protected from disturbances and is representative of the species' geographical range and distribution.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) implements international treaties between the U.S. and other nations devised to protect migratory birds and any of their parts, eggs, and nests from activities such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. As authorized by the MBTA, the USFWS issues permits to qualified applicants for the following types of activities: falconry, raptor propagation, scientific collecting, special purposes (e.g., rehabilitation, education, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal. The regulations governing migratory bird permits are in 50 CFR Part 13, *General Permit Procedures*, and 50 CFR Part 21, *Migratory Bird Permits*. The State of California has incorporated the protection of birds in Sections 3503, 3503.5, 3513, and 3800 of the Fish and Game Code.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act was enacted in 1940 and prohibits anyone without a permit from "taking" bald eagles (*Haliaeetus leucocephalus*) or golden eagles (*Aquila chrysaetos*), including their parts, nests, or eggs. Take is defined as to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb. In addition to these protections, the Bald and Golden Eagle Protection Act provides protection for nesting sites. Nesting sites are protected not only when active but also when previously used in case an eagle returns to the same nesting site.

Clean Water Act, Section 404

The United States Army Corps of Engineers (USACE) regulates discharge of dredged or fill material into "waters of the United States."[1] Any filling or dredging within waters of the United States requires a permit, which entails assessment of potential adverse impacts to USACE wetlands and jurisdictional waters and any mitigation measures that the

1 "Waters of the United States," as applied to the jurisdictional limits of the USACE under the Clean Water Act, includes all waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the tide; all interstate waters, including interstate wetlands; and all other waters, such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds whose use, degradation, or destruction could affect interstate or foreign commerce; water impoundments; tributaries of waters; territorial seas; and wetlands adjacent to waters. The terminology used by Section 404 of the Clean Water Act includes "navigable waters," which is defined at Section 502(7) of the act as "waters of the United States, including the territorial seas."

USACE requires. Section 7 consultation with USFWS may be required for impacts to a federally listed species. If cultural resources may be present, Section 106 review may also be required. When a Section 404 permit is required, a Section 401 Water Quality Certification is also required from the Regional Water Quality Control Board (RWQCB).

Clean Water Act, Sections 401 and 402

Section 401(a)(1) of the Clean Water Act (CWA) specifies that any applicant for a federal license or permit to conduct any activity that may result in any discharge into navigable waters shall provide the federal permitting agency with a certification, issued by the state in which the discharge originates, that any such discharge will comply with the applicable provisions of the CWA. In California, the applicable RWQCB must certify that the project will comply with water quality standards. Permits requiring Section 401 certification include USACE Section 404 permits and National Pollutant Discharge Elimination System permits issued by the Environmental Protection Agency (EPA) under Section 402 of the CWA. National Pollutant Discharge Elimination System permits are issued by the applicable RWQCB. The City of Rio Vista is in the jurisdiction of the San Francisco RWQCB (Region 2).

Executive Order 11990: Protection of Wetlands

President Carter signed Executive Order (EO) 11990 on May 24, 1977, requiring federal agencies to avoid, to the extent possible, the long- and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative. The term “wetlands” refers to areas that are inundated by surface water or groundwater with a frequency sufficient to support—and under normal circumstances does or would support—a prevalence of vegetative or aquatic life that needs saturated or seasonally saturated soil conditions for growth and reproduction. Examples of wetlands include swamps, marshes, bogs, and similar areas, such as sloughs, potholes, wet meadows, river overflows, mud flats, and natural ponds. An Individual EO 11990 “Wetlands Only Practicable Alternative Finding” is required from the Federal Highway Administration if a state project is federally aided and involves fill in wetlands requiring a USACE Section 404 Individual or Nationwide Permit. An additional requirement is to provide early public involvement in projects affecting wetlands.

Executive Order 13112: Invasive Species Protection

President Clinton signed EO 13112 on February 3, 1999, requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as “…any species, including its seeds, eggs, spores, or other

biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health." Federal Highway Administration guidance issued August 10, 1999, directs the use of the State's noxious weed list to define the invasive plants that must be considered as part of California Environmental Quality Act (CEQA) analysis for a proposed project.

State

California Endangered Species Act

The California Endangered Species Act (CESA) generally parallels the main provisions of the FESA and is administered by the California Department of Fish and Wildlife (CDFW). It prohibits take and protects State-listed endangered and threatened species of fish, wildlife, and plants. Unlike its federal counterpart, CESA also applies the take prohibitions to species petitioned for listing (State candidates). Candidate species may be afforded temporary protection as though they were already listed as threatened or endangered at the discretion of the Fish and Game Commission. Unlike the FESA, CESA does not include listing provisions for invertebrate species. Under certain conditions, CESA has provisions for take through a 2081 permit or memorandum of understanding. In addition, some sensitive mammals and birds are protected by the State as "fully protected species" (see separate discussion below). California "species of special concern" are species designated as vulnerable to extinction due to declining population levels, limited ranges, and/or continuing threats. This list is primarily a working document for the CDFW's California Natural Diversity Database (CNDDB), which maintains a record of known and recorded occurrences of sensitive species. Informally listed taxa are not protected per se, but warrant consideration in the preparation of biological resources assessments.

Native Plant Protection Act

The Native Plant Protection Act (NPPA) of 1977 (California Fish and Game Code [CFGC] Sections 1900–1913) was created with the intent to "preserve, protect and enhance rare and endangered plants in this State." The NPPA is administered by CDFW. The California Fish and Game Commission has the authority to designate native plants as "endangered" or "rare" and to protect endangered and rare plants from take. The CESA (CFGC Sections 2050–2116) provided further protection for rare and endangered plant species, but the NPPA remains part of the CFGC.

California Fish and Game Code

Fully Protected Species

The State of California first began to designate species as "fully protected" before the creation of the FESA or the CESA. Lists of fully protected species were initially developed to provide protection to animals that were rare or faced possible extinction, and included fish, amphibians and reptiles, birds, and mammals. Fully protected species are identified in CFGC Section 4700 for mammals, Section 3511 for birds, Section 5050 for reptiles and amphibians, and Section 5515 for fish. Most fully protected species have since been listed as threatened or endangered under the FESA and/or the CESA. The regulations that implement the Fully Protected Species Statute (CFGC Section 4700) provide that fully protected species may not be taken or possessed at any time. Furthermore, CDFW prohibits any State agency from issuing permits for fully protected species, except for necessary scientific research.

On July 10, 2023, Governor Gavin Newsom signed Senate Bill (SB) 147, amending California's statutes for fully protected species. The amendments create a temporary, 10-year permitting regime that allows proponents of a limited, defined set of projects to pursue authorization from CDFW to proceed even where there could be take of one or more fully protected species. Activities for which project proponents may seek a permit are:

- A maintenance, repair, or improvement project to the State Water Project undertaken by the Department of Water Resources.
- A maintenance, repair, or improvement project to critical regional or local water agency infrastructure.
- A transportation project undertaken by a State, regional, or local agency that does not increase highway or street capacity for automobile or truck travel.
- A wind project and any appurtenant infrastructure improvement.
- A solar photovoltaic project and any appurtenant infrastructure improvement.

Sections 86, 2000, and 3007

CFGC Section 86 defines "take" as hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill. Section 2000 states that it is unlawful to take a bird, mammal, fish, reptile, or amphibian. Section 3007 states that it is unlawful to take a bird or mammal without a license or entitlement to do so.

Section 1600

CFGC Section 1600 requires a project proponent to notify CDFW of any proposed alteration of streambeds, rivers, and lakes. The intent is to protect habitats that are important to fish and wildlife. CDFW may review and place conditions on the project as part of a Streambed Alteration Agreement (SAA) that addresses potentially significant adverse impacts within CDFW's jurisdictional limits.

Section 1602

Section 1602 requires any person, State, local government agency, or public utility proposing a project that may affect a river, stream, or lake to notify CDFW before beginning the project. A Lake or Streambed Alteration Agreement is required 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. In Title 14 of the California Code of Regulations (CCR), Section 1.72, the CDFW defines a stream (including creeks and rivers) as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that support or has supported riparian vegetation."

CDFW jurisdiction includes drainages with a definable bed, bank, or channel, with the jurisdictional limit being the top of bank. It also includes areas that support intermittent, perennial, or subsurface flows; support fish or other aquatic life; or support riparian or hydrophytic vegetation.

CDFW reviews the proposed actions and, if necessary, submits to the applicant a proposal for measures to protect affected fish and wildlife resources. The final proposal that is mutually agreed upon by CDFW and the applicant is the SAA. Often, projects that require an SAA also require a permit from USACE under Section 404 of the CWA. In these instances, the conditions of the Section 404 permit and the SAA may overlap.

Section 2014

CFGC Section 2014 states that it is the policy of the State to conserve its natural resources and prevent the willful or negligent destruction of birds, mammals, fish, reptiles, or amphibia. The section further explains that the State may recover damages if destruction is caused to these resources and outlines how damages are measured, actions to recover damages, persons or agencies that are excluded from coverage of this section, and a definition of local agency.

Section 4150

Section 4150 prohibits incidental or deliberate "take" of nongame mammals, including bats. Disturbance (e.g., noise, lighting) and displacement of bats from roosts and important foraging areas can potentially result in increased susceptibility to predation, reduced quality of thermal and social environments, reduced foraging efficiencies, and reduced reproductive success of maternity roosts.

Special Protection for Birds

In addition to protections in the CESA, the CFGC includes several sections that specifically protect certain birds:

- **Section 3800** states that it is unlawful to take nongame birds, such as those occurring naturally in California that are not resident game birds, migratory game birds, or fully protected birds, except when in accordance with regulations of the Fish and Game Commission or a mitigation plan approved by CDFW for mining operations.
- **Section 3503** prohibits the take, possession, or needless destruction of the nest or eggs of any bird.
- **Section 3503.5** protects birds of prey (which includes eagles, hawks, falcons, kites, ospreys, and owls) and prohibits the take, possession, or destruction of any birds and their nests.
- **Section 3505** makes it unlawful to take, sell, or purchase egrets, ospreys, and several exotic non-native species, or any part of these birds.
- **Section 3513** specifically prohibits the take or possession of any migratory nongame bird as designated in the MBTA.

Poter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act requires "any person discharging waste, or proposing to discharge waste, within any region that could affect the waters of the State to file a report of discharge" with the RWQCB through State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (Procedures) (23 CCR Section 3855). Waters of the State are defined as any surface water or groundwater, including saline waters, within the boundaries of the state (California Water Code Section 13050[e]). Pollution is defined as an alteration of the quality of the waters of the State by waste to a degree that unreasonably affects its beneficial uses (California Water Code Section 13050) and includes filling in waters of the State. Note that 23 CCR Section 3855 applies only to individual water quality certifications, but the new Procedures

extend the application of Section 3855 to individual waste discharge requirements for discharges of dredged or fill material to waters of the State and waivers thereof.

California Environmental Quality Act

In accordance with CEQA Guidelines Section 15380, a species or subspecies not specifically protected under the FESA, CESA, or NPPA may be considered endangered, rare, or threatened for CEQA review purposes if the species meets certain criteria specified in the CEQA Guidelines. These criteria parallel the definitions used in the FESA, CESA, and NPPA. Section 15380 was included in the CEQA Guidelines primarily to address situations in which a project under review may have a significant effect on a species that has not been listed under the FESA, CESA, or NPPA, but that may meet the definition of endangered, rare, or threatened. Animal species identified as Species of Special Concern (SSC) by CDFW, birds identified as Birds of Conservation Concern by USFWS, and plants identified by the California Native Plant Society (CNPS) as rare, threatened, or endangered may meet the CEQA definition of rare or endangered.

Species of Special Concern

CDFW defines a species of special concern (SSC) as a species, subspecies, or distinct population of an animal native to California that is not legally protected under FESA, CESA, or the CFGC but currently satisfies one or more of the following criteria:

- The species has been completely extirpated from the state or, as in the case of birds, it has been extirpated from its primary seasonal or breeding role.
- The species is federally (but not State) listed as threatened or endangered or meets the State definition of threatened or endangered but has not been formally listed.
- The species has or is experiencing serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status.
- The species has naturally small populations that exhibit high susceptibility to risk from any factor that, if realized, could lead to declines that would qualify it for State threatened or endangered status.
- An SSC is typically associated with habitats that are threatened.

Depending on the policy of the lead agency, projects that result in substantial impacts to a SSC may be considered to have a potentially significant impact under CEQA.

California Rare Plant Ranks

The CNPS maintains the Inventory of Rare and Endangered Plants of California, a list of plant species native to California that are threatened with extinction, have limited distributions, or have low populations. Plant species meeting one of these criteria are assigned to one of six California Rare Plant Ranks (CRPR). The ranking system was developed in collaboration with government, academia, non-governmental organizations, and private-sector botanists, and is jointly managed by CDFW and the CNPS. The CRPRs are currently recognized in the CNDDB. The following are definitions of the CRPRs:

- **Rare Plant Rank 1A**: Presumed extirpated in California and either rare or extinct elsewhere.
- **Rare Plant Rank 1B**: Rare, threatened, or endangered in California and elsewhere.
- **Rare Plant Rank 2A**: Presumed extirpated in California, but more common elsewhere.
- **Rare Plant Rank 2B**: Rare, threatened, or endangered in California but more common elsewhere.
- **Rare Plant Rank 3**: A review list of plants about which more information is needed.
- **Rare Plant Rank 4**: A watch list of plants of limited distribution.

Additionally, CNPS has defined “threat ranks” that are added to the CRPR as an extension. Threat ranks designate the level of threat on a scale of 1 through 3, with 1 being the most threatened and 3 being the least threatened. Threat ranks are generally present for all plants ranked 1B, 2B, or 4, and for the majority of plants ranked 3. Plant species ranked 1A and 2A (presumed extirpated in California) and some species ranked 3, which lack threat information, do not typically have a threat rank extension. The following are definitions of the CNPS threat ranks:

- **Threat Rank 0.1**: Seriously threatened in California (more than 80 percent of occurrences threatened/high degree and immediacy of threat).
- **Threat Rank 0.2**: Moderately threatened in California (20 to 80 percent occurrences threatened/moderate degree and immediacy of threat).
- **Threat Rank 0.3**: Not very threatened in California (less than 20 percent of occurrences threatened/low degree and immediacy of threat or no current threats known).

Factors such as habitat vulnerability and specificity, distribution, and condition of occurrences are considered in setting the threat rank; differences in threat ranks do not constitute additional or different protection (CNPS 2023a).

Depending on the policy of the lead agency, substantial impacts to plants ranked 1A, 1B, 2, and 3 are typically considered significant under CEQA Guidelines Section 15380. Significance under CEQA is typically evaluated on a case-by-case basis for plants ranked 4 and at the discretion of the CEQA lead agency.

Sensitive Natural Communities

The CDFW maintains the California Natural Community List of vegetation alliances, associations, and special stands, as defined in *The Manual of California Vegetation* (MCV), along with their respective State and global rarity ranks (CNPS 2023b). Natural communities with a State rarity rank of S1, S2, or S3 are considered sensitive natural communities. Depending on the policy of the lead agency, impacts to sensitive natural communities may be considered significant under CEQA.

California Oak Woodlands Conservation Act

The California Oak Woodlands Conservation Act was passed in 2001 and provides funding for conservation and protection of California oak woodlands. This act mandates the California Wildlife Conservation Board to establish a grant program designed to protect and restore oak woodlands using conservation easements, cost-share and long-term agreements, technical assistance, and public education and outreach. The grant program provides incentives designed to foster the voluntary conservation of oak woodlands.

To participate in the Oak Woodlands Conservation Program, a county or city shall adopt an oak woodlands management plan through a resolution. The county or city must prepare statements expressing support for landowners that participate in the Oak Woodlands Conservation Program and must certify that individual proposals are consistent with the county or city oak woodlands management plan.

Regional

Sacramento-San Joaquin Delta Regulations

The Delta Protection Act of 1992 (Act; PRC Division 19.5) declared that “the Sacramento-San Joaquin Delta (Delta) is a natural resource of statewide, national, and international significance, containing irreplaceable resources, and it is the policy of the state to recognize, preserve, and protect those resources of the Delta for the use and enjoyment of current and future generations.” The Act established goals for the Delta and created the Delta Protection Commission (Commission) pursuant to PRC Section 29703.5. The Commission adopted the Land Use and Resource Management Plan for the Primary Zone of the Delta (Delta Plan; Delta Protection Commission 2010) in 2010 pursuant to

PRC Section 29760. The primary zone is defined as "the delta land and water area of primary state concern and statewide significance which is situated within the boundaries of the Delta, as described in Section 12220 of the Water Code, but that is not within either the urban limit line or sphere of influence line of any local government's general plan or currently existing studies, as of January 1, 1992."

The Delta Plan guides local land use decisions on development projects subject to approval by Delta counties (Contra Costa, Sacramento, San Joaquin, Yolo, and Solano). Per the Delta Plan, should cities propose to expand into the Delta primary zone, or acquire land in the primary zone for utility or infrastructure facility development, those actions are to be carried out in conformity with the Delta Protection Act. General plans and projects in the Delta counties must be consistent with the Delta Plan and are subject to review by the Commission. The Commission also comments on projects in the secondary zone that have the potential to impact the primary zone. If a project in the primary zone is challenged as inconsistent with the Delta Plan, the project can be appealed to the Commission for resolution.

5.4.1.2 EXISTING CONDITIONS

Biological Study Area

The Biological Study Area (BSA) considers land within the incorporated limits of Rio Vista and its sphere of influence (SOI). The BSA is generally located on the west side of the Sacramento River east of Suisun Bay and the Montezuma Hills and south of Cache Slough. As shown in Figure 5.4-1, the following areas of the BSA are in the primary zone of the Delta: lands east of Airport Road, lands east of Liberty Island Road, the Sacramento River, and some slivers of land adjacent to the river (DWR 2023).

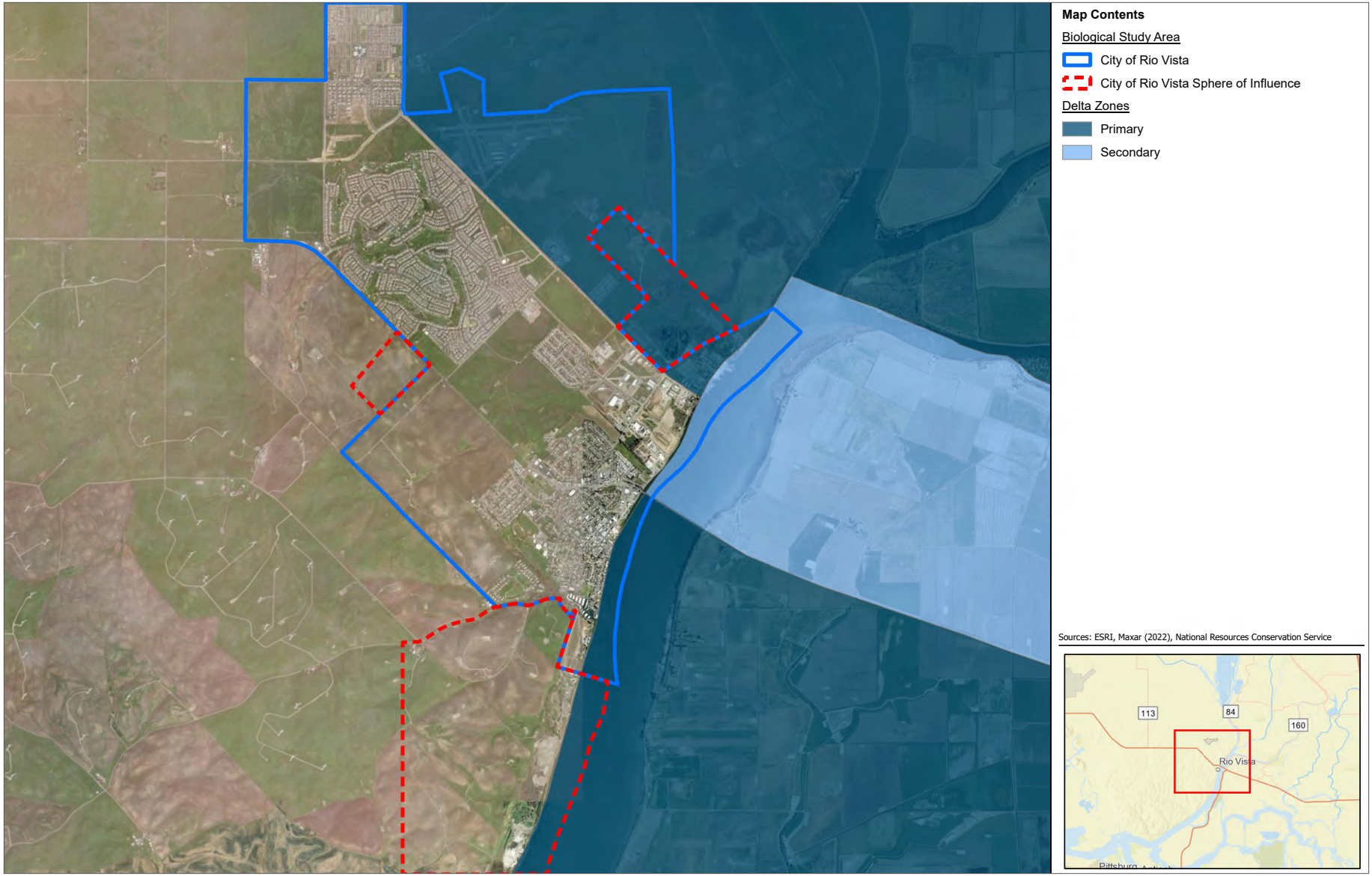
Site Characteristics and Land Use

The BSA is a mosaic of urban areas, agricultural lands, and undeveloped areas that are mostly made up of annual grassland but also include sensitive habitats such as wetland and riparian vegetation communities and the Sacramento River Delta, which supports multiple special-status species and is designated Critical Habitat for delta smelt (*Hypomesus transpacificus*).

The BSA consists of relatively level to gently rolling terrain situated at elevations ranging from sea level at the Sacramento River to approximately 140 feet above mean sea level in the Montezuma Hills, in the southern portion of the BSA. The BSA is within the Sacramento Valley subregion of the Great Central Valley Region of the California floristic province (Jepson eFlora 2023). This subregion comprises the northern, wetter, cooler area of the Great Valley, which is now predominantly agricultural but still supports some

grasslands, marshes, vernal pools, riparian woodlands, alkali sink vegetation, and stands of valley oak (*Quercus lobata*). The average winter low temperature is 49.5 degrees Fahrenheit (˚F) and the average summer high temperature is 74.6˚F; the average annual precipitation is approximately 12.60 inches at the closest weather station, which is in Oakley, California, approximately 10 miles south of the BSA (NOAA 2023a).

Agriculture is the primary land use surrounding the BSA. Recreational uses along the Sacramento River near the BSA include boat ramps and the Brannan Island State Recreation Area.



Source: ECORP Consulting, Inc., 2023.

Figure 5.4-1
Delta Zones in Relation to the Biological Study Area

Soils and Geology

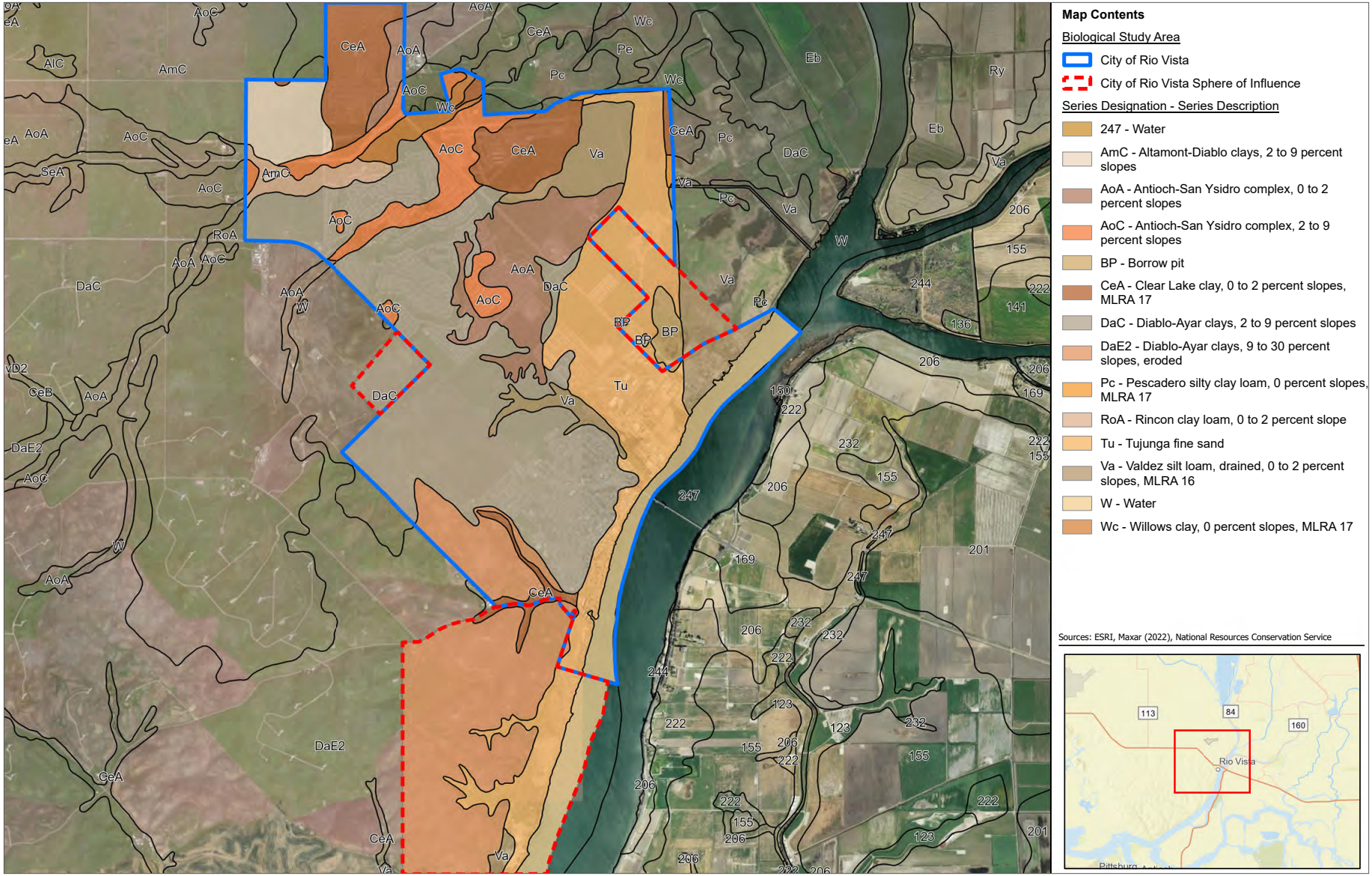
Soil survey mapping for the BSA was obtained from the Natural Resources Conservation Service (NRCS) Web Soil Survey (NRCS 2023). Table 5.4-1 provides an overview of the soil map units in the BSA.

Two geologic units are mapped within the BSA: Plio-Pleistocene and Pliocene loosely consolidated deposits (sedimentary, clastic) and older Quaternary alluvium and marine deposits (unconsolidated, undifferentiated). Figure 5.4-2 shows the NRCS soil map units. No geological units containing serpentinite are mapped within the BSA or its immediate vicinity (Horton 2017).

Table 5.4-1 Soil Map Units in the BSA

Map Unit Symbol	Map Unit Name
247	Water
AmC	Altamont-Diablo clays, 2 to 9 percent slopes
AoA	Antioch-San Ysidro complex, 0 to 2 percent slopes
BP	Borrow pit
CeA	Clear Lake clay, 0 to 2 percent slopes, MLRA 17
DaC	Diablo-Ayar clays, 2 to 9 percent slopes
DaE2	Diablo-Ayar clays, 9 to 30 percent slopes, eroded
Pc	Pescadero silty clay loam, 0 percent slopes, MLRA 17
RoA	Rincon clay loam, 0 to 2 percent slope
Tu	Tujunga fine sand
Va	Valdez silt loam, drained, 0 to 2 percent slopes, MLRA 16
W	Water
Wc	Willows clay, 0 percent slopes, MLRA 17

Source: NRCS 2023.



Source: ECORP Consulting, Inc., 2023.

0 6,000
Scale (Feet)

Figure 5.4-2
Natural Resources Conservation Service Soil Map Units

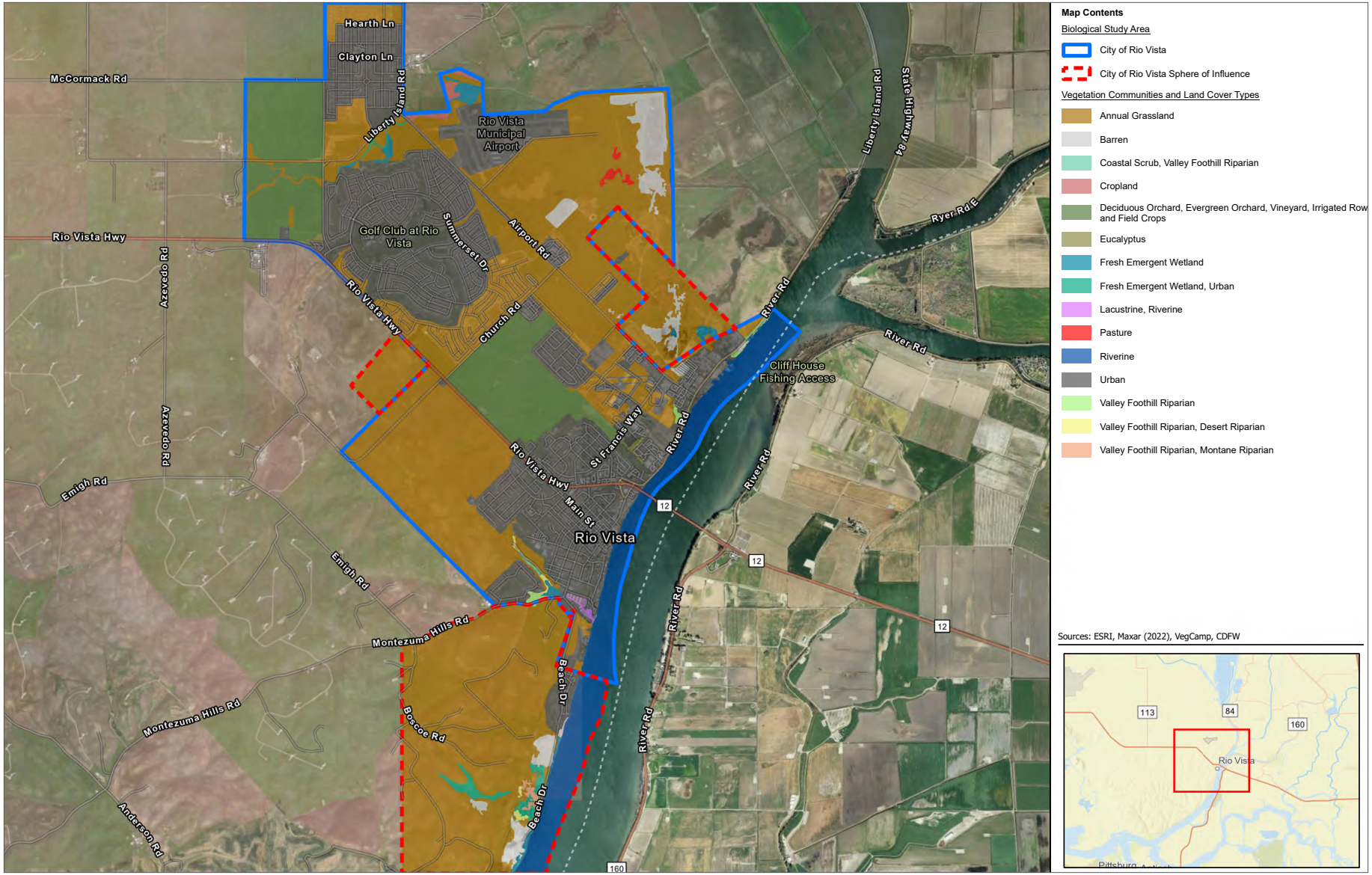
Vegetation

Vegetation Communities and Land Cover Types

General vegetation communities and land cover types in the BSA are depicted on Figure 5.4-3, as approximated from existing CNPS vegetation mapping (CDFW 2023a, 2023b) and California Vegetation Classification (USDA 2015) data, with minor changes based on aerial imagery interpretation. These general vegetation communities or land cover types are presented based on the California Wildlife Habitat Relationships (CWHR) classification, and habitats are described in detail in the associated CWHR publication (Mayer and Laudenslayer 1988). Approximate acreage of each vegetation community and land cover type within the BSA is included in Table 5.4-2.

Table 5.4-2 Vegetation Communities and Land Cover Types in the BSA

Cover Type	Acreage
Annual Grassland	2,905.58
Barren	150.69
Coastal Scrub, Valley Foothill Riparian	2.13
Cropland	17.95
Deciduous Orchard, Evergreen Orchard, Vineyard, Irrigated Row and Field Crops	561.91
Eucalyptus	5.43
Fresh Emergent Wetland	39.09
Fresh Emergent Wetland, Urban	29.81
Lacustrine, Riverine	3.64
Pasture	7.43
Riverine	375.06
Urban	1,758.53
Valley Foothill Riparian	12.74
Valley Foothill Riparian, Desert Riparian	5.20
Valley Foothill Riparian, Montane Riparian	5.80



Source: ECORP Consulting, Inc., 2023.

0 6,000
Scale (Feet)

Figure 5.4-3
Vegetation Communities and Land Cover Types

Oak Woodlands, Sensitive Natural Communities, and Riparian Habitat

The BSA includes oak woodlands, sensitive natural communities (SNCs), and riparian habitat. Vegetation communities can be further classified into MCV vegetation alliances and associations. Valley oak woodland within the BSA is a component of the valley foothill riparian vegetation type and is considered an SNC. Table 5.4-3 summarizes all SNCs mapped within the BSA based on the available data. Additional SNCs may be present, especially within the fresh emergent wetland and valley foothill riparian communities. Riparian habitat is also a component of those communities.

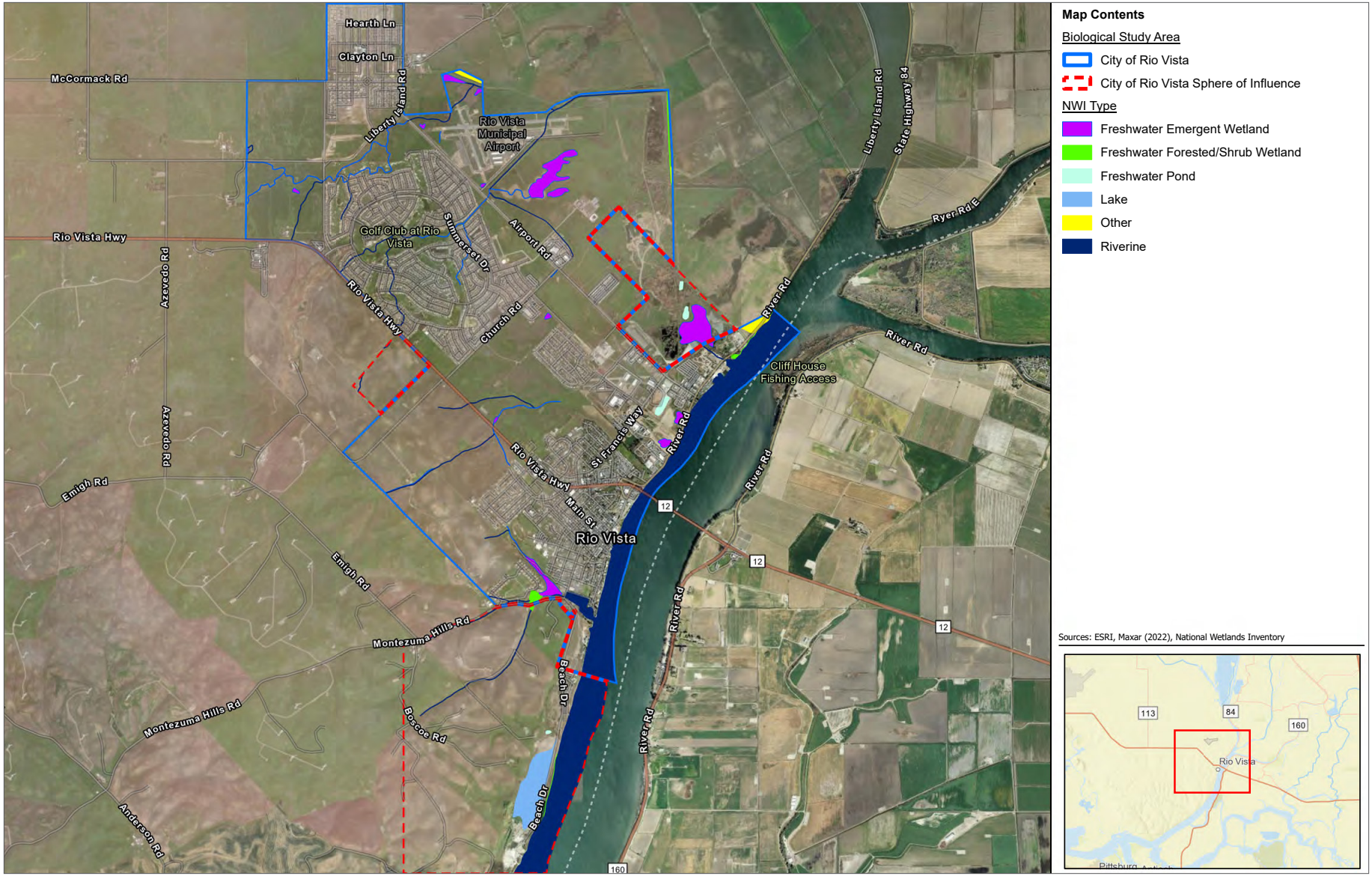
Smaller inclusions of SNCs, oak woodlands, and riparian habitat may also occur within other areas of the BSA (including areas depicted as developed land cover types such as cropland and urban). Site-specific vegetation mapping would be required to determine the types and extent of SNCs, oak woodlands, and riparian habitat within specific areas of the BSA.

Table 5.4-3 Sensitive Natural Communities in the BSA

Cover Type	SNC	State Rarity Ranking
Annual Grassland	California vernal pool and grassland matrix	S2
Fresh Emergent Wetland	Hardstem and California bulrush (*Schoenoplectus acutus, californicus*) herbaceous alliance	S3S4
Valley Foothill Riparian	Fremont cottonwood (*Populus fremontii*) forest and woodland alliance	S3.2
	Goodding's willow (*Salix gooddingii*) - red willow (*Salix laevigata*) riparian woodland and forest	S3
	Valley oak woodland and forest	S3

Aquatic Resources

The National Wetlands Inventory (NWI) data within the BSA is depicted on Figure 5.4-4. Approximate acreage of each NWI aquatic resource type within the BSA is included in Table 5.4-4. Aquatic resources within the BSA may be considered waters of the U.S. and/or State. The NWI maps are prepared from the analysis of high-altitude imagery that includes a margin of error. Consequently, on-the-ground delineations will likely result in deletions and/or additions, and revisions to the limits of aquatic features within the BSA. Site-specific aquatic resources delineations conducted according to USACE protocol would be required to determine the specific types and extent of aquatic resources in the BSA.



Source: ECORP Consulting, Inc., 2023.

0 6,000
Scale (Feet)

Figure 5.4-4
National Wetlands Inventory

Table 5.4-4 NWI Aquatic Resources in the BSA

NWI Type	Acreage
Freshwater Emergent Wetland	77.12
Freshwater Forested/Shrub Wetland	7.91
Freshwater Pond	5.58
Lake	41.27
Other	11.91
Riverine	401.86

Wildlife

The Delta region supports valuable habitat for hundreds of wildlife species. However, within the BSA, much of this value has been reduced due to urban development or past and ongoing disturbance from intensive grazing and agricultural uses.

Wildlife expected to regularly utilize the grassland areas of the BSA include California ground squirrel (*Otospermophilus beecheyi*), western fence lizard (*Sceloporus occidentalis*), gopher snake (*Pituophis catenifer*), black-tailed jackrabbit (*Lepus californicus*), and coyote (*Canis latrans*). Birds that may nest in these grassland communities include northern harrier (*Circus hudsonius*), burrowing owl (*Athene cunicularia*), western kingbird (*Tyrannus verticalis*), loggerhead shrike (*Lanius ludovicianus*), horned lark (*Eremophila alpestris*), western meadowlark (*Sturnella neglecta*), and killdeer (*Charadrius vociferus*).

Isolated trees in the grasslands support potential nesting habitat for red-tailed hawk (*Buteo jamaicensis*), great horned owl (*Bubo virginianus*), and the State-threatened Swainson's hawk (*Buteo swainsoni*). The annual grasslands in this region support a significant population of wintering raptors that include golden eagle (*Aquila chrysaetos*), ferruginous hawk (*Buteo regalis*), red-tailed hawk, rough-legged hawk (*Buteo lagopus*), short-eared owl (*Asio flammeus*), prairie falcon (*Falco mexicanus*), and merlin (*Falco columbarius*).

The riparian woodland or scrub communities in the BSA appear to be restricted to the banks of the Sacramento River and have been largely degraded or developed. Scattered trees and shrubs along the river's edge could support nesting habitat for a variety of birds, including Swainson's hawk, red-tailed hawk, American crow (*Corvus brachyrhynchos*), yellow-billed magpie (*Pica nuttalli*), European starling (*Sturnus vulgaris*), and red-winged blackbird (*Agelaius phoeniceus*). Other wildlife expected to use the riverside communities within the BSA include American bullfrog (*Lithobates catesbeianus*), Sierran tree frog

(*Pseudacris sierra*), red-eared slider (*Trachemys scripta*), valley garter snake (*Thamnophis sirtalis fitchi*), American beaver (*Castor canadensis*), river otter (*Lontra canadensis*), and muskrat (*Ondatra zibethicus*).

Emergent aquatic habitats appear to be restricted to two areas in the northern and western portion of the BSA. Emergent marshes support breeding habitat for birds such as mallard (*Anas platyrhynchos*), song sparrow (*Melospiza melodius*), red-winged blackbird, and tricolored blackbird (*Agelaius tricolor*). Other wildlife likely to be found in the marsh habitats include American bullfrog, red-eared slider, northwestern pond turtle (*Actinemys marmorata*), and valley garter snake.

Wildlife expected to utilize more developed areas of the BSA include raccoon (*Procyon lotor*), Virginia opossum (*Didelphis virginiana*), striped skunk (*Mephitis mephitis*), domestic and feral cats (*Felis catus*), and a variety of birds such as American crow, California scrub-jay (*Aphelocoma californica*), northern mockingbird (*Mimus polyglottos*), barn swallow (*Branta canadensis*), and house sparrow (*Passer domesticus*).

Special-Status Species

Table 5.4-5 presents the full list of special-status plant and animal species identified through the literature review (including “Rio Vista, California” 7.5-minute quadrangle and the surrounding eight quadrangles). For each species, the table provides the listing status, and a brief description of habitat requirements and/or species ecology. Species with at least one mapped CNDDB occurrence within the BSA are indicated by footnote and included in bolded text.

5. Environmental Analysis
BIOLOGICAL RESOURCES

Table 5.4-5 Special-Status Species Documented in or Near the BSA

Common Name (Scientific Name)	Status			Habitat Description/Species Ecology[1]
	FESA	CESA/NPPA	Other	
Plants				
Ferris' milk-vetch *(Astragalus tener* var. *ferrisiae)*	-	-	1B.1	Vernally mesic meadows and seeps and in sub-alkaline flats within valley and foothill grasslands. Elevation: 5'–245' Bloom Period: April–May
Alkali milk-vetch *(Astragalus tener* var. *tener)*	-	-	1B.2	Alkaline playas and vernal pools, and alkaline adobe clay soils in valley and foothill grasslands. Elevation: 5'–195' Bloom Period: March–June
Heartscale *(Atriplex cordulata* var. *cordulata)*	-	-	1B.2	Alkaline or saline valley and foothill grasslands, meadows and seeps, and chenopod scrub communities. Elevation: 0'–1,835' Bloom Period: April–October
Crownscale *(Atriplex coronata* var. *coronata)*	-	-	4.2	Alkaline, often clay substrates in chenopod scrub, valley and foothill grassland, and vernal pools. Elevation: 5'–1,935' Bloom Period: March–October
Brittlescale *(Atriplex depressa)*	-	-	1B.2	Alkaline and clay soils within chenopod scrub, meadows and seeps, playas, valley and foothill grasslands, and vernal pools. Elevation: 5'–1,050' Bloom Period: April–October
Vernal pool smallscale *(Atriplex persistens)*	-	-	1B.2	Alkaline vernal pools. Elevation: 35'–375' Bloom Period: June–October
Big tarplant *(Blepharizonia plumosa* ssp. *plumosa)*	-	-	1B.1	Valley and foothill grassland. Elevation: 100'–1,655' Bloom Period: July–October

Table 5.4-5 Special-Status Species Documented in or Near the BSA

Common Name (Scientific Name)	Status			Habitat Description/Species Ecology[1]
	FESA	CESA/NPPA	Other	
Watershield *(Brasenia schreberi)*	-	-	2B.3	Freshwater marshes and swamps. Elevation: 100'–7,220' Bloom Period: June–September
Bristly sedge *(Carex comosa)*	-	-	2B.1	Mesic valley and foothill grassland, coastal prairie, and lake margins of marshes and swamps. (Jepson eFlora 2023) Elevation: 0'–2,050' Bloom Period: May–September
Pappose tarplant (*Centromadia parryi* ssp. *parryi*)	-	-	1B.2	Often on alkaline soils within chaparral, coastal prairie, meadows and seeps, coastal salt marshes and swamps, vernally mesic valley and foothill grassland. Elevation: 0'–1,380' Bloom Period: May–November
Parry's rough tarplant *(Centromadia parryi* ssp. *rudis)*	-	-	4.2	Alkaline, vernally mesic areas, and seeps in valley and foothill grassland and vernal pools, sometimes found on roadsides. Elevation: 0'–330' Bloom Period: May–October
Soft salty bird's-beak *(Chloropyron molle* ssp. *molle)*	FE	CR	1B.2	Coastal salt marshes and swamps. Elevation: 0'–10' Bloom Period: July–November
Bolander's water-hemlock *(Cicuta maculata* var. *bolanderi)*	-	-	2B.1	Coastal, fresh, or brackish marshes and swamps. Elevation: 0'–655' Bloom Period: July–September
Small-flowering morning-glory *(Convolvulus simulans)*	-	-	4.2	Clay, serpentine seeps within chaparral, coastal scrub, and valley and foothill grassland. Elevation: 100'–2,430' Bloom Period: March–July

5. Environmental Analysis
BIOLOGICAL RESOURCES

Table 5.4-5 Special-Status Species Documented in or Near the BSA

Common Name (Scientific Name)	Status			Habitat Description/Species Ecology[1]
	FESA	CESA/NPPA	Other	
Dwarf downingia *(Downingia pusilla)*	-	-	2B.2	Mesic areas in valley and foothill grassland, and vernal pools. Species has also been found in disturbed areas such as tire ruts and scraped depressions. (CDFW 2023c) Elevation: 5'–1,460' Bloom Period: March–May
Small spikerush *(Eleocharis parvula)*	-	-	4.3	Marshes and swamps. Elevation: 5'–9,910' Bloom Period: June–August
Antioch Dunes buckwheat *(Eriogonum nudum* var. *psychicola)*	-	-	1B.1	Inland dune. Elevation: 0'–65' Bloom Period: July–October
Mt. Diablo buckwheat *(Eriogonum truncatum)*	-	-	1B.2	Sandy soils in chaparral, coastal scrub, valley and foothill grassland. Elevation: 10'–1,150' Bloom Period: April–September
Contra Costa wallflower *(Erysimum capitatum* var. *angustatum)*	FE	CE	1B.1	Inland dunes. Elevation: 10'–65' Bloom Period: March–July
Diamond-petaled California poppy *(Eschscholzia rhombipetala)*	-	-	1B.1	Valley and foothill grassland in alkaline and clay soils. Elevation: 0'–3,200' Bloom Period: March–April
San Joaquin spearscale[2] (*Extriplex joaquinana*)	-	-	1B.2	Alkaline soils in chenopod scrub, meadows seeps, playas, and valley and foothill grassland. Elevation: 5'–2,740' Bloom Period: April–October

Table 5.4-5 Special-Status Species Documented in or Near the BSA

Common Name (Scientific Name)	Status			Habitat Description/Species Ecology[1]
	FESA	CESA/NPPA	Other	
Stinkbells *(Fritillaria agrestis)*	-	-	4.2	Clay and sometimes serpentine soils in chaparral, cismontane woodland, pinyon and juniper woodland, and valley and foothill grassland. Elevation: 35'–5,100' Bloom Period: March–June
Fragrant fritillary *(Fritillaria liliacea)*	-	-	1B.2	Cismontane woodland, coastal prairie, coastal scrub, and valley and foothill grassland, often on serpentine substrates. Elevation: 10'–1,345' Bloom Period: February–April
Boggs Lake hedge-hyssop *(Gratiola heterosepala)*	-	CE	1B.2	Marshes, swamps, lake margins, and vernal pools. Elevation: 35'–7,790' Bloom Period: April–August
Hogwallow starfish *(Hesperevax caulescens)*	-	-	4.2	Mesic areas with clay soil within valley and foothill grassland, shallow vernal pools, and sometimes alkaline areas. Elevation: 0'–1,655' Bloom Period: March–June
Woolly rose-mallow[3] *(Hibiscus lasiocarpos* var. *occidentalis)*	-	-	1B.2	Marshes and freshwater swamps. Often in riprap on sides of levees. Elevation: 0'–395' Bloom Period: June–September
Carquinez goldenbush *(Isocoma arguta)*	-	-	1B.1	Alkaline soils in valley and foothill grasslands. Elevation: 5'–65' Bloom Period: August–December
Alkali-sink goldfields (*Lasthenia chrysantha*)	-	-	1B.1	Alkaline vernal pools. Elevation: 0'–655' Bloom Period: February–April

5. Environmental Analysis
BIOLOGICAL RESOURCES

Table 5.4-5 Special-Status Species Documented in or Near the BSA

Common Name (Scientific Name)	Status			Habitat Description/Species Ecology[1]
	FESA	CESA/NPPA	Other	
Contra Costa goldfields *(Lasthenia conjugens)*	FE	-	1B.1	Mesic sites within cismontane woodland, playas with alkaline soils, valley and foothill grassland and vernal pools. Elevation: 0'–1,540' Bloom Period: March–June
Coulter's goldfields *(Lasthenia glabrata* ssp. *coulteri*)	-	-	1B.1	Coastal marshes and swamps, playas, and vernal pools. Elevation: 5'–4,005' Bloom Period: February–June
Delta tule pea (*Lathyrus jepsonii* var. *jepsonii)*	-	-	1B.2	Freshwater and brackish marshes and swamps. Elevation: 0'–15' Bloom Period: May–July
Legenere *(Legenere limosa)*	-	-	1B.1	Various seasonally inundated areas including wetlands, wetland swales, marshes, vernal pools, artificial ponds, and floodplains of intermittent drainages. (USFWS 2005) Elevation: 5'–2,885' Bloom Period: April–June
Heckard's pepper-grass *(Lepidium latipes* var. *heckardii)*	-	-	1B.2	Alkaline flats within valley and foothill grasslands. Elevation: 5'–655' Bloom Period: March–May
Mason's lilaeopsis *(Lilaeopsis masonii)*	-	-	1B.1	Brackish or freshwater marshes or swamps and riparian scrub. Elevation: 0'–35' Bloom Period: April–November
Delta mudwort (*Limosella australis*)	-	-	2B.1	Usually mud banks in freshwater or brackish marshes and swamps and riparian scrub. Elevation: 0'–10' Bloom Period: May–August

Table 5.4-5 Special-Status Species Documented in or Near the BSA

Common Name (Scientific Name)	Status			Habitat Description/Species Ecology[1]
	FESA	CESA/NPPA	Other	
Abram's lupine (*Lupinus albifrons* var. *abramsii*)	-	-	3.2	Broadleafed upland forest, chaparral, coastal scrub, lower montane coniferous forest, and valley and foothill grassland; sometimes on serpentine substrates. Elevation: 410'–6,560' Bloom Period: April–June
Little mousetail *(Myosurus minimus* ssp. *apus)*	-	-	3.1	Mesic areas of valley and foothill grassland and alkaline vernal pools. Elevation: 65'–2,100' (USACE 2018) Bloom Period: March–June
Baker's navarretia *(Navarretia leucocephala* ssp. *bakeri)*	-	-	1B.1	Vernal pools and mesic areas within cismontane woodlands, lower montane coniferous forests, meadows and seeps, and valley and foothill grasslands. Elevation: 15'–5,710' Bloom Period: April–July
Colusa grass *(Neostapfia colusana)*	FT	CE	1B.1	Large vernal pools with adobe soils. Elevation: 15'–655' Bloom Period: May–August
Antioch Dunes evening-primrose (*Oenothera deltoides* ssp. *howellii*)	FE	CE	1B.1	Inland dunes. Elevation: 0'–100' Bloom Period: March–September
Bearded popcornflower (*Plagiobothrys hystriculus*)	-	-	1B.1	Often in vernal swales, and in mesic areas of valley and foothill grassland and vernal pool margins. Elevation: 0'–900' Bloom Period: April–May
Eel-grass pondweed *(Potamogeton zosteriformis)*	-	-	2B.2	Assorted freshwater marshes and swamps. Elevation: 0'–6,105' Bloom Period: June–July

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Table 5.4-5 Special-Status Species Documented in or Near the BSA

Common Name (Scientific Name)	Status			Habitat Description/Species Ecology[1]
	FESA	CESA/NPPA	Other	
California alkali grass (*Puccinellia simplex*)	-	-	1B.2	Alkaline, vernally mesic areas and sinks, flats and lake margins in chenopod scrub, meadows and seeps, valley and foothill grassland, and vernal pools. Elevation: 5'–3,050' Bloom Period: March–May
Sanford's arrowhead *(Sagittaria sanfordii)*	-	-	1B.2	Shallow marshes and freshwater swamps. Elevation: 0'–2,135' Bloom Period: May–October
Marsh skullcap (*Scutellaria galericulata*)	-	-	2B.2	Mesic areas in lower montane coniferous forest, meadows and seeps, and marshes and swamps. Elevation: 0'–6,890' Bloom Period: June–September
Side-flowering skullcap *(Scutellaria lateriflora)*	-	-	2B.2	Mesic areas in meadows and seeps and marshes and swamps. Elevation: 0'–1,640' Bloom Period: July–September
Sweet marsh ragwort (Senecio hydrophiloides)	-	-	4.2	Mesic areas in lower montane coniferous forest and meadows and seeps. Elevation: 0'–9,185' Bloom Period: May–August
Keck's checkerbloom *(Sidalcea keckii)*	FE	-	1B.1	Serpentine and clay soils within cismontane woodland and valley and foothill grasslands. Elevation: 245'–2,135' Bloom Period: April–May
Suisun Marsh aster[2] (*Symphyotrichum lentum*)	-	-	1B.2	Brackish and freshwater marshes and swamps. Elevation: 0'–10' Bloom Period: May–November

Table 5.4-5 Special-Status Species Documented in or Near the BSA

Common Name (Scientific Name)	Status			Habitat Description/Species Ecology[1]
	FESA	CESA/NPPA	Other	
Saline clover *(Trifolium hydrophilum)*	-	-	1B.2	Marshes and swamps, mesic and alkaline areas in valley and foothill grassland, and vernal pools. Elevation: 0'–985' Bloom Period: April–June
Solano grass *(Tuctoria mucronata)*	FE	CE	1B.1	Vernal pools and other mesic areas of valley and foothill grasslands. Elevation: 15'–35' Bloom Period: April–August
Invertebrates				
Conservancy fairy shrimp (*Branchinecta conservatio)*	FE	-	-	Vernal pools/wetlands. Survey Period: Wet season November–April when surface water is present; dry season May-October.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	FT	-	-	Vernal pools/wetlands. Survey Period: Wet season November–April when surface water is present; dry season May-October.
Vernal pool tadpole shrimp (*Lepidurus packardi*)	FE	-	-	Vernal pools/wetlands. Survey Period: Wet season November–April when surface water is present; dry season May-October.
Delta green ground beetle *(Elaphrus viridis)*	FT	-	-	Vernal pool edges. Currently found only in the greater Jepson Prairie area in south-central Solano County. Active during the first warm days of late winter/ early spring. Returns to dormant phase during the hot, dry summer months. Survey Period: April-November
Western bumble bee *(Bombus occidentalis)*	-	CC	-	Meadows and grasslands with abundant floral resources. Primarily nests underground. Largely restricted to high elevation sites in the Sierra Nevada, although rarely detected on the California coast. Survey Period: April-November

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Table 5.4-5 Special-Status Species Documented in or Near the BSA

Common Name (Scientific Name)	Status			Habitat Description/Species Ecology[1]
	FESA	CESA/NPPA	Other	
Crotch bumble bee *(Bombus crotchii)*	-	CC	-	Primarily nests underground in open grassland and scrub habitats from the California coast east to the Sierra Cascade and south to Mexico. Survey Period: March-September
Lange's metalmark butterfly (*Apodemia mormo langei*)	FE	-	-	Requires specific sand dune habitat that is found only in Antioch Dunes National Wildlife Refuge. Reliant on a specific subspecies of naked buckwheat for its diet as well as reproduction. Survey Period: Late summer
Fish				
Green sturgeon (Southern DPS)[2] (*Acipenser medirostris*)	FT	-	SSC	Anadromous; undammed cold-water rivers having relatively deep pools with large substrates.
Steelhead (CA Central Valley DPS)[2] (*Oncorhynchus mykiss irideus*)	FT	-	-	Fast-flowing, well-oxygenated rivers and streams below dams in the Sacramento and San Joaquin River systems.
Delta smelt[2] (*Hypomesus transpacificus*)	FT	CE	-	Sacramento-San Joaquin Delta.
Longfin smelt[2] (*Spirinchus thaleichthys*)	FC	CT	SSC	Freshwater and coastal estuaries.
Sacramento splittail (*Pogonichthys macrolepidotus*)	-	-	SSC	San Francisco Bay estuary and Central Valley lakes and rivers. Spawns in upstream floodplains and backwater sloughs.
Sacramento perch *(Archoplites interruptus)*	-	-	SSC	Ponds, rivers, backwaters, reservoirs, and lakes in the Central Valley.
Amphibians				

Table 5.4-5 Special-Status Species Documented in or Near the BSA

Common Name (Scientific Name)	Status			Habitat Description/Species Ecology[1]
	FESA	CESA/NPPA	Other	
California tiger salamander (Central California DPS) (*Ambystoma californiense*)	FT	CT	WL	Breeds in vernal pools and seasonal wetlands in grassland or oak woodland habitats; adults are terrestrial using underground refuges such as ground squirrel or gopher burrows. Central Valley and Inner Coast Range. Survey Period: Winter-Spring.
Reptiles				
Northwestern pond turtle (*Actinemys marmorata*)	-	-	SSC	Requires basking sites and upland habitats up to 0.5 km from water for egg laying. Uses ponds, streams, detention basins, and irrigation ditches. Survey Period: April-September
Northern California legless lizard (*Anniella pulchra*)	-	-	SSC	The most widespread of California's *Anniella* species. Occurs in sandy or loose soils under sparse vegetation from Antioch south coastally to Ventura. Bush lupine is often an indicator plant, and two melanistic populations are known. Survey Period: Generally spring, but
California glossy snake (*Arizona elegans occidentalis*)	-	-	SSC	Occurs from the eastern part of the San Francisco Bay Area south to northwestern Baja California. Inhabits arid scrub, rocky washes, grasslands, and chaparral. (Stebbins and McGinnis 2012) Survey Period: April-October
Giant garter snake (*Thamnophis gigas*)	FT	CT	-	Freshwater ditches, sloughs, and marshes in the Central Valley. Almost extirpated from the southern parts of its range. Survey Period: April-October
Birds				
Western grebe *(Aechmophorus occidentalis)*	-	-	BCC	Winters on salt or brackish bays, estuaries, sheltered sea coasts, freshwater lakes, and rivers. Nests on freshwater lakes and marshes with open water bordered by emergent vegetation. Nesting: June-August

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Table 5.4-5 Special-Status Species Documented in or Near the BSA

Common Name (Scientific Name)	Status			Habitat Description/Species Ecology[1]
	FESA	CESA/NPPA	Other	
Clark's grebe (*Aechmophorus clarkii*)	-	-	BCC	Winters on salt or brackish bays, estuaries, sheltered sea coasts, freshwater lakes, and rivers. Breeds on freshwater to brackish marshes, lakes, reservoirs and ponds, with a preference for large stretches of open water fringed with emergent vegetation. Nesting: June-August
Yellow-billed cuckoo (*Coccyzus americanus*)	FT	CE	-	Breeding habitat is generally open woodland with clearings and low, dense, scrubby vegetation associated with watercourses, and includes desert riparian woodlands with willow, Fremont's cottonwood, alder, walnut, box-elder, and dense mesquite. Nests are generally found in deciduous hardwoods with thick bushes, vines, or hedgerows providing dense foliage within 10 meters (33 feet) of ground; prefer riparian patches of at least 81 hectares (200 acres). Winters in South America. (Hughes 2020) Nesting: June 15-August 15
California black rail (*Laterallus jamaicensis coturniculus*)	-	CT	CFP	Salt marsh, shallow freshwater marsh, wet meadows, and flooded grassy vegetation. In California, primarily found in coastal and Bay-Delta communities, but also in Sierran foothills (Butte, Yuba, Nevada, Placer, El Dorado counties). Nesting: March-September
Mountain plover (*Charadrius montanus*)	-	-	BCC, SSC	Breeds in the Great Plains/Midwestern US; winters in California, Arizona, Texas, and Mexico; wintering habitat in California includes tilled fields, heavily grazed open grassland, burned fields, and alfalfa fields. Wintering: September-March
Short-billed dowitcher *(Limnodromus griseus)*	-	-	BCC	Nests in Canada, southern Alaska; winters in coastal California south to South America; wintering habitat includes coastal mudflats and brackish lagoons. Migrant/Wintering: late-August-May

Table 5.4-5 Special-Status Species Documented in or Near the BSA

Common Name (Scientific Name)	Status			Habitat Description/Species Ecology[1]
	FESA	CESA/NPPA	Other	
California gull (nesting colony) *(Larus californicus)*	-	-	BCC, WL	Nesting occurs in the Great Basin, Great Plains, Mono Lake, and south San Francisco Bay. Breeding colonies located on islands on natural lakes, rivers, or reservoirs. Winters along Pacific Coast from southern British Columbia south to Baja California and Mexico. In California, winters along coast and inland (Central Valley, Salton Sea). Nesting: April-August
Double-crested cormorant *(Nannopterum auritum)*	-	-	WL	Nests near ponds, lakes, artificial impoundments, slow-moving rivers, lagoons, estuaries, and open coastlines and typically forages in shallow water. Non-nesters are found in many coastal and inland waters. Nesting: April-August
White-tailed kite (*Elanus leucurus*)	-	-	CFP	Nesting occurs within trees in low elevation grassland, agricultural, wetland, oak woodland, riparian, savannah, and urban habitats. Nesting: March-August
Golden eagle (*Aquila chrysaetos*)	-	-	CFP, WL	Nesting habitat includes mountainous canyon land, rimrock terrain of open desert and grasslands, riparian, oak woodland/savannah, and chaparral. Nesting occurs on cliff ledges, river banks, trees, and human-made structures (e.g. windmills, platforms, and transmission towers). Breeding occurs throughout California, except the immediate coast, Central Valley floor, Salton Sea region, and the Colorado River region, where they can be found during Winter. Nesting: February-August Wintering in Central Valley: October-February
Swainson's hawk[2] (*Buteo swainsoni*)	-	CT	-	Nesting occurs in trees in agricultural, riparian, oak woodland, scrub, and urban landscapes. Forages over grassland, agricultural lands, particularly during disking/harvesting, irrigated pastures. Nesting: March-August

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Table 5.4-5 Special-Status Species Documented in or Near the BSA

Common Name (Scientific Name)	Status			Habitat Description/Species Ecology[1]
	FESA	CESA/NPPA	Other	
Burrowing owl *(Athene cunicularia)*	-	-	BCC, SSC	Nests in burrows or burrow surrogates in open, treeless, areas within grassland, steppe, and desert biomes. Often with other burrowing mammals (e.g., prairie dogs, California ground squirrels). May also use human-made habitat such as agricultural fields, golf courses, cemeteries, roadside, airports, vacant urban lots, and fairgrounds. Nesting: February-August
Nuttall's woodpecker *(Dryobates nuttallii)*	-	-	BCC	Resident from northern California south to Baja California. Nests in tree cavities in oak woodlands and riparian woodlands. Nesting: April-July
American peregrine falcon[2] *(Falco peregrinus anatum)*	De-listed	De-listed	CFP	In California, breeds in coastal region, northern California, and Sierra Nevada. Nesting habitat includes cliff ledges and human-made ledges on towers and buildings. Wintering habitat includes areas where there are large concentrations of shorebirds, waterfowl, pigeons, or doves. CA Residents nest in February-June
Grasshopper sparrow (*Ammodramus savannarum*)	-	-	BCC. SSC	In California, breeding range includes most coastal counties south to Baja California; western Sacramento Valley and western edge of Sierra Nevada region. Nests in moderately open grasslands and prairies with patchy bare ground. Avoids grasslands with extensive shrub cover; more likely to occupy large tracts of habitat than small fragments; removal of grass cover by grazing often detrimental. Nesting: May-August
Belding's savannah sparrow (*Passerculus sandwichensis beldingi*)	-	CE	BCC	Resident coastally from Point Conception south into Baja California; coastal salt marsh. Year-round resident; nests March-August
Song sparrow "Modesto"[2] (*Melospiza melodia heermanni*)	-	-	SSC	Resident in central and southwest California, including Central Valley; nests in marsh, scrub habitat. Nesting: April-June

Table 5.4-5 Special-Status Species Documented in or Near the BSA

Common Name (Scientific Name)	Status			Habitat Description/Species Ecology[1]
	FESA	CESA/NPPA	Other	
Suisun song sparrow (*Melospiza melodia maxillaris*)	-	-	SSC	Resident of brackish marshes of Suisun Bay. Year-round resident; nests March-July
Bullock's oriole (*Icterus bullockii*)	-	-	BCC	Breeding habitat includes riparian and oak woodlands. Nesting: March-July
Tricolored blackbird (*Agelaius tricolor*)	-	CT	BCC, SSC	Breeds locally west of Cascade- Sierra Nevada and southeastern deserts from Humboldt and Shasta counties south to San Bernardino, Riverside and San Diego counties. Central California, Sierra Nevada foothills and Central Valley, Siskiyou, Modoc and Lassen counties. Nests colonially in freshwater marsh, blackberry bramble, milk thistle, triticale fields, weedy (mustard, mallow) fields, giant cane, safflower, stinging nettles, tamarisk, riparian scrublands and forests, fiddleneck and fava bean fields. (Beedy et al. 2020) Nesting: March-August
Saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*)	-	-	BCC, SSC	Breeds in salt marshes of San Francisco Bay; winters San Francisco south along coast to San Diego County. Nesting: March-July
Mammals				
Western red bat (*Lasiurus frantzii*)	-	-	SSC	Roosts in foliage of trees or shrubs; Day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas. There may be an association with intact riparian habitat (particularly willows, cottonwoods, and sycamores). (Western Bat Working Group 2023) Survey Period: April-September
Salt-marsh harvest mouse *(Reithrodontomys raviventris)*	FE	CE	CFP	Saline emergent marsh. Survey Period: Any season

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Table 5.4-5 Special-Status Species Documented in or Near the BSA

Common Name (Scientific Name)	Status			Habitat Description/Species Ecology[1]
	FESA	CESA/NPPA	Other	
American badger *(Taxidea taxus)*	-	-	SSC	Drier open stages of most shrub, forest, and herbaceous habitats with friable soils. Survey Period: Any season

Source: ECORP 2023 (included as Appendix 5.4-1).

Notes:
[1] Habitat descriptions for plant species are from the CNPS Rare Plant Inventory (CNPS 2023a), unless otherwise stated.
[2] Species has at least one mapped CNDDB occurrence within the BSA (CDFW 2023c).

Status Codes:
FESA Federal Endangered Species Act
CESA California Endangered Species Act
FE FESA listed, Endangered
FT FESA listed, Threatened
FC Candidate for FESA listing as Threatened or Endangered
BCC USFWS Bird of Conservation Concern (USFWS 2021)
CE CESA- or NPPA-listed, Endangered.
CT CESA- or NPPA-listed, Threatened.
CR CESA- or NPPA-listed, Rare
CC Candidate for CESA listing as Endangered or Threatened
CFP California Fish and Game Code Fully Protected Species (Sections 3511-birds, 4700-mammals, and 5 050-reptiles/amphibians).
SSC CDFW Species of Special Concern
WL CDFW Watch List
1B CRPR/Rare or Endangered in California and elsewhere.
2B CRPR/Plants rare, threatened, or endangered in California but more common elsewhere.
3 CRPR/Plants About Which More Information is Needed – A Review List.
4 CRPR/Plants of Limited Distribution – A Watch List.
0.1 Threat Rank/Seriously threatened in California (more than 80% of occurrences threatened / high degree and immediacy of threat)
0.2 Threat Rank/Moderately threatened in California (20-80% occurrences threatened/moderate degree and immediacy of threat)
0.3 Threat Rank/Not very threatened in California (<20% of occurrences threatened / low degree and immediacy

Critical Habitat or Essential Fish Habitat

As shown in Figure 5.4-5, the Delta within the BSA is designated Critical Habitat for delta smelt (USFWS 2023b). Based on the literature review, anadromous fish Critical Habitat and essential fish habitat (EFH) for Chinook salmon (Central Valley Spring Run, Sacramento River Winter Run), steelhead (Central Valley Distinct Population Segment [DPS]), and green sturgeon (southern DPS), may be present within the "Rio Vista, California" 7.5-minute quadrangle (NOAA 2016).

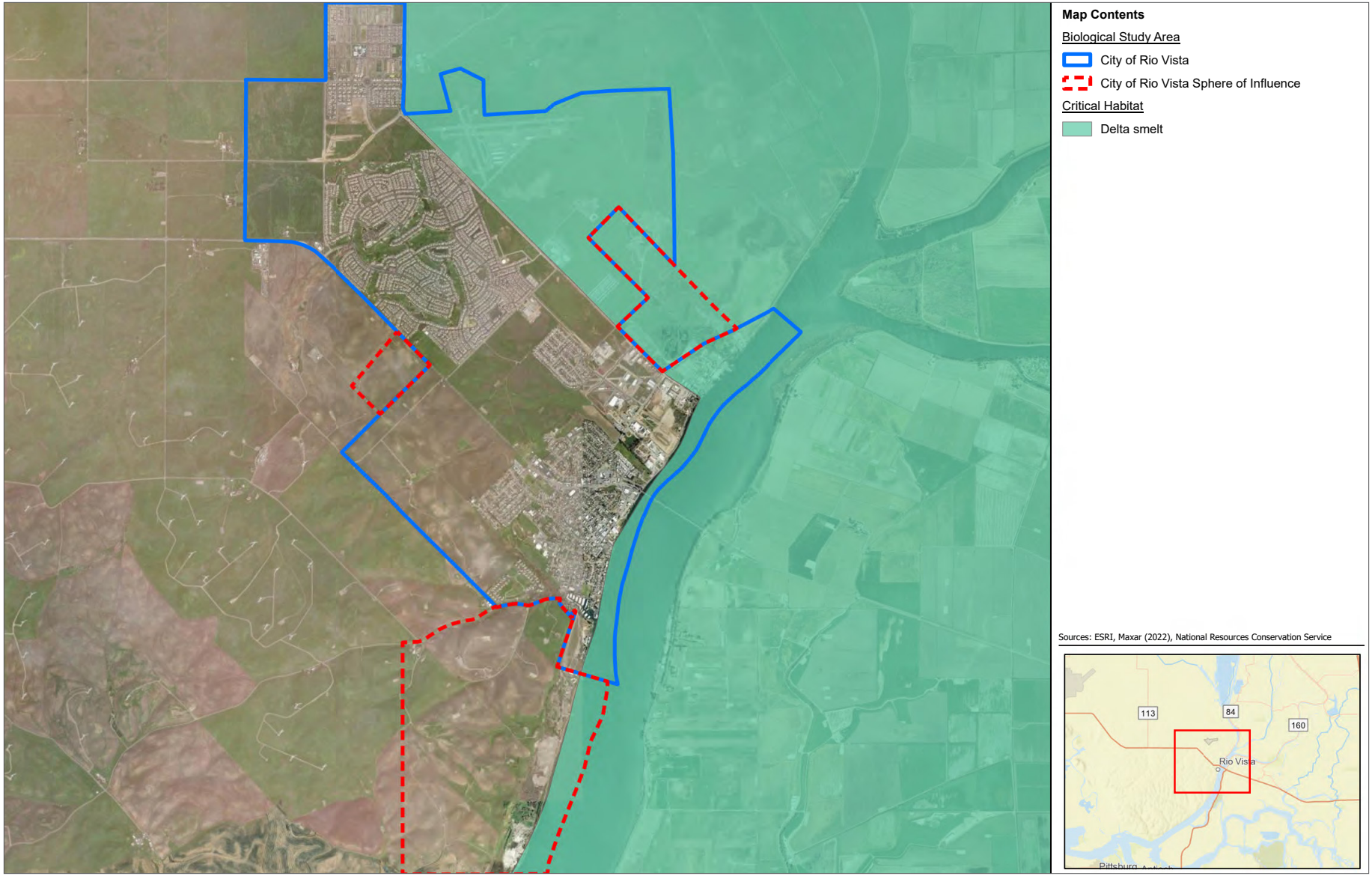
The Sacramento River within the BSA contains EFH for groundfish, which refers to more than 90 different species of roundfish, flatfish, rockfish, sharks, and skates off the West Coast. All Chinook salmon habitat within the BSA is considered EFH for Chinook salmon (NOAA 2023b).

Wildlife Movement Corridors and Nursery Sites

The Sacramento River and Delta within the BSA provides an important migratory corridor for migratory birds of the Pacific Flyway and many fish species, including steelhead (CDFW 2023c). The remainder of the BSA is more limited in suitability for wildlife due to urban development or past and ongoing disturbance from intensive grazing and agricultural uses.

The Essential Connectivity Areas map identifies larger, relatively natural habitat blocks that support native biodiversity and areas essential for connectivity between them (CDFW 2023e). The BSA does not fall within a natural habitat block (CDFW 2023d) or an Essential Habitat Connectivity area (CDFW 2023e). However, the BSA includes small natural areas that could support ecological value (CDFW 2023f) and movement corridors for native resident and migratory wildlife.

The Sacramento River within the BSA provides important spawning grounds for the bay-delta population of longfin smelt and delta smelt, rearing habitat for juvenile green sturgeons, and migration habitat for spawning green sturgeon (CDFW 2023c). Many other habitats within the BSA have potential to support nursery sites for common and special-status species.



Source: ECORP Consulting, Inc., 2023.

Figure 5.4-5
Critical Habitat within the Biological Study Area

5.4.2 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:

B-1 Have a substantial effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS.

B-2 Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS.

B-3 Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

B-4 Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.

B-5 Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

B-6 Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan.

5.4.3 Proposed General Plan Goals and Policies

The following goals, policies, and actions from the proposed General Plan Update are applicable to biological resources.

Open Space and Conservation Element

- **Goal OSC-4:** To preserve the rural landscape and to provide residents access to the hills, wetlands, and waterfronts along the Sacramento River.
- **Goal OSC-5:** To preserve and protect biological resources for their wildlife habitat, aesthetic, and recreational values.
  - **Policy OSC-2:** Create an integrated open space network within the City that links open space and natural habitat resources, recreation areas, schools, downtown, the waterfront, and residential neighborhoods.

- **Policy OSC-4:** Protect open space areas of natural resource and scenic value, including wetlands, riparian corridors, floodplains, woodlands, and hillsides.
- **Policy OSC-5:** Encourage landowners and developers to preserve the integrity of existing terrain and natural vegetation in environmentally-sensitive areas, such as drainage corridors, native riparian habitats, wetlands, and prominent hilltops.
- **Policy OSC-6:** The City shall require that new development be designed and constructed to preserve the following types of areas and features as open space:
  - Scenic and trail corridors
  - Streams and riparian vegetation
  - Wetlands
  - Drainage corridors
  - Significant stands of vegetation
  - Wildlife corridors
  - Views of the Sacramento River
- **Policy OSC-9:** Require new development to mitigate wetland loss in both regulated and non-regulated wetlands to achieve “no net loss” through any combination of the following, in descending order of their desirability: (1) avoidance; (2) where avoidance is not possible, minimization of impacts on the resource; or (3) compensation that provides the opportunity to mitigate impacts on rare, threatened, and endangered species or the habitat that supports these species in wetland and riparian areas.

5.4.4 Environmental Impacts

5.4.4.1 METHODOLOGY

The Draft Biological Resources Assessment prepared by ECORP (Appendix 5.4-1) used the following resources to determine the special-status species that have been documented in or near the BSA and therefore have a potential to occur within the city or may be potentially affected by activities within the city.

- The CDFW CNDDB data for the “Rio Vista, California” 7.5-minute quadrangle and the surrounding eight quadrangles (CDFW 2023c);
- The CNPS Rare Plant Inventory data for the “Rio Vista, California” 7.5-minute quadrangle and the surrounding eight quadrangles (CNPS 2023a);
- The USFWS Information for Planning and Consultation Resource Report List for the BSA (USFWS 2023a); and

- The NMFS Resources data for the "Rio Vista, California" 7.5-minute quadrangle (NOAA 2016).

Impact 5.4-1: Implementation of the proposed project would not 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 plan, policies, or regulations or by the CDFW or USFWS. [Threshold B-1]

Future development in accordance with the proposed project could potentially impact special-status species.

Plants

Within the city limits and its vicinity, there are several sensitive plant species known to occur. As listed in Table 5.4-5, there are a total of 51 special-status plant species in the area. Artificial and unvegetated biological communities, barren, and/or urban areas in the city are unlikely to support special-status plants. However, construction activities within habitat communities could potentially result in significant impacts on special-status plants.

Wildlife

Within the city limits and its vicinity, there are several sensitive animal species known to occur. As listed in Table 5.4-5, there are a total of 42 special-status animal species within the area. Development within or near habitat for special-status wildlife species could result in adverse impacts on these species.

Fish

Impacts on fish from construction-related disturbances include increased sedimentation and turbidity, release of contaminants into surrounding water bodies, noise disturbance, and change in fish habitat. A change in fish habitat could result from the removal of terrestrial vegetation from streambanks, removal of riparian trees and aquatic vegetation, or rip-rapping[2] banks for erosion control. Increases in sedimentation and turbidity have been shown to affect fish physiology, behavior, and habitat. Stress responses are generally higher with increasing turbidity and decreasing particle size. Migrating adult salmonids have been reported to avoid high waterways with silt loads or cease migration when such loads are unavoidable (Cordone and Kelley 1961).

2 Rip-rap banks are composed of rock or other materials that resist erosion by dissipating the energy of flowing water or waves.

Future construction activities may also involve the storage, use, or discharge of toxic and other harmful substances near water bodies or in areas that drain to these water bodies. Heavy construction equipment often use petroleum products, such as fuels, lubricants, hydraulic fluids, and coolants, all of which may be toxic to fish and other aquatic organisms. An accidental spill or inadvertent discharge of these materials could affect the water quality of the river or water body and thereby affect fish or fish habitat.

Impact Significance Determination

The proposed project is a regulatory document that sets the framework for future growth and development in the city and does not directly result in development. Before any development or redevelopment activities would occur in the city, all such activities would be required to be analyzed for conformance with the General Plan, zoning requirements, and other applicable local, State, and federal requirements. Therefore, adoption of the proposed project in itself would not lead to the direct development or redevelopment of a specific project. Future development facilitated by the proposed project could impact special-status species. However, the proposed project contains policies in the Open Space and Resource Conservation Element that would preserve and enhance areas that may provide habitat for special-status species, including the following:

- **Policy OSC-4:** Protect open space areas of natural resource and scenic value, including wetlands, riparian corridors, floodplains, woodlands, and hillsides.
- **Policy OSC-5:** Encourage landowners and developers to preserve the integrity of existing terrain and natural vegetation in environmentally-sensitive areas, such as drainage corridors, native riparian habitats, wetlands, and prominent hilltops.
- **Policy OSC-6:** The City shall require that new development be designed and constructed to preserve the following types of areas and features as open space:
    - Scenic and trail corridors
    - Streams and riparian vegetation
    - Wetlands
    - Drainage corridors
    - Significant stands of vegetation
    - Wildlife corridors
    - Views of the Sacramento River

Compliance with FESA and CESA would require agencies to consult with the USFWS or CDFW on proposed actions that may affect any endangered, threatened, or proposed (for listing) species or critical habitat that may support the species. The MBTA implements international treaties between the U.S. and other nations devised to protect migratory birds, and any of their parts, eggs, and nests, from activities such as hunting, pursuing,

capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. All future development in the city would be required to comply with the MBTA. Section 1600 of the CFGC would require future projects to notify CDFW of any proposed alteration of streambeds, rivers, and lakes with the intention of protecting habitats that are important to fish and wildlife. The NPPA prohibits the take of rare and endangered plants, including special-status plant species and compliance with the NPPA would ensure that endangered or rare native plants are protected.

The goals and policies in the Open Space and Resource Conservation Element of the proposed project and compliance with the policies and regulations under the FESA, MBTA, CESA, CFGC, CWA, and NPPA would ensure impacts to special-status species associated with new development allowed under the proposed project are less than significant.

Level of Significance Before Mitigation: Impact 5.4-1 would be less than significant.

Mitigation Measures

No mitigation measures are required.

Impact 5.4-2: Implementation of the proposed project would not adversely impact sensitive natural communities, including wetlands and riparian habitat. [Threshold B-2 and B-3]

Sensitive natural communities are those that are ranked as critically imperiled, imperiled, or vulnerable, per the State ranking system. Sensitive natural communities in Rio Vista include California vernal pool and grassland matrix, hardstem, and California bulrush herbaceous alliance, Fremont cottonwood woodland alliance, Goodding's willow – red willow riparian woodland and forest, and valley oak woodland and forest. Additional sensitive natural communities may be present, especially within the fresh emergent wetland and valley foothill riparian communities. Riparian habitat is also a component of those communities.

While the city is urbanized, it does contain open space areas with sensitive natural communities such as wetlands and riparian habitats. These habitats may support special-status plant and animal species and are known to be highly productive and diverse ecosystems. The city contains riparian communities, such as riparian woodlands along the banks of the Sacramento River. Implementation of the proposed project would increase development in the city, which could indirectly impact sensitive natural communities with an overall increase in the City’s population (resident and work).

Future development in accordance with the proposed project could impact waters and wetlands jurisdictional to the CDFW, USACE, and San Francisco RWQCB. Waters of the United States are jurisdictional to the USACE; waters of the State are jurisdictional to the San Francisco RWQCB and the CDFW; and wetlands meeting certain criteria are jurisdictional to the USACE and/or the CDFW.

Construction projects in the city would also have the potential to affect riparian habitats by spreading or introducing invasive plant species to currently uninfected areas. Invasive species spread aggressively and crowd out native species, potentially altering the species composition of natural communities. A predominance of invasive species reduces the overall habitat quality for native plants and wildlife. However, the Open Space and Resource Conservation Element of the proposed project includes policies that would mitigate potential impacts on natural communities such as riparian habitat and wetlands, including the following:

- **Policy OSC-4:** Protect open space areas of natural resource and scenic value, including wetlands, riparian corridors, floodplains, woodlands, and hillsides.
- **Policy OSC-5:** Encourage landowners and developers to preserve the integrity of existing terrain and natural vegetation in environmentally-sensitive areas, such as drainage corridors, native riparian habitats, wetlands, and prominent hilltops.
- **Policy OSC-6:** The City shall require that new development be designed and constructed to preserve the following types of areas and features as open space:
    - Scenic and trail corridors
    - Streams and riparian vegetation
    - Wetlands
    - Drainage corridors
    - Significant stands of vegetation
    - Wildlife corridors
    - Views of the Sacramento River
- **Policy OSC-9:** Require new development to mitigate wetland loss in both regulated and non-regulated wetlands to achieve “no net loss” through any combination of the following, in descending order of their desirability: (1) avoidance; (2) where avoidance is not possible, minimization of impacts on the resource; or (3) compensation that provides the opportunity to mitigate impacts on rare, threatened, and endangered species or the habitat that supports these species in wetland and riparian areas.

If the USACE determines that waters of the United States are present, a Section 404 permit from the USACE for placement of fill within waters of the United States and a Section 401 water quality certification from the RWQCB would be required. Placement of fill materials into waters of the United States would require compensation to ensure no net loss of aquatic resources. Additionally, disturbance or alteration of streams, lakes, or non-federally protected (non-jurisdictional) wetlands would require a permit, which would include conditions to protect these sensitive natural communities. A Section 1602 streambed alteration agreement would be needed from the CDFW prior to initiation of project construction activities within the city that would divert, obstruct, or change the natural flow of a river, stream, or lake or that would use material from a streambed. Non-jurisdictional wetlands include wetland features that are not hydrologically connected to navigable waters in rivers and are not under USACE jurisdiction. These wetlands would still be considered waters of the State and would be regulated according to waste discharge requirements that would be issued by the RWQCB.

Implementation of the proposed project goals and policies, with conditions associated with streambed alteration agreements and waste discharge requirements, would ensure that impacts on riparian corridors and other sensitive natural communities are less than significant.

Level of Significance Before Mitigation: Impact 5.4-2 would be less than significant.

Mitigation Measures

No mitigation measures are required.

Impact 5.4-3: Implementation of the proposed project could interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. [Threshold B-4]

The City of Rio Vista contains essential movement corridors for native resident and migratory fish and wildlife species, and development allowed by the proposed project could potentially have adverse impacts on migratory species and corridors.

The Sacramento River and Delta within the BSA provides an important migratory corridor for migratory birds of the Pacific Flyway and many fish species, including steelhead (CDFW 2023c). The remainder of the BSA is more limited in suitability for wildlife due to urban development or past and ongoing disturbance from intensive grazing and agricultural uses. The Essential Connectivity Areas map identifies larger, relatively natural habitat blocks that support native biodiversity and areas essential for connectivity

between them (CDFW 2023e). The BSA does not fall within a natural habitat block (CDFW 2023d) or an Essential Habitat Connectivity area (CDFW 2023e). However, the BSA includes small natural areas that could support ecological value (CDFW 2023f) and movement corridors for native resident and migratory wildlife.

Isolated trees in the grasslands support potential nesting habitat for red-tailed hawk, great horned owl, and the State-threatened Swainson's hawk. The annual grasslands in this region support a significant population of wintering raptors that include golden eagle, ferruginous hawk, red-tailed hawk, rough-legged hawk, short-eared owl, prairie falcon, and merlin. Scattered trees and shrubs along the Sacramento River's edge could support nesting habitat for a variety of birds, including Swainson's hawk, red-tailed hawk, American crow, yellow-billed magpie, European starling, and red-winged blackbird.

The Sacramento River within the BSA provides important spawning grounds for the bay-delta population of longfin smelt and delta smelt, rearing habitat for juvenile green sturgeons, and migration habitat for spawning green sturgeon (CDFW 2023c). Many other habitats within the BSA have potential to support nursery sites for common and special-status species. Development along these areas could occur and could impede movement of native or migratory species.

The Open Space and Resource Conservation Element of the proposed project contains policies that address potential impacts to native resident, migratory fish, and wildlife species and corridors, including the following:

- **Policy OSC-2:** Create an integrated open space network within the City that links open space and natural habitat resources, recreation areas, schools, downtown, the waterfront, and residential neighborhoods.
- **Policy OSC-4:** Protect open space areas of natural resource and scenic value, including wetlands, riparian corridors, floodplains, woodlands, and hillsides.
- **Policy OSC-5:** Encourage landowners and developers to preserve the integrity of existing terrain and natural vegetation in environmentally-sensitive areas, such as drainage corridors, native riparian habitats, wetlands, and prominent hilltops.
- **Policy OSC-6:** The City shall require that new development be designed and constructed to preserve the following types of areas and features as open space:
    - Scenic and trail corridors
    - Streams and riparian vegetation
    - Wetlands
    - Drainage corridors
    - Significant stands of vegetation
    - Wildlife corridors
    - Views of the Sacramento River

As shown in Table 5.4-5, there are 21 special-status bird species within the BSA, five of which are listed and/or considered federally and or State listed (i.e., yellow-billed cuckoo, California black rail, Swainson's hawk, Belding's savannah sparrow, and tricolored blackbird). Additionally, non-special-status migratory birds could nest within the city. Construction activities in or near habitat for special-status birds could interfere with the movement of a native resident or migratory wildlife species. However, as mentioned in CFGC Section 3503 (active bird nests) and the MBTA section, raptors, such as eagles, owls, and other migratory birds and their nests are protected. In addition, CFGC Section 3800 states that it is unlawful to take nongame birds, such as those occurring naturally in California that are not resident game birds, migratory game birds, or fully protected birds, except when in accordance with regulations of the California Fish and Game Commission or a mitigation plan approved by CDFW for mining operations. Therefore, these regulations would ensure the protection of migratory and native bird species.

The proposed project goals and policies, in combination with regulations under the FESA, MBTA, CESA, and CFGC, would reduce potential impacts to migratory species to a less-than-significant level.

Level of Significance Before Mitigation: Impact 5.4-3 would be less than significant.

Mitigation Measures

No mitigation measures are required.

Impact 5.4-4: The proposed project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance, adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan. [Thresholds B-5 and B-6]

The proposed project would not conflict with any local policies or ordinances protecting biological resources. Additionally, Policy OSC-4 seeks to protect open space areas of natural resource and scenic value, including wetlands, riparian corridors, floodplains, woodlands, and hillsides, and Policy OSC-5 encourages landowners and developers to preserve the integrity of existing terrain and natural vegetation in environmentally sensitive areas, such as drainage corridors, native riparian habitats, wetlands, and prominent hilltops. There are no habitat conservation plans, natural communities community conservation plans, or other plans that apply to the proposed project. No impact would occur in this regard.

Level of Significance Before Mitigation: Impact 5.4-4 would have no impact.

Mitigation Measures

No mitigation measures are required.

5.4.5 Cumulative Impacts

The area considered for cumulative impacts on biological resources is the city as well as the northern California region, depending on a species' range. The City of Rio Vista contains a total of 51 special-status plant species and 42 special-status wildlife species known to occur or have the potential to occur in the city. Sensitive natural communities in Rio Vista include California vernal pool and grassland matrix, hardstem and California bulrush herbaceous alliance, Fremont cottonwood woodland alliance, Goodding's willow – red willow riparian woodland and forest, and valley oak woodland and forest. Future development would be required to comply with the policies and regulations under the FESA, MBTA, CESA, CFGC, CWA, and NPPA and to mitigate impacts to special-status species and sensitive habitats to the degree feasible. The City of Rio Vista is built out with urban land uses, and there are no major or regional officially designated wildlife corridors passing through the city.

Furthermore, the proposed project contains goals and policies that mitigate impacts to lands that support sensitive biological resources, including special-status species, sensitive natural communities, federally protected wetlands, and wildlife and fish movement corridors, to a less-than-significant level and that additionally minimize the effects of development on biological resources in general. As such, cumulative impacts are expected to be less than significant, and project impacts would not be cumulatively considerable.

5.4.6 Level of Significance Before Mitigation

After implementing regulatory requirements and goals and policies from the proposed project, all impacts would be less than significant.

5.4.7 Mitigation Measures

No mitigation measures are required.

5.4.8 Level of Significance After Mitigation

Impacts would be less than significant.

5.4.9 References

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5.5 CULTURAL RESOURCES AND TRIBAL CULTURAL RESOURCES

Cultural resources comprise archaeological and historical resources. Archaeology studies human artifacts, such as places, objects, and settlements that reflect group or individual religious, cultural, or everyday activities. Historical resources include sites, structures, objects, or places that are at least 50 years old and are significant for their engineering, architecture, cultural use or association, etc. In California, historic resources cover human activities over the past 12,000 years. Cultural resources provide information on scientific progress, environmental adaptations, group ideology, or other human advancements. Tribal cultural resources include landscapes, sacred places, or objects with a cultural value to a California Native tribe. This section of the Draft Environmental Impact Report (EIR) evaluates the potential for implementation of the proposed project to impact cultural resources and tribal cultural resources in the City of Rio Vista. The analysis in this section is based in part on the following information:

- Cultural Resources Memorandum for City of Rio Vista General Plan Update, Solano County, California, ECORP Consulting, Inc., July 9, 2024.

A complete copy of this study is included as Appendix 5.5-1 to this Draft EIR.

5.5.1 Environmental Setting

5.5.1.1 REGULATORY BACKGROUND

Federal

Archaeological Resources Protection Act

The Archaeological Resources Protection Act (United States Code, Title 16, Sections 470aa–mm) became law on October 31, 1979, and has been amended four times. It regulates the protection of archaeological resources and sites that are on federal and Native American lands.

Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act (United States Code, Title 25, Sections 3001 et seq.) is a federal law passed in 1990 that provides a process for museums and federal agencies to return certain Native American cultural items—such as human remains, funerary objects, sacred objects, or objects of cultural patrimony—to lineal descendants and culturally affiliated Native American tribes.

National Register of Historic Places

The National Register of Historic Places (National Register) is the nation's official list of buildings, structures, objects, sites, and districts worthy of preservation because of their significance in American history, architecture, archaeology, engineering, and culture. It recognizes resources of local, state, and national significance which have been documented and evaluated according to uniform standards and criteria.

Authorized under the National Historic Preservation Act, the National Register is part of the national program to coordinate and support public and private efforts to identify, evaluate, and protect historic and archaeological resources. The National Register is administered by the National Park Service, which is part of the U.S. Department of the Interior.

To be eligible for listing in the National Register, a resource must meet at least one of the following criteria:

- The resource is associated with events that have made a significant contribution to the broad patterns of our history.
- The resource is associated with the lives of persons significant in our past.
- The resource embodies the distinctive characteristics of a type, period, or method of construction, represents the work of a master, possesses high artistic values, or represents a significant and distinguishable entity whose components may lack individual distinction.
- The resource has yielded, or may be likely to yield, information important in history or prehistory.

To retain historic integrity, a property will always possess several and often most of the aspects of integrity. These are location, design, setting, materials, workmanship, feeling, and association.

National Historic Preservation Act

The National Historic Preservation Act of 1966 coordinates public and private efforts to identify, evaluate, and protect the nation's historic and archaeological resources. The act authorized the National Register of Historic Places, which lists districts, sites, buildings, structures, and objects that are significant in American history, architecture, archaeology, engineering, and culture.

Section 106 (Protection of Historic Properties) of the act requires federal agencies to take into account the effects of their undertakings on historic properties. Section 106 review ensures that historic properties are considered during federal project planning and implementation. The Advisory Council on Historic Preservation, an independent federal agency, administers the review process with assistance from state historic preservation offices.

State

California Public Resources Code Sections 5020-5029.5

Public Resource Code (PRC) Sections 5020 to 5029.5 continued the former Historical Landmarks Advisory Committee as the State Historical Resources Commission. The commission oversees the administration of the California Register of Historical Resources and is responsible for designating State Historical Landmarks and Historical Points of Interest.

California Public Resources Code Sections 5079-5079.65

PRC Sections 5079 to 5079.65 define the functions and duties of the Office of Historic Preservation, which administers federal- and state-mandated historic preservation programs in California as well as the California Heritage Fund.

California Public Resources Code Sections 5097.9-5097.991

Archaeological resources are protected pursuant to a wide variety of State policies and regulations enumerated under the PRC. In addition, cultural resources are recognized as a nonrenewable resource and therefore receive protection under the California PRC and California Environmental Quality Act (CEQA).

PRC Sections 5097.9–5097.991 provide protection to Native American historical and cultural resources, and sacred sites and identifies the powers and duties of the Native American Heritage Commission (NAHC). PRC Sections 5097.9-5097.991 also require notification to descendants of discoveries of Native American human remains and provides for treatment and disposition of human remains and associated grave goods.

California Public Resources Code Sections 21073 and 20174

Public Resource Code Sections 21073 and 21074 define California Native American tribe and tribal cultural resources, respectively. PRC Section 21073 defines a “California Native American tribe” as a Native American tribe in California that is on the contact list maintained by the NAHC.

Tribal cultural resources are defined in PRC Section 21074 as sites, features, places, cultural landscapes (geographically defined in terms of the size and scope), sacred places, and objects with cultural value to a California Native American tribe that are either included in or determined to be eligible for inclusion in the California Register of Historical Resources (CRHR), or are included in a local register of historical resources as defined in PRC Section 5020.1(k), or are a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in PRC Section 5024.1(c).

California Health and Safety Code

California Health and Safety Code Section 7050.5 requires that if human remains are discovered in the project area, disturbance of the site shall halt and remain halted until the coroner has conducted an investigation into the circumstances, manner, and cause of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative. If the coroner determines that the remains are not subject to his or her authority and recognizes or has reason to believe the human remains are Native American, he or she shall contact, by telephone within 24 hours, the NAHC.

California Register of Historical Resources

The State Historical Resources Commission has designed this program for use by State and local agencies, private groups, and citizens to identify, evaluate, register, and protect California's historical resources. The CRHR is the authoritative guide to the state's significant historical and archaeological resources.

The CRHR program encourages public recognition and protection of resources of architectural, historical, archaeological, and cultural significance; identifies historical resources for State and local planning purposes; determines eligibility for state historic preservation grant funding; and affords certain protections under CEQA.

To be eligible for listing in the CRHR, a resource must meet at least one of the following criteria:

- Is associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States.

- Is associated with the lives of persons important to local, California, or national history.
- Embodies the distinctive characteristics of a type, period, region, or method of construction; represents the work of a master; or possesses high artistic values.
- Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

In addition to having significance, resources must have integrity for the period of significance. The period of significance is the date or span of time within which significant events transpired or significant individuals made their important contributions. Integrity is the authenticity of a historical resource's physical identity as evidenced by the survival of characteristics or historic fabric that existed during the resource's period of significance. Alterations to a resource or changes in its use over time may change its historical, cultural, or architectural significance. Simply, resources must retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance. A resource that has lost its historic character or appearance may still have sufficient integrity for the CRHR under Criterion 4 if it maintains the potential to yield significant scientific or historical information or specific data.

California Historic Building Code

The California Historic Building Code—California Code of Regulations, Title 24, Part 8—provides regulations for the preservation, restoration, rehabilitation, relocation, or reconstruction of buildings or properties designated as qualified historical buildings or properties. The California Historic Building Code is intended to provide solutions for the preservation of qualified historical buildings or properties, to promote sustainability, to provide access for persons with disabilities, to provide a cost-effective approach to preservation, and to provide for the reasonable safety of the occupants or users.

California Historical Landmarks

California Historical Landmarks are buildings, structures, sites, or places that have been determined to have statewide historical significance. The resource must be approved for designation by the county Board of Supervisors or the city council in whose jurisdiction it is located; be recommended by the State Historical Resources Commission; and be officially designated by the Director of California State Parks. A resource must meet at least one of these following criteria:

- Be the first, last, only, or most significant of its type in the state or within a large geographic region (northern, central, or southern California).
- Be associated with an individual or group having a profound influence on the history of California.
- Be 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.

California Points of Historical Interest

California Points of Historical Interest are sites, buildings, features, or events that are of local (city or county) significance and have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other value. Points of Historical Interest designated after December 1997 and recommended by the State Historical Resources Commission are also listed in the CRHR. No historical resource may be designated as both a landmark and a point of interest. If a point of interest is subsequently granted as a landmark, the point designation is retired.

To be eligible for designation as a Point of Historical Interest, a resource must meet at least one of the following criteria:

- Be the first, last, only, or most significant of its type in the local geographic region (city or county).
- Be associated with an individual or group having a profound influence on the history of the local area.
- Be a prototype of, or an outstanding example of, a period, style, architectural movement or construction type, or be one of the more notable works or the best surviving work in the local region of a pioneer architect, designer, or master builder.

California Senate Bill 18 (SB 18)

Existing law provides limited protection for Native American prehistoric, archaeological, cultural, spiritual, and ceremonial places. These places may include sanctified cemeteries, religious sites, ceremonial sites, shrines, burial grounds, prehistoric ruins, archaeological or historic sites, Native American rock art inscriptions, or features of Native American historic, cultural, and sacred sites.

SB 18 was signed into law in September 2004 and went into effect on March 1, 2005. It placed new requirements on local governments for developments within or near "traditional tribal cultural places" (TTCP). Per SB 18, the law requires local jurisdictions to provide opportunities for involvement of California Native American tribes in the land planning process for the purpose of preserving traditional tribal cultural places. The Office of Planning and Research's Tribal Consultation Guidelines, adopted on November 14, 2005, provides advisory guidance to cities and counties on the process for consulting with Native American tribes during the adoption or amendment of local general plans or specific plans; the Tribal Consultation Guidelines recommend that the NAHC provide written information as soon as possible but no later than 30 days after receiving a request to inform the lead agency if the proposed project is determined to be in proximity to a TTCP and another 90 days for tribes to respond to notices provided by local governments if they want to consult to determine whether the project would have an adverse impact on the TTCP. There is no statutory limit on the consultation duration. Prior to the adoption or amendment of a general plan or specific plan, a local government must refer the proposed action to those tribes that are on the NAHC contact list and have traditional lands located in the city or county's jurisdiction; the referral must allow a 45-day comment period. The CEQA public distribution list shall include tribes provided by the NAHC. If the NAHC, the tribe, and interested parties agree upon the mitigation measures necessary for the proposed project, they would be included in the project's EIR.

SB 18 is triggered before the adoption, revision, amendment, or update of a city's or county's general plan. Although SB 18 does not specifically mention consultation or notice requirements for the adoption or amendment of specific plans, the Final Tribal Guidelines advises that SB 18 requirements extend to specific plans as well, because State planning law requires local governments to use the same process for amendment or adoption of specific plans as general plans (defined in Government Code Section 65453). In addition, SB 18 provides a new definition of TTCP requiring a traditional association of the site with Native American traditional beliefs, cultural practices, or ceremonies, or the site must be shown to have been used for activities related to traditional beliefs, cultural practices, or ceremonies. (Previously, the site was defined to require only an association with traditional beliefs, practices, lifeways, and ceremonial activities). SB 18 also amended Civil Code Section 815.3 and added California Native American tribes to the list of entities that can acquire and hold conservation easements for the purpose of protecting their cultural places.

California Assembly Bill 52

Assembly Bill (AB) 52 took effect July 1, 2015, and requires inclusion of a new section in CEQA documents titled Tribal Cultural Resources, which include heritage sites. Under AB 52, a tribal cultural resource is defined similar to tribal cultural places under SB 18—sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either included or eligible for inclusion in the California Register of Historic Resources or included in a local register of historical resources. Or the lead agency, supported by substantial evidence, chooses at its discretion to treat the resources as a tribal cultural resource.

Similar to SB 18, AB 52 requires consultation with tribes at an early stage to determine whether the project would have an adverse impact on any tribal cultural resources and if so, to identify mitigation measures to protect them. Per AB 52, within 14 days of deciding to undertake a project or determining that a project application is complete, the lead agency must provide formal written notification to all tribes who have requested it. The tribe then has 30 days from receiving the notification to respond if it wishes to engage in formal consultation. The lead agency must initiate consultation within 30 days of receiving the request from the tribe. Consultation concludes when both parties have agreed on measures to mitigate or avoid a significant effect to a tribal cultural resource, or a party, after a reasonable effort in good faith decides that mutual agreement cannot be reached. Regardless of the outcome of consultation, the CEQA document must disclose significant impacts on tribal cultural resources and discuss feasible alternatives or mitigation that avoid or lessen the impact.

Mills Act

Under the Mills Act, California Government Code Sections 50280 et seq., a city or county may contract with the owner of any qualified historical property to restrict the use of the property. The owner continues to preserve the property and the State reduces property taxes. The City is not currently opted into the Mills Act (OHP 2023).

5.5.1.2 EXISTING CONDITIONS

Ethnographic History

Rio Vista is in the western portion of the territory occupied by the Eastern Miwok; however, it is also approximately eight miles east of the territory occupied by the Patwin. Given that Rio Vista, including the Sphere of Influence (SOI), is within an area of cultural overlap, this section includes the ethnographic histories for both the Eastern Miwok, specifically the Plains Miwok, and the Patwin.

Ethnographically, the City and SOI is in the western portion of the territory occupied by the Utian-speaking Eastern Miwok. The Eastern Miwok is made up of three groups: the Plains Miwok, who occupied the area between Freeport and Rio Vista along the Sacramento River, and extends eastward along the Mokelumne and Cosumnes rivers; the Bay Miwok, who occupied the Sacramento-San Joaquin Delta area west to the eastern portion of Contra Costa County; and the Sierra Miwok, who occupied the foothill region south of the Cosumnes River to the upper drainages of the Chowchilla and Merced Rivers (Levy 1978).

The City and SOI are on the margin of the Plains Miwok area, which includes tribelets along the Sacramento, Cosumnes, and Mokelumne Rivers. Tribelets were the primary political units and had defined boundaries that excluded resource use by members of other tribelets. Tribelets often consisted of a population of 300 to 500 people. Within each tribelet were permanent settlements, as well as seasonal hunting and gathering campsites (Levy 1978). A total of 28 tribelets made up the Plains Miwok, and according to Bennyhoff (1977), tribelets would sometimes group together to form larger units, such as the Mokelumne, the Cosumnes, and the North Delta groups.

Subsistence for the Plains Miwok centered on hunting, gathering, and fishing within the confines of their tribelet areas. During the fall and early winter, acorns were gathered, stored, and processed for consumption year-round. Acorns were the main staple in the Plains Miwok diet, with at least seven different types available; acorns from valley oaks were the most commonly used. In addition to acorns, seeds and roots were also important food items, gathered primarily in the summer (Levy 1978). Hunting of game animals occurred during the winter months with deer, tule elk, and antelope being the most common. These animals were hunted individually and by families and tribelets. Smaller game, such as rabbits and various waterfowl, were also hunted, but were usually taken by trapping. The dominant aquatic resource for the Plains Miwok was salmon, which was caught primarily using nets but also by harpoons during the spring and summer months. Sturgeons were also fished using a line and hook (Levy 1978).

Among the Plains Miwok, the most common dwelling unit consisted of conical-shaped thatched structures with grasses, brush, and tules applied to the exterior. Wealthier people, or those of higher status, sometimes lived in earthen semi-subterranean dwellings. At the center of the village were roundhouses or assembly houses. These large gathering structures were usually composed of a 40- to 50-foot-diameter pit dug down to about 3 to 4 feet below the surface. The structure had a planked roof with a layer of earth on top and resembled a mound (Levy 1978).

The role of tribelet chief was passed down from father to son. The chief was responsible for advising the tribe, managing the natural resources of the area, acting as a delegate between the other tribes, and serving as leaders during times of war. The chief had control of religious and social gatherings, as well as acting as the deciding body in times of arguments and disputes (Aginsky and Aginsky 1947). Under the chief were messengers and speakers. The roles of messengers were to deliver invitations to ceremonies and to announce during ritual ceremonies. The titles of messengers were passed down to males within the families, in the same fashion as the chief. The roles of the speakers were to gather food contributions and ritual paraphernalia for ceremonies, and to make announcements for the chief regarding food preparation and gathering. The speaker's position was an elected one and there were speakers elected for each settlement within the tribelet.

The Plains Miwok came into contact with European culture beginning in the late 1700s as a result of increased incursions into the area by the Spanish. Traditional lifeways were drastically altered during the early to mid-1800s as Spanish colonization and proselytization, Mexican land grants, and the American takeover and settlement pushed indigenous peoples into the rugged California interior and reduced their numbers through transport to the missions, introduction of disease, and abuse and violence.

According to Levy (1978), the nearest village is the Anizumne, located approximately 1.5 miles north of the city along the western bank of the Sacramento River. There is a single previously recorded pre-contact isolate within the city limits. A tribelet center may have been at Rio Vista, or on a knoll approximately 0.5 mile north of Rio Vista near a marsh along the western bank of the Sacramento River.

Patwin

Patwin territory includes both the River Patwin and Hill Patwin and extends from the southern portion of the Sacramento River Valley to the west of the river, from the town of Princeton south to San Pablo and Suisun bays. As a language, Patwin (meaning "people") is part of the Wintu linguistic family, which has three main groups: Southern, or Patwin; Central, of Glenn and Tehama Counties; and the Northern, of the upper Sacramento, lower Pit, and the upper Trinity drainages (Johnson 1978). The Hill Patwin territory includes the lower hills of the eastern Coast Range Mountain slope (Long, Indian, Bear, Capay, Cortina, and Napa Valley). Between there and the foothills, the grassy plains were largely unsettled, used mainly as a foraging ground by both valley and hill groups (Johnson 1978). Patwin pre-contact population numbers are not precise,

but Kroeber (1932) estimates 12,500 for the Wintu, Nomlaki, and Patwin groups. These numbers reflect groups prior to the 1833 malaria epidemic.

Individual and extended families “owned” hunting and gathering grounds, and trespassing was discouraged. Residence and marriage were generally matrilocal, but unrestricted. Politically, the Patwin were divided into “tribelets,” made up of a primary village and a series of outlying hamlets, presided over by a more-or-less hereditary chief. Villages typically included family dwellings, acorn granaries, a sweathouse, and a dance house, owned by the chief. The chief had unrestricted power and presided over economic and ceremonial decisions (Johnson 1978).

Subsistence activities centered around fishing and hunting of deer, Tule elk, antelope, bear, ducks, geese, quail, turtles, fish, and other small animals. Hunting of deer often took the form of communal drives, with the actual killing of the deer performed by individuals or groups. Decoys were used for attracting such game as deer and ducks. Nets and holding pens were used for fishing, which was also an important part of normal subsistence activities. Types of fish included sturgeon, salmon, perch, chub, sucker, hardhead, pike, trout, steelhead, and mussels. Although acorns were the staple of the Patwin diet, they also harvested sunflower, alfilaria, clover, bunchgrass, wild oak, and yellow flower, which was parched or dried, then pounded into a meal. Buckeye, pine nuts, juniper berries, manzanita berries, blackberries, wild grapes, Brodiaea bulbs, and tule roots were also collected. Each village had its own location for these food sources, and the village chief was in charge of assigning particular families to each collecting area. Game was prepared by roasting, baking, or drying the meat. Tobacco was collected along the river and inhaled but not cultivated. Salt was scraped off rocks (in the Cortina region) or by burning grass found in the plains (Johnson 1978).

Patwin houses were built in the form of a dome, using tree branches for the framing, then covered with thatch and earth. House floors were typically dug out and the walls were built up as a mound, with the entrance to the building made through the roof (Powers 1976). As described by Kroeber (1925) and Johnson (1978), the closest village location was Moso, on the north bank of Cache Creek around the town of Capay. No cultural material has been located or observed to support this claim.

One of the most distinctive aspects of the Patwin culture was the cult system, found throughout northern central California. The main feature of the cult was the occurrence of one or more secret societies whose membership was by strict initiation, each with its own series of dances and rituals (Johnson 1978). Patwin culture is most distinctive in that it possessed three secret societies: the ghost, Hesi, and Kuksu. These involved

elaborate ceremonial activities consisting of singing and dancing (Foster 1995). Membership included mostly males, beginning around the ages of 8 to 16, but on limited occasions, included high status women (Johnson 1978). Everyday Patwin life centered on the rituals performed within the secret societies. Details involving the ceremonies varied, but most had sacred dances requiring careful preparation, costume, and music. These dances could last several days. Detailed summaries are provided by Kroeber (1932) and Loeb (1933).

Regional History

The first significant European settlement of California began during the Spanish Period (1769 to 1821) when 21 missions and 4 presidios were established between San Diego and Sonoma. Although located primarily along the coast, the missions dominated much of the California region during this period. The purpose of the missions and presidios was to establish Spanish economic, military, political, and religious control over the Alta California territory. This included the forced conversion of the native population to Spanish colonial society and Catholicism, which often consisted of subjugating Native Americans into a life of servitude to Spanish citizens (Castillo 1978; Cleland 1941). The nearest missions to the Delta region were Mission San Rafael established near San Rafael in 1817 and Mission San Francisco Solano, established in Sonoma in 1823. A mission outpost, or *asistencia*, was established at the confluence of the Santa Clara River and Castaic Creek in 1804 (Castillo 1978).

The Mexican Period (1821 to 1848) began with the success of the Mexican Revolution in 1821, but changes to the mission system were slow to follow. When secularization of the missions occurred in the 1830s, the vast land holdings of the missions in California were divided into large land grants called *ranchos*. The Mexican government granted ranchos throughout California to Spanish and Hispanic soldiers and settlers (Castillo 1978).

In 1848, the Treaty of Guadalupe Hidalgo ended the Mexican-American War and marked the beginning of the American Period (1848 to present). The discovery of gold the same year initiated the 1849 California Gold Rush, bringing thousands of miners and settlers to California, most of whom settled in the north. For those settlers who chose to come to southern California, much of their economic prosperity was fueled by cattle ranching rather than by gold. This prosperity, however, came to a halt in the 1860s as a result of severe floods and droughts, which put many ranchers into bankruptcy (Castillo 1978; Cleland 1941).

The earliest recorded settlement in the area was established by General John Bidwell in 1844, after petitioning the Mexican government for rights to the Ulpinos Grant. After the Mexican government lost its claim to California, a patent was issued to Bidwell in 1866 by the United States government for 17,726 acres. By the time the patent was issued, Bidwell had already sold portions of the land grant to various parties who then entered a suit for partition leading to clear ownership of titles.

History of Rio Vista

In 1855, Colonel Nathan H. Davis purchased six lots of the Los Ulpinos Land Grant from John Bidwell with the intent to subdivide the lots in part for a town. In 1857, Colonel Davis surveyed a plat on Lot No. 3 for the new settlement. It was located approximately one mile south of the confluence of Cache Slough and the Sacramento River, near three branches of the river. He named the settlement *Brazos del Rio*, or Arms of the River, given its location to multiple Sacramento River tributaries. Over the next five years, several buildings were erected; the first being Colonel Davis's home. In 1858, a post office was established with the caveat that the settlement's name be changed. The founding settlers agreed on *Vista del Rio*; however, this was only used for a short period of time. The wife of postmaster Charles Kirkpatrick changed the name once more and chose *Rio Vista*, which translates to River View, and the settlement began to thrive. That same year, a daily steamship service was established between Sacramento and San Francisco, and Rio Vista was the main port of call between the two cities. In December 1861, a heavy winter storm destroyed and swept away several of the smaller buildings. The worst of the storm arrived on January 9, 1862, which brought a surplus of rain and wind that caused the river and tributaries to rise above the banks and flooded the town (Pezzaglia 2023). The entire town was completely under water.

In March 1862, four of the original inhabitants, Samuel R. Perry, John M. Sidwell, William K. Squires, and Issac Dunham visited Joseph Bruning, who owned additional plots of land in the Montezuma Hills to the west and southwest of the City of Rio Vista and within the Los Ulpinos Land Grant, to obtain land on which to re-establish their town (Pezzaglia 2023). This area was on higher ground and located approximately one mile south of the original settlement. Mr. Bruning, along with T. J. McWorthy, who owned land adjacent to Mr. Bruning's, provided, surveyed, and recorded the town plat for the "New Rio Vista." The dividing line between the two properties was selected to be Rio Vista's Main Street. Rio Vista became a prosperous town and one of the largest providers of fresh fish and canned salmon that were shipped to San Francisco and beyond (Rio Vista Chamber of Commerce 2023).

Water was supplied to the town from the Sacramento River and was lifted by steam pumps to water tanks near the town center. The reclamation of surrounding swampland has also led to the increase of agricultural production in the vicinity (Palmer 1879). The dark soils of the Montezuma Hills were first used for grazing but were later used for grain production, which continues today. By the 1870s, three warehouses had been constructed to store the high yield of grain before being distributed to markets via steamships (Rio Vista Chamber of Commerce 2023). In the same decade, the clamshell dredge was developed, which would take mud from the bottom of waterways called "slickens" and was deposited on shore to construct levees. The levees were constructed to protect the Delta from inundation and to provide consistent irrigation to agricultural fields (California Delta 2023). In 1894, Rio Vista was incorporated as a city.

In the mid-1930s, natural gas was discovered in the Montezuma Hills region, making the area the largest gas field in northern California. Presently, several shut-in gas wells, some of which overlie gas well sites from the 1930s, are spread across the city and SOI within fenced perimeters. The main sources of employment and commerce for the city are agriculture, manufacturing, and tourism activities. The town has also become part of the commuting belt for the surrounding cities (Rio Vista Chamber of Commerce 2006).

Records Search

The records search consisted of a review of previous research and literature, records on file with the Northwest Information Center for previously recorded resources, and aerial photographs and maps of the vicinity.

Forty previous cultural resource investigations have been conducted within the city and SOI. The records search also determined that 41 previously recorded cultural resources are within the city and SOI. Of the 41 cultural resources, one is a pre-contact obsidian core isolate likely associated with Native American habitation in the vicinity of the SOI. The remaining 40 previously recorded cultural resources are historic-era resources that are associated with twentieth century residences, businesses, farming, ranching, and forms of transportation such as roadways, waterways, and wharfs and barges. Appendix 5.5-1 lists the resources located within the SOI.

Records

The Office of Historic Preservation's (OHP's) Built Environment Resource Directory (BERD) for Solano County (dated April 5, 2018, plus updates) lists 45 built environment resources in Rio Vista. Of the 45 listed built environment resources, 29 of them are buildings associated with the Rio Vista Army Reserve Center. Each of the 29 Army

Reserve buildings were evaluated and determined not eligible for the NRHP through the Section 106 process; however, they were not evaluated for the CRHR or local listing.

The National Register Information System (NPS 2023) failed to indicate any listed resources in the SOI or city. The nearest listed resource is the Delta King, a paddlewheel riverboat (78000797). The Delta King was originally built in Glasgow, Scotland, and assembled in Stockton, California. It was christened in May 1927 (Delta 2017). At the time of the National Register submittal in 1978, the Delta King was anchored approximately three miles north of Rio Vista along California State Highway 84 near the intersection of River and Airport Roads; however, the Delta King has been permanently moored in Old Sacramento and has been operating as a hotel, bar and restaurant, and entertainment venue since 1989.

The OHP's register of California Historical Landmarks did not list any landmarks in the SOI or the City of Rio Vista. The nearest listed landmark is No. 779, Rockville Stone Chapel, approximately 26 miles west of Rio Vista.

The California Inventory of Historic Resources lists 30 sites in Solano County; however, there are no sites listed in Rio Vista.

A review of the Solano County local historical registry did not reveal any resources in the city or SOI.

Map and Aerial Photograph Review

The review of aerial photographs and maps of the SOI provides information on the past land uses of the property and potential for buried archaeological sites. The following is a summary of the review of maps and aerial photographs.

- The 1910 U.S. Geological Survey (USGS) Rio Vista, California, topographic quadrangle map (1:31,680 scale) depicts a large island in the Sacramento River as Wood Island east of Rio Vista. Several structures are depicted on the island. The city grid of Rio Vista is labeled as such on the western side of the Sacramento River. The map also depicts a dirt road that contours the western bank of the river. The southern side of Rio Vista is depicted as gently rolling hills adjacent to swampland along the river at the base of the hills. Two map features, Pier No. " and Benchmark 29 are labeled as such south of the city grid. Benchmark 23 is labeled as such west of the city grid. Several roads, such as present-day River Road and Montezuma Hills Road, and internal city roads are depicted on the map.

- A 1934 aerial photograph shows the city and SOI on the western side of the Sacramento River. A paved road that leads to an east- to west-oriented bridge is visible crossing the river providing access to and from the western bank, where Rio Vista is situated, to the eastern bank, where numerous agricultural fields are shown. This road corresponds to present-day Highway 12. The city grid is visible near the river on the southern side of present-day Highway 12. The northern side of present-day Highway 12 consists mostly of agricultural fields and an industrial complex composed of several rectangular buildings. A north-south paved road parallels the river. This road corresponds to present-day River Road/Highway 84. The aerial photograph no longer shows the island within the river.
- The 1936 USGS Rio Vista, California, topographic quadrangle map does not depict any notable changes compared to the 1910 topographic map.
- A 1937 aerial photograph does not show any notable changes compared to the 1934 aerial photograph.
- The 1947 USGS Sacramento, California, topographic quadrangle map (1:250,000 scale) depicts State Highway 12 labeled as such. The map also depicts a single-track railroad along the western bank of the Sacramento River. The track terminates in Rio Vista; however, the city grid is not depicted on this topographic map compared to the 1936 topographic map.
- The 1953 USGS Rio Vista, California, topographic map (1:24,000 scale) depicts a significant amount of development compared to the 1947 topographic map. The map depicts a two-lane road with a “drawbridge” crossing the Sacramento River. This drawbridge is the same one shown on the 1934 aerial. An area labeled “Military Res” is shown south of the city grid and west of the Sacramento River. A tide gage and two USGS benchmarks are depicted within the military base. Several structures are depicted, north of Highway 12; most of the structures are shown in the 1934 aerial photograph. Other newly mapped features in the vicinity of Rio Vista include an airport landing strip, multiple gas wells, multiple water tanks, a windmill, a pumping station, two cemeteries, a high school, several unimproved roads, and two tributaries that converge on the northern side of the military base and flow into the Sacramento River.
- The 1957 aerial photograph does not show any major developmental changes compared to the 1955 topographic map.
- A 1959 aerial photograph shows the construction of roadways for development on the northern side of Highway 12. The photograph does not show any changes to the military base; however, several ships are moored in the river adjacent to the base.

- The 1964 and 1965 aerial photographs show an increase in residential development to the southeastern, northeastern, and northwestern perimeters of the city. The marina, adjacent to the military base, appears to have been widened for the construction of several covered boat docks. Additionally, the drawbridge has been realigned straight across and now contains the addition of two towers.
- The 1974 aerial photograph shows further residential and structure development in the central area of the city as well as to the northwest.
- The 1984, 1987, and 1993 aerial photographs appear relatively unchanged compared to the 1974 aerial photograph.
- The 2005 aerial photograph shows additional residential development in the south-southwest of the city adjacent to the northern side of Montezuma Hills Road.
- The 2012 USGS Rio Vista, California, topographic quadrangle map (1:24,000 scale) shows further road development to the north and west of the central area of Rio Vista. The marina appears relatively unchanged.

The records search indicated that 41 previously recorded cultural resources are within the city and SOI, including buildings, structures, and historic and pre-contact archaeological resources. There are buildings and structures in the City of Rio Vista that still retain elements from the mid-1800s, when the city was first inhabited. The 29 Rio Vista Army Reserve Center buildings were determined ineligible for the NRHP. There is the potential for previously unknown surficial and/or buried pre-contact cultural resources located near the waterway of the Sacramento River. Careful consideration of these resources should be included in future development of the city and SOI.

Assembly Bill 52 Consultation

On October 30, 2024, the City notified 12 tribes, pursuant to AB 52, that have requested to be notified of all projects within the tribe's area of traditional and cultural affiliation. The City did not receive any responses from the tribes and tribal contacts.

Senate Bill 18 Consultation

The City requested a local government tribal consultation list from the NAHC on August 21, 2024. On October 30, 2024, the City reached out to 12 tribes and tribal contacts, provided by the NAHC, as part of the SB 18 consultation process. The City did not receive any responses from the tribes and tribal contacts.

5.5.2 Thresholds of Significance

CEQA Guidelines Section 15064.5 provides direction on determining significance of impacts to archaeological and historical resources. Generally, a resource shall be considered "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources:

- Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- Is associated with the lives of persons important in our past;
- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- Has yielded, or may be likely to yield, information important in prehistory or history (PRC Section 5024.1; 14 CCR Section 4852)

The fact that a resource is not listed in the California Register of Historical Resources, not determined to be eligible for listing, or not included in a local register of historical resources does not preclude a lead agency from determining that it may be a historical resource.

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

C-1 Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5.

C-2 Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5.

C-3 Disturb any human remains, including those interred outside of dedicated cemeteries.

TCR-1 Cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC Section 21074 as either a site, feature, place, or cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PRC Section 5020.1(k), or

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

5.5.3 Proposed General Plan Goals and Policies

The following goals and policies from the proposed General Plan Update are applicable to cultural resources and tribal cultural resources.

Land Use Element

- **Goal LU-5:** To preserve and enhance historic and cultural features that contribute to the character of Rio Vista.
  - **Policy LU-4:** New buildings within the Downtown and North Waterfront Districts should embrace Rio Vista's unique character and reflect the architectural styles and characteristics of historic Rio Vista development.
  - **Policy LU-12:** Protect, preserve and enhance significant historic buildings to preserve and enhance the identity and character of the community.

Open Space and Conservation Element

- **Goal OSC-6:** To preserve and protect the cultural and historic resources of Rio Vista.
  - **Policy OSC-14:** Encourage public and private efforts for the preservation of historic and architecturally significant buildings and sites, archaeological sites, and other landmarks.
  - **Policy OSC-15:** Ensure that all projects involving ground-disturbing activities include procedures to protect archaeological resources if discovered during excavation. Projects shall follow CEQA and other applicable State laws.

5.5.4 Environmental Impacts

Impact 5.5-1: Implementation of the proposed project could cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines, Section 15064.5. [Threshold C-1]

Section 15064.5 (b)(1) of the CEQA Guidelines defines a substantial adverse change in the significance of a historic resource to be the "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."

Future development under the proposed project could adversely impact current and/or future historic resources in the city through changes to accommodate adaptive reuse, removal, or reconstruction. Known or future historic sites or resources listed in the national, California, or local registers maintained by the City would be protected through local ordinances, the proposed General Plan policies, and State and federal regulations restricting alteration, relocation, and demolition of historical resources.

Implementation of the proposed General Plan Update policies, such as Policy LU-12, which protects, preserves, and enhances significant historic buildings to preserve and enhance the identity and character of the community, and Policy OSC-14, which encourages public and private efforts for the preservation of historic and architecturally significant buildings and sites, archaeological sites, and other landmarks, as well as compliance with State and federal regulations, would ensure that development would not result in adverse impacts to identified historic and cultural resources. While regulations provide a process for recognizing and protecting cultural and historic resources, they must be actively implemented alongside local policies to ensure preservation.

At the time a development project is proposed adjacent to or near a known or potential historic structure or resource, the project-level CEQA document of the development project would need to identify any impacts, direct or indirect, that the project could have on the identified historic structure or resource. The CEQA Guidelines require a project that will have potentially adverse impacts on historical resources to conform to the Secretary of Interior's Standards for the Treatment of Historic Properties to mitigate any such impacts to a level of insignificance.

It is also important to note that the proposed project is a regulatory document that sets the framework for future growth and development in the city and does not directly result in development. Before any development or redevelopment activities can occur in the

city, all such activities are required to be analyzed for conformance with the General Plan, zoning requirements, and other applicable local, State, and federal requirements; comply with the requirements of CEQA; and obtain all necessary clearances and permits. Therefore, adoption of the proposed project in itself would not lead to demolition or material alteration of any historic resource.

However, identified historic structures and sites that are potentially eligible for future historic resources listing may be vulnerable to development activities accompanying infill, redevelopment, or revitalization that would be accommodated by the proposed project. For instance, the placement of new buildings adjacent to a historic resource may result in indirect impacts to access, visibility, and visual context, while renovations or modifications to historic resources may deteriorate or destroy the characteristics that make those resources important or unique. In addition, other buildings or structures that could meet the NHRP criteria upon reaching 50 years of age might be impacted by development or redevelopment activities that would be accommodated by the proposed project. Regardless of the implementation of the proposed General Plan Update policies and State regulations, some historic properties may be significantly affected by implementation of the proposed project, and the loss and/or permanent alteration of historic resources would result in potentially significant impacts.

Level of Significance Before Mitigation: Impact 5.5-1 would be potentially significant.

Mitigation Measures

CUL-1 **Site-Specific Cultural Resources Study and Evaluation of Resources.** For projects that are on land that has not previously been developed, or will involve construction on areas where no previous ground disturbance or excavation has occurred, or for structures that are 50 years of age or older, a site-specific cultural resources study shall be completed and submitted to the City for review and approval prior to project approval. This site-specific cultural resources study shall include, but not be limited to, a records search with the California Historical Resource Information System, review of historical documents, a Sacred Lands File search with the NAHC, and a field survey/site effort. The findings of the study shall be submitted as a report that follows the California Office of Historic Preservation's recommended content and format. The report will provide the historic context, methods, results, and recommendations for appropriate findings.

Level of Significance After Mitigation: Impact 5.5-1 would be significant and unavoidable.

Impact 5.5-2: Implementation of the proposed project could cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines, Section 15064.5. [Threshold C-2]

Archaeological resources are the material evidence of human culture and activity in the past, and include artifacts, features, sites, and associated documentation. Adoption of the General Plan Update in itself would not directly affect archaeological resources. Long-term implementation of the proposed project could allow development (e.g., new development, infill development, redevelopment, and revitalization/restoration), including grading of known and unknown sensitive areas. Grading and construction activities of undeveloped areas or redevelopment that requires more intensive soil excavation than in the past could potentially cause the disturbance of archaeological resources. Therefore, future development that would be accommodated by the proposed project could potentially unearth previously unrecorded resources.

Archaeological sites are protected by a wide variety of State policies and regulations enumerated under the California PRC. Cultural resources are also recognized as nonrenewable and therefore receive protection under the California PRC and CEQA. Per PRC Section 21083.2, the CEQA lead agency is required to determine whether a development project may have a significant effect on archaeological resources. If the lead agency determines that the project may have a significant effect on unique archaeological resources, the project-level CEQA document being prepared for the development project is required to address the issue of those resources.

The proposed General Plan Update includes the following policies which would minimize impacts to archaeological resources: Policy OSC-14, which encourages public and private efforts for the preservation of historic and architecturally significant buildings and sites, archaeological sites, and other landmarks, and Policy OSC-15, which ensures that all projects involving ground-disturbing activities include procedures to protect archaeological resources if discovered during excavation.

The proposed project is a regulatory document that sets the framework for future growth and development in the city and does not result in development in and of itself. Before any development or development activities can occur, they must be analyzed for conformance with the General Plan, zoning requirements, and other applicable local

and State requirements; comply with the requirements of CEQA; and obtain all necessary clearances and permits.

Long-term implementation of the General Plan Update could include grading of unknown sensitive areas. Grading and construction activities of undeveloped areas or redevelopment that require more intensive soil excavation than in the past could potentially cause the disturbance of archaeological resources. Therefore, future development could potentially unearth previously unknown/unrecorded archaeological resources. However, compliance with existing regulatory requirements would mitigate potential impacts to less than significant.

Level of Significance Before Mitigation: Impact 5.5-2 would be less than significant.

Mitigation Measures

No mitigation measures are required.

Impact 5.5-3: Implementation of the proposed project would not disturb human remains, including those interred outside of dedicated cemeteries. [Threshold C-3]

Although the General Plan Update would not affect any formal cemeteries or known burials outside of formal cemeteries, future development could disturb unknown human remains.

California Health and Safety Code, Section 7050.5; CEQA Guidelines Section 15064.5; and PRC Section 5097.98 mandate the process to be followed in the event of an accidental discovery of any human remains in a location other than a dedicated cemetery. Specifically, California Health and Safety Code, Section 7050.5, requires that if human remains are discovered on a project site, excavation or disturbance of the site shall cease until the coroner has conducted an investigation into the circumstances, manner, and cause of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in PRC Section 5097.98. If the coroner determines that the remains are not subject to his or her authority, and if the coroner recognizes or has reason to believe the human remains are those of a Native American, he or she shall contact the NAHC by telephone within 24 hours. Although soil-disturbing activities associated with development in accordance with the General Plan Update could result in the discovery of human remains, existing laws, such as State Health and Safety Code Section 7050.5 and PRC Section

5097.98(b), would ensure potential impacts to human remains would be less than significant.

Level of Significance Before Mitigation: Impact 5.5-3 would be less than significant.

Mitigation Measures

No mitigation measures are required.

Impact 5.5-4: Implementation of the proposed project could cause a substantial adverse change in the significance of a tribal cultural resource that is listed or eligible for listing in the California Register of Historical Resources or a local register of historical resources, as defined in PRC Section 5020.1(k), or determined to be significant pursuant to the criteria set forth in PRC Section 5024.1(c). [Threshold TCR-1]

Conducting consultation early in the CEQA process allows tribal governments, public lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process.

Tribal cultural resources may be found throughout the city, but information about them is much more difficult to obtain than for most archaeological resources. Currently, there is no database of such resources, and most cannot be identified by surveying the land. Identification of tribal cultural resources requires coordination with Native American tribes, and their precise location is often difficult to determine because they may only be documented through the oral history of the tribe.

Development allowed by the General Plan Update could result in direct or indirect impacts to tribal cultural resources. Construction activities, such as grading and excavation, may result in the accidental destruction or disturbance of tribal cultural resources and/or sites. All development projects that are subject to CEQA review in the city would be required to consult with Native American tribes either pursuant to AB 52 and/or SB 18. Pursuant to California Government Code Section 6524 (r), records of Native American graves, cemeteries, sacred places, features, and objects are required to be confidential. Additionally, the proposed project includes Policy OSC-15, which ensures that all projects involving ground-disturbing activities include procedures to protect archaeological resources if discovered during excavation. Mitigation Measures TCR-1 through TCR-4 require that before any development or redevelopment activities

can occur, the site must be analyzed for conformance with the applicable local, State, and federal requirements, and must comply with the requirements of CEQA.

The City will work with the tribe to address any artifacts unearthed during construction in accordance with the mitigation measures. By working with the tribe and following the mitigation measures, impacts to tribal cultural resources will be less than significant.

Level of Significance Before Mitigation: Impact 5.5-4 would be potentially significant.

Mitigation Measures

TCR-1 **Treatment of Native American Remains.** In the event that Native American human remains are found during development of a project and a tribe(s) is determined to be the Most Likely Descendant (MLD) pursuant to Public Resources Code Section 5097.98, *Inadvertent Discovery of Native American Human Remains*, the following provisions shall apply:

- The Medical Examiner shall immediately be notified; ground-disturbing activities in that location shall cease; and the following shall be allowed, as applicable, pursuant to California Public Resources Code Section 5097.98(a):
  1. Inspect the site of the discovery, and
  2. Make determinations as to how the human remains and grave goods should be treated and disposed of with appropriate dignity.
- The applicable tribe(s) shall complete its inspection and make its MLD recommendation within 48 hours of getting access to the site. The tribe(s) shall have the final determination as to the disposition and treatment of human remains and grave goods. This determination may include avoidance of the human remains, reburial on-site, or reburial on tribal or other lands that will not be disturbed in the future.
- The applicable tribe(s) may wish to rebury the human remains and grave goods or ceremonial and cultural items on or near the site of their discovery, in an area that will not be subject to future disturbances over a prolonged period of time. Reburial of human remains shall be accomplished in compliance with the California Public Resources Code Sections 5097.98(a) and (b).

TCR-2 **Non-Disclosure of Location of Reburials.** In the event that Native American human remains are discovered, the site of any reburial of Native American human remains shall not be disclosed and will not be governed by public disclosure requirements of the California Public Records Act, California Government Code Section 6250 et seq., unless otherwise required by law. The Medical Examiner shall withhold public disclosure of information related to such reburial pursuant to the specific exemption set forth in California Government Code Section 6254(r). The applicable tribe(s) will require that the location for reburial is recorded with the California Historic Resources Inventory System (CHRIS) on a form that is acceptable to the CHRIS center.

TCR-3 **Treatment of Cultural Resources.** In the event that cultural items are found on-site, all such items, including ceremonial items and archaeological items, should be turned over to the applicable tribe(s) for appropriate treatment, unless otherwise ordered by a court or agency of competent jurisdiction. The project proponent should waive any and all claims to ownership of tribal ceremonial and cultural items, including archaeological items, which may be found on a project site in favor of the applicable tribe(s). If any intermediary, for example, an archaeologist retained by the project proponent, is necessary, said entity or individual shall not possess those items for longer than is reasonably necessary, as determined solely by the applicable tribe(s).

TCR-4 **Inadvertent Discoveries.** In the event that additional significant site(s) not identified as significant in a project environmental review process, but are later determined to be significant, are located within a project impact area, such sites will be subjected to further archaeological and cultural significance evaluation by the project proponent, lead agency, and the applicable tribe(s) to determine if additional mitigation measures are necessary to treat sites in a culturally appropriate manner consistent with CEQA requirements for mitigation of impacts to cultural resources. If there are human remains present that have been identified as Native American, all work will cease for a period of up to 30 days in accordance with federal law.

Level of Significance After Mitigation: Impact 5.5-4 would be less than significant.

5.5.5 Cumulative Impacts

5.5.5.1 CULTURAL RESOURCES

The cumulative context associated with the proposed project includes proposed, planned, reasonably foreseeable, and approved projects in the city and surrounding region. Much development has occurred in the region prior to protections for historic and prehistoric resources. Past urban development in the region has likely resulted in adverse impacts to historical and prehistoric resources, and there is potential for present and future development activities to affect undiscovered cultural resources and human remains. Federal, State, and local regulations provide protections for historical resources, but protection may not always be feasible. For these reasons, cumulative effects of future development on cultural resources, tribal cultural resources, and human remains are considered significant.

Future development and redevelopment pursuant to the proposed project and other development projects in the surrounding area would involve grading and excavation activities on individual sites, which could uncover cultural resources. Compliance with local, State, and federal regulations would reduce impacts on cultural resources as a result of new development or redevelopment projects. Although proposed policies and mitigation are proposed to reduce impacts to historic resources, impacts would still occur. Therefore, development under the proposed project would result in a cumulatively considerable contribution to the significant cumulative impact on historic resources. This impact is cumulatively considerable.

5.5.5.2 TRIBAL CULTURAL RESOURCES

As with the proposed project and future development in the city, each related cumulative project would be required to comply with AB 52 and PRC Section 21083.2(i), which addresses accidental discoveries of archaeological sites and resources, including tribal cultural resources. The policies from the proposed project would apply to both the proposed project and project-specific CEQA review for future development in the city. Any discoveries of tribal cultural resources from the proposed project or related projects would be mitigated to a less-than-significant impact. Therefore, project impacts would not be cumulatively considerable.

5.5.6 Level of Significance Before Mitigation

Without mitigation, these impacts would be **potentially significant**:

- **Impact 5.5-1:** Implementation of the proposed project could cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines, Section 15064.5.
- **Impact 5.5-4:** Implementation of the proposed project could impact tribal cultural resources.

5.5.7 Mitigation Measures

Impact 5.5-1

CUL-1 **Site-Specific Cultural Resources Study and Evaluation of Resources.** For projects that are on land that has not previously been developed, or will involve construction on areas where no previous ground disturbance or excavation has occurred, or for structures that are 50 years of age, a site-specific cultural resources study shall be completed prior to project approval. This site-specific cultural resources study shall include, but not be limited to, a records search with the California Historical Resource Information System, review of historical documents, a Sacred Lands File search with the NAHC, and a field survey/site effort. The findings of the study shall be submitted as a report that follows the California Office of Historic Preservation's recommended content and format. The report will provide the historic context, methods, results, and recommendations for appropriate findings.

Impact 5.5-4

TCR-1 **Treatment of Native American Remains.** In the event that Native American human remains are found during development of a project and a tribe(s) is determined to be the Most Likely Descendant (MLD) pursuant to Public Resources Code Section 5097.98, *Inadvertent Discovery of Native American Human Remains*, the following provisions shall apply:

- The Medical Examiner shall immediately be notified; ground-disturbing activities in that location shall cease; and the following shall be allowed, as applicable, pursuant to California Public Resources Code Section 5097.98(a):
  1. Inspect the site of the discovery, and
  2. Make determinations as to how the human remains and grave goods should be treated and disposed of with appropriate dignity.

- The applicable tribe(s) shall complete its inspection and make its MLD recommendation within 48 hours of getting access to the site. The tribe(s) shall have the final determination as to the disposition and treatment of human remains and grave goods. This determination may include avoidance of the human remains, reburial on-site, or reburial on tribal or other lands that will not be disturbed in the future.
- The applicable tribe(s) may wish to rebury the human remains and grave goods or ceremonial and cultural items on or near the site of their discovery, in an area that will not be subject to future disturbances over a prolonged period of time. Reburial of human remains shall be accomplished in compliance with the California Public Resources Code Sections 5097.98(a) and (b).

TCR-2 **Non-Disclosure of Location of Reburials.** In the event that Native American human remains are discovered, the site of any reburial of Native American human remains shall not be disclosed and will not be governed by public disclosure requirements of the California Public Records Act, California Government Code Section 6250 et seq., unless otherwise required by law. The Medical Examiner shall withhold public disclosure of information related to such reburial pursuant to the specific exemption set forth in California Government Code Section 6254(r). The applicable tribe(s) will require that the location for reburial is recorded with the California Historic Resources Inventory System (CHRIS) on a form that is acceptable to the CHRIS center.

TCR-3 **Treatment of Cultural Resources.** In the event that cultural items are found on-site, all such items, including ceremonial items and archaeological items, should be turned over to the applicable tribe(s) for appropriate treatment, unless otherwise ordered by a court or agency of competent jurisdiction. The project proponent should waive any and all claims to ownership of tribal ceremonial and cultural items, including archaeological items, which may be found on a project site in favor of the applicable tribe(s). If any intermediary, for example, an archaeologist retained by the project proponent, is necessary, said entity or individual shall not possess those items for longer than is reasonably necessary, as determined solely by the applicable tribe(s).

TCR-4 **Inadvertent Discoveries.** In the event that additional significant site(s) not identified as significant in a project environmental review process, but are later determined to be significant, are located within a project impact area, such sites will be subjected to further archaeological and cultural significance evaluation by the project proponent, lead agency, and the applicable tribe(s) to determine if additional mitigation measures are necessary to treat sites in a culturally appropriate manner consistent with CEQA requirements for mitigation of impacts to cultural resources. If there are human remains present that have been identified as Native American, all work will cease for a period of up to 30 days in accordance with federal law.

5.5.8 Level of Significance After Mitigation

Impact 5.5-1

Mitigation Measures CUL-1, which requires site-specific cultural resources study and evaluation of resources for projects, would reduce potential impacts associated with historic resources. However, if a proposed project would result in the demolition or significant alteration of a historical resource, it cannot be mitigated to a less-than-significant level. As a result, impacts on historic resources as a result of future development in accordance with the proposed General Plan Update are ***significant and unavoidable***.

Impact 5.5-4

Mitigation Measures TCR-1 through TCR-4 ensure that if Native American human remains or cultural items are discovered during a project, work will stop, the Medical Examiner and applicable tribes will be notified, tribes will determine proper treatment and reburial, and any newly identified significant cultural sites will undergo further evaluation and mitigation in accordance with federal laws, reducing impacts to a **less-than-significant level**.

5.5.9 References

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5.6 ENERGY

Public Resources Code Section 21100(b)(3) requires that an environmental impact report (EIR) include a detailed statement with mitigation measures proposed to minimize significant effects on the environment, including, but not limited to, measures to reduce the wasteful, inefficient, and unnecessary consumption of energy. Appendix F of the California Environmental Quality Act (CEQA) Guidelines states that, in order to ensure that energy implications are considered in project decisions, the potential energy implications of a project shall be considered in an EIR, to the extent relevant and applicable to the project. Appendix F further states that a project's energy consumption and proposed conservation measures may be addressed, as relevant and applicable, in the project description, environmental setting, and impact analysis portions of technical sections, as well as through mitigation measures and alternatives.

In accordance with Appendices F and G of the CEQA Guidelines, this Draft EIR includes relevant information and analyses that address the energy implications of the Rio Vista General Plan Update (proposed project). This section summarizes the proposed project's anticipated energy needs, impacts, and conservation measures. Information in this section is based on the modeling data in Appendix 5.3-1, *Air Quality and Greenhouse Gas Emissions Assessment*, of this Draft EIR. Additional energy calculations can be found in Appendix 5.6-1, *City of Rio Vista General Plan Update Energy Consumption Calculations,* of this Draft EIR.

5.6.1 Environmental Setting

Federal, State, and local laws, regulations, plans, or guidelines related to energy that are potentially applicable to the proposed project are summarized herein.

5.6.1.1 REGULATORY BACKGROUND

Federal

Federal Energy Policy and Conservation Act

The Energy Policy and Conservation Act of 1975 was established in response to the 1973 oil crisis. The act created the Strategic Petroleum Reserve, established vehicle fuel economy standards, and prohibited the export of US crude oil (with a few limited exceptions). It also created Corporate Average Fuel Economy (CAFE) standards for passenger cars starting in model year 1978. The CAFE standards are updated periodically to account for changes in vehicle technologies, driver behavior, and/or driving conditions.

The federal government issued new CAFE standards in 2012 for model years 2017 to 2025 that required a fleet average of 54.5 miles per gallon (mpg) for model year 2025. However, on March 30, 2020, the United States Environmental Protection Agency (USEPA) finalized an updated CAFE and greenhouse gas (GHG) emissions standards for passenger cars and light trucks and established new standards covering model years 2021 through 2026, known as the Safer Affordable Fuel Efficient (SAFE) Vehicles Final Rule for Model Years 2021–2026. Under SAFE, the fuel economy standards will increase 1.5 percent per year compared to the 5 percent per year under the CAFE standards established in 2012. Overall, SAFE requires a fleet average of 40.4 mpg for model year 2026 vehicles (85 Federal Register 24174 [April 30, 2020]).

On December 21, 2021, under direction of Executive Order (EO) 13990 issued by President Biden, the National Highway Traffic Safety Administration repealed SAFE Rule Part One, which had preempted State and local laws related to fuel economy standards. In addition, the National Highway Traffic Safety Administration finalized new fuel standards in response to EO 13990. Fuel efficiency under the standards will increase 8 percent annually for model years 2024 to 2025 and 10 percent annually for model year 2026. Overall, the new CAFE standards require a fleet average of 49 mpg for passenger vehicles and light trucks for model year 2026, which would be a 10 mpg increase relative to model year 2021 (Federal Register 2022).

On July 28, 2023, National Highway Traffic Safety Administration (NHTSA) proposed new CAFE standards for passenger cars and light trucks built in model years 2027-2032, and new fuel-efficiency standards for heavy-duty pickup trucks and vans built in model years 2027-2035. If finalized, the proposal would require an industry fleet-wide average of approximately 58 mpg for passenger cars and light trucks in model year 2032, by increasing fuel economy by 2 percent year over year for passenger cars and by 4 percent year over year for light trucks. For heavy-duty pickup trucks and vans, the proposal would increase fuel efficiency by 10 percent year over year (NHTSA 2023).

Energy Independence and Security Act of 2007

The Energy Independence and Security Act of 2007 (Public Law 110-140) seeks to provide the nation with greater energy independence and security by increasing the production of clean renewable energy fuels; improving vehicle fuel economy; and increasing the efficiency of products, buildings, and vehicles. It also seeks to improve the energy performance of the federal government. The act sets increased CAFE Standards; the Renewable Fuel Standard; appliance energy efficiency standards; building energy efficiency standards; and accelerated research and development tasks on renewable

energy sources (*e.g.,* solar energy, geothermal energy, and marine and hydrokinetic renewable energy technologies), carbon capture, and sequestration (USEPA 2023).

Energy Policy Act of 2005

Passed by Congress in July 2005, the Energy Policy Act includes a comprehensive set of provisions to address energy issues. This act includes tax incentives for energy conservation improvements in commercial and residential buildings, fossil fuel production and clean coal facilities, and construction and operation of nuclear power plants, among other things. Subsidies are also included for geothermal, wind energy, and other alternative energy producers.

National Energy Policy

Established in 2001 by the National Energy Policy Development Group, the National Energy Policy is designed to help the private sector and State and local governments promote dependable, affordable, and environmentally sound production and distribution of energy for the future. Key issues addressed by the energy policy are energy conservation, repair, and expansion of energy infrastructure, and ways of increasing energy supplies while protecting the environment.

Natural Gas Pipeline Safety Act of 1968

The Natural Gas Pipeline Safety Act of 1968 authorizes the United States Department of Transportation to regulate pipeline transportation of flammable, toxic, or corrosive natural gas and other gases as well as the transportation and storage of liquefied natural gas. The Pipeline and Hazardous Materials Safety Administration within the Department of Transportation develops and enforces regulations for the safe, reliable, and environmentally sound operation of the nation’s 2.6-million-mile pipeline transportation system.

Inflation Reduction Act of 2022

On August 16, 2022, President Biden signed the Inflation Reduction Act (IRA) with eight titles, each providing provisions that address issues related to climate change. Some of the titles provide funding for new tax credits for electricity from clean and renewable resources, to increase energy or water efficiency for affordable housing projects, to the Department of Energy for energy rebates and energy infrastructure, and to the Federal Emergency Management Agency for low-carbon building materials and low- or no-emission energy projects.

State

California Energy Commission

The CEC was created in 1974 under the Warren-Alquist Act as the State's principal energy planning organization to meet the energy challenges facing the state in response to the 1973 oil embargo. The CEC is charged with six basic responsibilities when designing state energy policy:

- Forecast statewide electricity needs.
- License power plants to meet those needs.
- Promote energy conservation and efficiency measures.
- Develop renewable energy resources and alternative energy technologies.
- Promote research, development, and demonstration.
- Plan for and direct the State's response to energy emergencies.

California Public Utilities Commission

In September 2008, the California Public Utilities Commission (CPUC) adopted the Long-Term Energy Efficiency Strategic Plan, which provides a framework for energy efficiency in California through the year 2020 and beyond. It articulates a long-term vision, as well as goals for each economic sector, identifying specific near-term, mid-term, and long-term strategies to assist in achieving these goals. This plan sets the following four goals, known as Big Bold Energy Efficiency Strategies, to achieve significant reductions in energy demand:

- All new residential construction in California will be zero net energy by 2020.
- All new commercial construction in California will be zero net energy by 2030.
- Heating, Ventilation and Air Conditioning (HVAC) will be transformed to ensure that its energy performance is optimal for California's climate.
- All eligible low-income customers will be given the opportunity to participate in the low-income energy-efficiency program by 2020.

With respect to the commercial sector, the Long-Term Energy Efficiency Strategic Plan notes that commercial buildings, which include schools, hospitals, and public buildings, consume more electricity than any other end-use sector in California. The commercial sector's five-billion-plus square feet of space accounts for 38 percent of the state's power use and over 25 percent of natural gas consumption. Lighting, cooling, refrigeration, and ventilation account for 75 percent of all commercial electric use, while space heating, water heating, and cooking account for over 90 percent of gas use. In 2006, schools and

colleges were in the top-five facility types for electricity and gas consumption, accounting for approximately 10 percent of the state's electricity and gas use (CPUC 2011).

The CPUC and CEC have adopted the following goals to achieve zero net energy (ZNE) levels by 2030 in the commercial sector:

Goal 1: New construction will increasingly embrace zero net energy performance (including clean, distributed generation), reaching 100 percent penetration of new starts in 2030.

Goal 2: 50 percent of existing buildings will be retrofitted to zero net energy by 2030 through achievement of deep levels of energy efficiency and with the addition of clean distributed generation.

Goal 3: Transform the commercial lighting market through technological advancement and innovative utility initiatives.

Renewables Portfolio Standard

Senate Bills 1078, 107, X1-2, and Executive Order S-14-08

The Renewables Portfolio Standard (RPS) Program was established in 2002 under Senate Bill (SB) 1078 (Sher) and 107 (Simitian). The RPS program required investor-owned utilities, electric service providers, and community choice aggregators to increase the use of eligible renewable energy resources to 33 percent of total procurement by 2020. Initially under the RPS, certain retail sellers of electricity were required to increase the amount of renewable energy each year by at least 1 percent to reach at least 20 percent by December 30, 2010. EO S-14-08 was signed in November 2008, which expanded the state's Renewable Energy Standard to 33 percent renewable power by 2020. This standard was adopted by the legislature in 2011 (SB X1-2). The CPUC is required to provide quarterly progress reports on progress toward RPS goals. This has accelerated the development of renewable energy projects throughout the state. For year 2020, the three largest retail energy utilities provided an average of 43 percent of their supplies from renewable energy sources. Community choice aggregators provided an average of 41 percent of their supplies from renewable sources (CPUC 2021).

Senate Bill 350

Governor Jerry Brown signed SB 350 on October 7, 2015, which expands the RPS by establishing a goal of 50 percent of the total electricity sold to retail customers in California per year by December 31, 2030. In addition, SB 350 includes the goal to double the energy-efficiency savings in electricity and natural gas final end uses (such as heating,

cooling, lighting, or class of energy uses upon which an energy-efficiency program is focused) of retail customers through energy conservation and efficiency. The bill also requires the CPUC, in consultation with the CEC, to establish efficiency targets for electrical and gas corporations consistent with this goal. SB 350 also provides for the transformation of the California Independent System Operator (CAISO) into a regional organization to promote the development of regional electricity transmission markets in the western states and to improve the access of consumers served by the CAISO to those markets, pursuant to a specified process.

Senate Bill 100

On September 10, 2018, Governor Brown signed SB 100, which replaces the SB 350 requirements. Under SB 100, the RPS for public-owned facilities and retail sellers consist of 44 percent renewable energy by 2024, 52 percent by 2027, and 60 percent by 2030. SB 100 also established a new RPS requirement of 50 percent by 2026. Furthermore, the bill establishes an overall State policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all State agencies by December 31, 2045. Under the bill, the State cannot increase carbon emissions elsewhere in the western grid or allow resource shuffling to achieve the 100 percent carbon-free electricity target.

Senate Bill 1020

SB 1020 was signed into law on September 16, 2022. It requires renewable energy and zero-carbon resources to supply 90 percent of all retail electricity sales by 2035 and 95 percent by 2040. Additionally, SB 1020 requires all State agencies to procure 100 percent of electricity from renewable energy and zero-carbon resources by 2045.

Energy Efficiency

2006 Appliance Efficiency Regulations

California's Appliance Efficiency Regulations contain energy performance, energy design, water performance, and water design standards for appliances (including refrigerators, ice makers, vending machines, freezers, water heaters, fans, boilers, washing machines, dryers, air conditioners, pool equipment, and plumbing fittings) that are sold or offered for sale in California (California Code of Regulations [CCR] Title 20, Parts 1600–1608). These standards are updated regularly to allow consideration of new energy efficiency technologies and methods (CEC 2024a).

California Building Energy Code: Building Energy Efficiency Standards

Energy conservation standards for new residential and nonresidential buildings were adopted by the California Energy Resources Conservation and Development Commission (now the CEC) in June 1977 (Title 24, Part 6, of the CCR). Title 24 Part 6 of the CCR requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy-efficiency technologies and methods.

On August 11, 2021, the CEC adopted the 2022 Building Energy Efficiency Standards, which were subsequently approved by the California Building Standards Commission in December 2021. The 2022 standards went into effect on January 1, 2023, replacing the 2019 standards. The 2022 standards require mixed-fuel single-family homes to be electric-ready to accommodate replacement of gas appliances with electric appliances. In addition, the new standards also include prescriptive photovoltaic system and battery requirements for high-rise, multifamily buildings (i.e., more than three stories) and noncommercial buildings, such as hotels, offices, medical offices, restaurants, retail stores, schools, warehouses, theaters, and convention centers (CEC 2021).

California Building Code: CALGreen

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (24 CCR Part 11, known as "CALGreen") was adopted as part of the California Building Standards Code. It includes mandatory requirements for new residential and nonresidential buildings throughout California. CALGreen is intended to: (1) reduce GHG emissions from buildings; (2) promote environmentally responsible, cost-effective, healthier places to live and work; (3) reduce energy and water consumption; and (4) respond to the directives by the Governor. The mandatory provisions of CALGreen became effective January 1, 2011, and were last updated in 2022. The 2022 CALGreen update, which was approved as part of the 2022 Energy Code, became effective on January 1, 2023, and provides updates to the residential and nonresidential voluntary measures.

Overall, CALGreen reduces construction waste, makes buildings more efficient in the use of materials and energy, and reduces environmental impacts during and after construction. It contains requirements for construction site selection, stormwater control during construction, construction waste reduction, indoor water use reduction, materials selection, natural resource conservation, and site irrigation conservation, etc. It provides for design options, allowing the designer to determine how best to achieve compliance for a given site or building condition. CALGreen also requires building commissioning,

which is a process for verifying that all building systems (e.g., heating and cooling equipment and lighting systems) are functioning at their maximum efficiency (CBSC 2022).

California Energy Benchmarking and Disclosure (AB 802)

The Building Energy Benchmarking Program is mandated under Assembly Bill (AB) 802 and requires owners of large commercial and multifamily buildings to report energy use to the CEC by June 1 annually. This program applies to all buildings with more than 50,000 square feet of gross floor area and owners of multifamily residential buildings with more than 50,000 square feet and 17 or more utility accounts. The bill requires each utility, upon the request and authorization of the owner, owner's agent, or operator of a building covered under the regulation, to deliver or provide aggregated energy usage data for a covered building. The required energy usage shall be reported to the CEC through the Energy Star Portfolio Manager.

CPUC Natural Gas Regulations

The CPUC regulates natural gas utility rates and services as well as the transportation of natural gas over the extensive transmission and distribution pipeline systems. The CPUC also regulates gas storage facilities. The Gas Safety and Reliability Branch of the CPUC ensures that natural gas pipeline systems are designed, constructed, operated, and maintained according to the safety standards set by the CPUC and the federal government. The regulations are provided in the CPUC General Order No. 112-E and the Natural Gas Pipeline Safety Act of 2011.

Assembly Bill 1493

California vehicle GHG emission standards were enacted under AB 1493 (Pavley I). Pavley I is a clean-car standard that reduced GHG emissions from new passenger vehicles (light-duty auto to medium-duty vehicles) from 2009 through 2016 and was anticipated to reduce GHG emissions from new passenger vehicles by 30 percent in 2016. California implements the Pavley I Standards through a waiver granted to California by the USEPA. In 2012, the USEPA issued a Final Rulemaking that sets even more stringent fuel economy and GHG emissions standards for model year 2017 through 2025 light-duty vehicles. In January 2012, the California Air Resources Board (CARB) approved the Pavley Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single package of standards. Under California's Advanced Clean Car program, by 2025, new

automobiles will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions (CARB 2017).

Executive Order N-79-20

On September 23, 2020, EO N-79-20 was issued to set a time frame for the transition to zero-emissions (ZE) passenger vehicles, trucks, and off-road equipment. It directs CARB to develop and propose:

- Passenger vehicle and truck regulations requiring increasing volumes of new zero-emission vehicles (ZEV) sold in California toward the target of 100 percent of in-state sales by 2035.
- Medium- and heavy-duty vehicle regulations requiring increasing volumes of new ZE trucks and buses sold and operated in California toward the target of 100 percent of the fleet transitioning to ZEVs by 2045 everywhere feasible, and for all drayage trucks to be ZE by 2035.
- Strategies to achieve 100 percent zero emissions from all off-road vehicles and equipment operations in California by 2035, in cooperation with other state agencies, the USEPA, and local air districts.

On August 25, 2022, CARB adopted the Advanced Clean Cars II (ACC II) regulations that codifies the EO goal of 100 percent of in-state sales of new passenger vehicles and trucks are ZE by 2035. Starting in year 2026, ACC II requires that 35 percent of new vehicles sold be ZE or plug-in hybrids (CARB 2024).

Advanced Clean Fleets Regulation

In April 2023, CARB released the Advanced Clean Fleets (ACF) regulation to accelerate the transition to zero-emission medium- and heavy-duty vehicles (CARB 2023a). In conjunction with the Advanced Clean Trucks regulation, the ACF regulations help to ensure that medium- and heavy-duty ZEVs are brought to the market, by requiring certain fleets to purchase ZEVs. The ACF ZEV phase-in approach, which provides initial focus where the best fleet electrification opportunities exist, sets clear targets for regulated fleets to make a full conversion to ZEVs, and creates a catalyst to accelerate development of a heavy-duty public infrastructure network.

The ACF regulations cover four main elements:

- **Manufacturer sales mandate.** Manufacturers may sell only zero-emission medium- and heavy-duty vehicles starting in 2036.

- **Drayage fleets.**[1] Beginning January 1, 2024, trucks must be registered in the CARB Online System to conduct drayage activities in California. Non-zero-emission "legacy" drayage trucks may register in the CARB Online System through December 31, 2023. Legacy drayage trucks can continue to operate through their minimum useful life. Beginning January 1, 2024, only zero-emission drayage trucks may register in the CARB Online System. All drayage trucks entering seaports and intermodal railyards would be required to be zero-emission by 2035.
- **High-priority and federal fleets.** High-priority and federal fleets must comply with the Model Year Schedule or may elect to use the optional ZEV Milestones Option to phase-in ZEVs into their fleets:
  - Model Year Schedule: Fleets must purchase only ZEVs beginning 2024 and, starting January 1, 2025, must remove internal combustion engine vehicles at the end of their useful life as specified in the regulation.
  - ZEV Milestones Option (Optional): Instead of the Model Year Schedule, fleets may elect to meet ZEV targets as a percentage of the total fleet starting with vehicle types that are most suitable for electrification.
- **State and local agencies.** State and local government fleets, including city, county, special district, and State agency fleets, would be required to ensure 50 percent of vehicle purchases are zero-emission beginning in 2024 and 100 percent of vehicle purchases are zero-emission by 2027. Small government fleets (those with 10 or fewer vehicles) and those in designated counties would start their ZEV purchases beginning in 2027. Alternately, State and local government fleet owners may elect to meet ZEV targets using the ZEV Milestones Option. State and local government fleets may purchase either ZEVs or near-ZEVs, or a combination of ZEVs and near-ZEVs, until 2035. Starting in 2035, only ZEVs will meet the requirements.

The ACF regulations would also establish requirements that transform the medium- and heavy-duty vehicle sector and demonstrate independent utility by achieving the following objectives:

- Achieve criteria and GHG emissions reductions consistent with the goals identified in the State Implementation Plan (SIP) Strategy and Scoping Plan.

1 Drayage trucks are in-use class 7 and 8 on-road vehicles that transport containers and bulk goods to and from seaports and intermodal railyards. Land ports of entry, which provide controlled entry to or departure from the United States, are not considered seaports or intermodal railyards (CARB 2023b).

- Provide emissions reductions in disadvantaged communities (DAC), thereby supporting the implementation ofAB) 617 (Garcia, C., Chapter 136, Statutes of 2017).

Support the goals of EO N-79-20, which calls for accelerated ZEV deployment with these targets:

- 100 percent ZE drayage by 2035.
- 100 percent ZE trucks and buses, where feasible by 2045.
- Ensure requirements, such as ZEV deployment schedules and related infrastructure buildout, are technologically feasible, cost-effective, and support market conditions.
- Lead the transition away from petroleum fuels and towards electric drivetrains.
- Contribute towards achieving carbon neutrality in California pursuant to SB 100, and in accordance with EO B-55-18.
- Mindfully set requirements to allow time for public ZE infrastructure buildout for smaller fleets or for regional haul applications who would be reliant on a regional network of public chargers.
- Ensure manufacturers and fleets work together to place ZEVs in service suitably and successfully as market expands.
- Establish a fair and level playing field among fleet owners.
- Craft the proposed project in a way that ensures institutional capacity for CARB to manage, implement, and enforce requirements.

Energy Storage

California has set ambitious long-term goals for energy storage beyond 2026 to support its clean energy and climate goals. The state aims to reach 100 percent carbon-free electricity by 2045, which will require significant investment in renewable energy sources like wind and solar, as well as energy storage technologies to balance the variability of these sources.

The CAISO has a total energy storage capacity of more than 3,160 megawatts (MW) as of June 2022 (CAISO 2022). This includes both large-scale and distributed energy storage systems, such as batteries, pumped hydroelectric storage, and thermal storage. CAISO is responsible for managing the electricity grid for much of California, and it has set a target of adding 3,300 MW of additional energy storage capacity by 2024 to support the integration of more renewable energy sources like wind and solar. As part of SB 100, load serving entities (LSE) were required to procure no less than 1.3 gigawatts (GW) of

energy storage capacity by 2020, and 3 GW by 2030. Additionally, the CPUC has established a target of 15 GW of energy storage capacity by 2030 (CPUC 2022).

Energy Storage

The Integrated Resource Plan

CAISO develops a coordinated grid management plan to integrate the generation and storage capacities of LSEs, called the Integrated Resource Plan (IRP). The IRP is a comprehensive planning document that outlines CAISO's forecasts for electricity demand, supply, and transmission needs over a 20-year planning horizon, as well as its strategies for integrating renewable energy resources and other grid services to meet those needs. The plan is developed in collaboration with LSEs, regulators, and other stakeholders, and is updated periodically to reflect changes in the energy landscape and evolving policy goals. Overall, the IRP plays a critical role in ensuring the reliability and resilience of California's electricity grid as the state continues to transition to a cleaner and more sustainable energy system.

When an individual Battery Energy Storage (BES) facility or generation infrastructure (i.e., solar panels) comes online in California, it is typically included in the IRP through a process known as the Interconnection Queue. The Interconnection Queue is managed by the CAISO, which oversees operation of the State's electricity grid.

The Interconnection Queue

The Interconnection Queue is an application process that functions as a waiting list of proposed electricity generation and storage projects that are seeking to connect to the grid. When a new BES facility or generation infrastructure is proposed, the developer submits an application to CAISO to request an interconnection to the grid. CAISO evaluates the application to ensure that the facility meets technical and operational requirements, such as voltage regulation and frequency response, and that it can be integrated effectively into the grid.

Once the BES facility or generation infrastructure is approved by CAISO, it is assigned a point of interconnection on the grid, and its output is added to the IRP as a resource that can provide electricity and other grid services, such as frequency regulation or ramping support. The facility is then dispatched by CAISO based on its bids into the day-ahead and real-time electricity markets, and its output is used to help balance supply and demand on the grid in real-time.

Overall, the Interconnection Queue is an important mechanism for integrating new BES facilities and other electricity resources into the California grid, and for ensuring that the grid remains reliable and resilient as the state continues to transition to a cleaner and more sustainable energy system.

Regional

Plan Bay Area 2050

The Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG) adopted *Plan Bay Area 2050* on October 21, 2021 (ABAG/MTC 2021). *Plan Bay Area 2050* provides transportation and environmental strategies to continue to meet the regional transportation-related GHG reduction goals of SB 375. Under the *Plan Bay Area 2050* strategies, just under half of all Bay Area households would live within one half mile of frequent transit by 2050, with this share increasing to over 70 percent for households with low incomes. Transportation and environmental strategies that support active and shared modes, combined with a transit-supportive land use pattern, are forecasted to lower the share of Bay Area residents that drive to work alone from over 50 percent in 2015 to 36 percent in 2050. GHG emissions from transportation would decrease significantly as a result of these transportation and land use changes, and the Bay Area would meet the State mandate of a 19-percent reduction in per-capita emissions by 2035 — but only if all strategies are implemented (ABAG/MTC 2021).

To achieve MTC's/ABAG's sustainable vision for the Bay Area, the *Plan Bay Area* land use concept plan for the region concentrates the majority of new population and employment growth in the region in Priority Development Areas (PDAs). PDAs are transit-oriented, infill development opportunity areas within existing communities. An overarching goal of the regional plan is to concentrate development in areas where there are existing services and infrastructure rather than allocate new growth to outlying areas where substantial transportation investments would be necessary to achieve the per-capita passenger vehicle, vehicle-miles traveled (VMT), and associated GHG emissions reductions.

Bay Area Clean Air Plan

The Bay Area Air District (Air District, formerly BAAQMD) adopted the 2017 Clean Air Plan, *Spare the Air, Cool the Climate*, on April 19, 2017. The 2017 Clean Air Plan also lays the groundwork for reducing GHG emissions in the Bay Area to meet the State's 2030 GHG reduction target and 2050 GHG reduction goal. It also includes a vision for the Bay Area in a post-carbon year 2050 that encompasses the following:

- Construct buildings that are energy efficient and powered by renewable energy.
- Walk, bicycle, and use public transit for the majority of trips and use electric-powered autonomous public transit fleets.
- Incubate and produce clean energy technologies.
- Live a low-carbon lifestyle by purchasing low-carbon foods and goods in addition to recycling and putting organic waste to productive use (Air District 2017).

A comprehensive multipollutant control strategy has been developed to be implemented in the next three to five years to address public health and climate change and to set a pathway to achieve the 2050 vision. The control strategy includes 85 control measures to reduce emissions of ozone, particulate matter, toxic air contaminants, and GHG from a full range of emission sources. These control measures cover the following sectors: stationary (industrial) sources, transportation, energy, agriculture, natural and working lands, waste management, water, and super-GHG pollutants. Overall, the proposed control strategy is based on the following key priorities:

- Reduce emissions of criteria air pollutants and toxic air contaminants from all key sources.
- Reduce emissions of "super-GHGs," such as methane, black carbon, and fluorinated gases.
- Decrease demand for fossil fuels (i.e., gasoline, diesel, and natural gas).
  - Increase efficiency of the energy and transportation systems.
  - Reduce demand for vehicle travel and high-carbon goods and services.
- Decarbonize the energy system.
  - Make the electricity supply carbon-free.
  - Electrify the transportation and building sectors.

Solano County Congestion Management Program

The Solano Transportation Authority (STA) is Solano County's designated Congestion Management Agency (CMA). It is responsible for implementing programs to ensure traffic levels remain manageable. As the CMA, STA oversees coordinating land use, air quality, and transportation planning among local jurisdictions. The Congestion Management Program (CMP) outlines transportation demand management efforts and a land use evaluation program, both of which are built on Contra Costa Transportation Authority's Growth Management Program. The CMP is a planning tool by which CMAs monitor and plan to mitigate congestion on the county's roadways. The CMP is specifically required to measure congestion levels on all State-owned roadways, as well as several local arterials

and include a seven-year capital improvement program to address the findings. The goal of the CMP is to plan for and mitigate congestion either before it occurs or before it worsens.

Local

City of Rio Vista Municipal Code

Chapter 12.21 – Wireless Telecommunication Facilities in the Public-Right-of-Way

- This chapter provides a uniform and comprehensive set of regulations and standards for the permitting, development, siting, installation, design, operation, and maintenance of wireless telecommunications facilities in the city's public right-of-way. These regulations are intended to prescribe clear and reasonable criteria to assess and process applications in a consistent and expeditious manner, while reducing the impacts associated with wireless telecommunications facilities.

Chapter 13.16 – Underground Utility Districts

This chapter describes how the City may designate an underground utility district area, the public hearing process for such designations, and the removal of associated overhead structures for public necessity, health, safety, and welfare. Exceptions for emergency services, street lighting, and other facilities are provided in Sections 13.16.050 and 13.16.060.

Chapter 15.04 – California Building Standards Code

According to this chapter, the City has adopted the 2022 California Green Building Standards Code (Title 24, CCR Part 11), which provides regulations for energy efficiency, water efficiency, material conservation, environmental quality, and more.

Chapter 15.14 – Expedited Permit for Small Residential Rooftop Solar Systems

- This chapter establishes an expedited, streamlined solar permitting process that complies with the Solar Rights Act and AB 2188 (Chapter 521, Statutes 2014, California Government Code Section 65850.5) to achieve timely and cost-effective installations of small residential rooftop solar energy systems. This chapter encourages the use of solar systems by removing unreasonable barriers, minimizing costs to property owners and the City, and expanding the ability of property owners to install solar energy systems. This chapter allows the City to achieve these goals while protecting the public health and safety.

5.6.1.2 EXISTING CONDITIONS

Energy Provider

The main energy provider for the City of Rio Vista is the Pacific Gas and Electric Company (PG&E). PG&E is the sole provider of natural gas and electrical services. PG&E is regulated by CPUC.

PG&E

PG&E is a publicly traded utility company that generates, purchases, and transmits energy under contract with the CPUC. Its service territory is 70,000 square miles in area, roughly extending north to south from Eureka to Bakersfield, and east to west from the Sierra Nevada range to the Pacific Ocean.

In 2022, roughly half of PG&E's energy generated came from renewable resources, including biopower, geothermal, small hydroelectric, solar, and wind power. PG&E's portfolio consists of 5 percent natural gas, 49 percent non-emitting nuclear generation, 8 percent large hydroelectric facilities, and 38 percent eligible renewable energies, which includes small hydroelectric and wind (PG&E 2023b).

Electricity

The electricity distribution system of PG&E consists of 106,681 circuit miles of electric distribution lines and 18,466 circuit miles of interconnected transmission lines (PG&E 2023a). PG&E owns and maintains aboveground and belowground networks of electric and gas transmission and distribution facilities throughout the unincorporated county.

PG&E electricity is generated by a combination of sources such as nuclear power plants and hydro-electric dams, as well as newer sources of energy, such as wind turbines and photovoltaic plants or "solar farms." "The Grid," or bulk electric grid, is a network of high-voltage transmission lines, linked to power plants within the PG&E system. The distribution system, made up of lower-voltage secondary lines, is at the street and neighborhood level, and consists of overhead or underground distribution lines, transformers, and individual service "drops" that connect to the individual customer.

Natural Gas

PG&E gas transmission pipeline systems serve approximately 4.5 million gas customers in northern and central California (PG&E 2023a). The system is operated under an inspection and monitoring program. The system operates in real time on a 24-hour basis, and includes leak inspections, surveys, and patrols of the pipelines. PG&E also adopted

the Pipeline 2020 program, which aims to modernize critical pipeline infrastructure, expand the use of automatic or remotely operated shut-off valves, catalyze development of next-generation inspection technologies, develop industry-leading best practices, and enhance public safety partnerships with local communities, public officials, and first responders. Total natural gas consumption in the PG&E service area was 4,449 million therms for 2022 (CEC 2024b).

Transportation Energy

California is among the top producers of petroleum in the country, with crude oil pipelines throughout the state connecting to oil refineries in the Los Angeles, San Francisco Bay, and Central Valley regions. In addition to producing petroleum, California is also one of the top consumers of fuel for transportation. California's transportation sector accounted for approximately 42 percent of California's total energy demand in 2022, amounting to approximately 2,915.8 trillion British thermal units (BTUs) (US EIA 2022).

Alternative fuels for the transportation sector, such as hydrogen, biodiesel, and electricity, are used to reduce the demand for petroleum. Use of these fuels is encouraged through statewide regulations and plans, including the Low Carbon Fuel Standard (LCFS) and SB 32. In particular, use of electricity within the transportation sector has become more prominent. Electric and plug-in hybrid vehicles may rely directly on electricity from the power grid. In addition, emerging technology such as fuel cells are currently being explored to use electricity generated from the vehicle to power motors. California currently has 14,132 electric vehicle charging stations, with approximately 37,970 charging ports across all station locations (USDE 2023).

5.6.2 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:

ENE-1 Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.

ENE-2 Conflict with or obstruct a State or local plan for renewable energy or energy efficiency.

ENE-3 Require or result in the re-location or construction of new or expanded energy facilities, the construction or re-location of which could cause significant environmental effects.

The analysis also utilizes considerations identified in Appendix F of the CEQA Guidelines, as appropriate, to assist in answering Appendix G questions. The factors to evaluate energy impacts under Threshold (a) include:

- The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project including construction, operation, maintenance and/or removal. If appropriate, the energy intensiveness of materials may be discussed.
- The effects of the project on local and regional energy supplies and on requirements for additional capacity.
- The effects of the project on peak and base period demands for electricity and other forms of energy.
- The degree to which the project complies with existing energy standards.
- The effects of the project on energy resources.
- The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives

5.6.3 Methodology

Wasteful, Inefficient, or Unnecessary Energy Consumption

To determine whether the proposed project would result in wasteful, inefficient, or unnecessary consumption of energy resources, this analysis will utilize the guidance provided in Appendix F of the CEQA Guidelines as well as the analytical precedent set by *League to Save Lake Tahoe Mountain etc. v. County of Placer* (2022) (75 Cal.App.5th 63, 164-168).

According to Appendix F of the CEQA Guidelines, the goal of conserving energy is translated to include decreasing overall per-capita energy consumption; decreasing reliance on fossil fuels such as coal, natural gas, and oil; and increasing reliance on renewable energy sources. In *League to Save Lake Tahoe Mountain etc. v. County of Placer* (2022) (75 Cal.App.5th 63, 164-168), the Appellate Court concluded that the analysis of wasteful, inefficient, and unnecessary energy consumption was not adequate because it did not consider whether additional renewable energy features could be added to the project.

The proposed project would be considered to result in a potentially significant impact if it would result in wasteful, inefficient, or unnecessary consumption of energy resources. Considering the guidance provided by Appendix F of the CEQA Guidelines and the

Appellate Court decision in *League to Save Lake Tahoe Mountain etc. v. County of Placer* (2022) (75 Cal.App.5th 63, 164-168), the proposed project would be considered to result in wasteful, inefficient, or unnecessary consumption of energy resources if it would conflict with the following energy conservation goals:

- Decrease overall per-capita energy consumption.
- Decrease reliance on fossil fuels such as coal, natural gas, or oil.
- Increase reliance on renewable energy sources.

Renewable Energy and Energy-Efficiency Plan Consistency

This impact discussion focuses on project consistency with a local plan or policy adopted for the purpose of improving energy efficiency or reliance on renewable energy sources. The proposed project will be analyzed against the relevant policies intended to improve energy efficiency and encourage the use of renewable energy sources. As such, the proposed project could conflict with the applicable energy-efficiency or renewable energy plan if it would not adhere to applicable energy consumption measures.

5.6.4 Proposed General Plan Goals and Policies

The following goals, policies, and actions from the proposed General Plan Update are applicable to energy impacts.

Land Use Element

- **Goal LU-2:** To maintain and enhance Rio Vista while providing a safe, family-friendly small town character.
  - **Policy LU-1:** Promote the development of compact, complete residential neighborhoods by encouraging the location of services and amenities within walking and biking distance of residences.
  - **Policy LU-3:** Encourage new residential development to incorporate design features that promote walking and connectivity between blocks and adjacent neighborhoods.
  - **Policy LU-6:** Encourage development in the North Waterfront District to be a mix of uses including residential, commercial, and public park space along the waterfront.
  - **Policy LU-9:** Promote pedestrian-oriented retail and mixed use development in Neighborhood Mixed Use, Downtown, and the Waterfront areas.

Mobility and Circulation Element

- **Goal MC-1:** A circulation and mobility system that prioritizes safety and supports and accommodates all modes of transportation.
- **Goal MC-2:** A network of roads and trails that balances local mobility needs of community members with the needs of regional circulation/commuters passing through Rio Vista.
- **Goal MC-3:** A citywide circulation system that is adequate and evolves to meet the needs of the community over time.
  - **Policy MC-2:** Require new development projects to provide primary roadways and connected and continuous pedestrian and bicycle routes as generally depicted in Figure 3.2.
  - **Policy MC-3:** New development projects that require an amendment to the General Plan should strive not to increase base year citywide average VMT per capita, as measured by home-based VMT per resident and home-based VMT per employee or other applicable metric as determined by the city.
  - **Policy MC-10:** Prioritize planning and construction of a Highway 12 bicycle and pedestrian grade-separated crossing over expansion of vehicular travel lanes on Highway 12.
  - **Policy MC-14.** Provide a complete sidewalk and bicycle network throughout the city. Use discretionary funding sources and grant funding for the following priority projects:
    - Identify gap segments in sidewalks, bike lanes or bikeways, and other bicycle and pedestrian facilities where near-term development is not anticipated.
    - Prioritize construction of pedestrian and bicycle facilities in areas with a high potential for injury.
    - Prioritize completion of gaps in bicycle and pedestrian facilities near important destinations, such as schools, parks, and commercial areas.
  - **Policy MC-15:** In new construction, provide mid-block pedestrian crossings and off-street pedestrian paths in areas with high pedestrian traffic to create more direct walking routes.
  - **Policy MC-16:** The City's circulation network should accommodate all anticipated and potential modes of transportation, including small personal electric vehicles ranging in size up to golf carts.

Open Space and Conservation Element

- **Goal OSC-3:** To utilize energy and water resources wisely, and to promote conservation programs for lower energy and water consumption in the City.
  - **Policy OSC-7:** Require use of native or compatible non-native plant species that are drought-resistant and water conserving in publicly owned landscape areas.
  - **Policy OSC-11:** Require that site preparation and construction activities incorporate effective measures to minimize dust emissions and pollutant emissions from motorized construction equipment and vehicles.
  - **Policy OSC-13:** Promote energy conservation programs for all utility users and encourage active and passive solar energy design in building and site development. Promote more tree planting and landscaping in the City to reduce the heat island effect in the City and address climate change.

Parks and Recreation Element

- **Goal PR-4:** To develop a comprehensive and unified trails and pathways system for bicycle and pedestrian travel that links community activity centers.
  - **Policy PR-9:** Create an integrated trail, bikeway, and open space network within the City that links parks and recreation areas, schools, downtown, the waterfront, and residential neighborhoods. These should also provide connections to regional trails, bikeways, and open space areas.

Open Space and Conservation Element

- **Goal OSC-3:** To utilize energy and water resources wisely, and to promote conservation programs for lower energy and water consumption in the City and to protect them from demand from new developments outside the City.
  - **Policy OSC-14:** Promote energy conservation programs for all utility users and encourage active and passive solar energy design in building and site development. Promote more tree planting and landscaping in the City to reduce the heat island effect and address climate change.

Public Facilities and Services Element

- **Goal PF-1:** To provide quality and reliable public facilities and services to members of the community.

- **Goal PF-2:** To provide public facilities and services in a cost-effective manner.
  - **Policy PF-1:** Maintain roadways to allow for the safe travel of all vehicles, pedestrians, and bicyclists. Emphasize preventative maintenance to reduce costs associated with roadway replacement.
  - **Policy PF-2:** Maintain and construct new sidewalks to encourage walking and provide safe facilities for pedestrians.
  - **Policy PF-5:** Require on-site stormwater management system (i.e., "green infrastructure") design and Low Impact Development (LID) techniques, per the City to improve runoff water quality and decrease runoff volume.

Safety Element

- **Goal SE-3:** To increase the resilience of the community to climate change.
  - **Policy SE-10:** Incorporate shade structures, installation of green space, public drinking water facilities, and heat-resilient building techniques into public and private projects, as feasible, to ensure that key public facilities, are adequately protected and residents and visitors can prepare for extreme heat.

5.6.5 Environmental Impacts

Impact 5.6-1: Implementation of the proposed project would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation. [Threshold ENE-1]

Short-Term Construction Impacts

Construction of development projects facilitated by the General Plan Update would create temporary demands for electricity. Natural gas is not generally required to power construction equipment and therefore is not anticipated during construction phases. Electricity use would fluctuate according to the phase of construction. Additionally, it is anticipated that most electric-powered construction equipment would be hand tools (e.g., power drills, table saws, compressors) and lighting, which would result in minimal electricity usage during construction activities.

Construction of development projects facilitated by the General Plan Update would also temporarily increase demands for energy associated with transportation. Transportation energy use depends on the type and number of trips, VMT, fuel efficiency of vehicles, and travel mode. Energy use during construction would come from the transport and use of construction equipment, delivery vehicles and haul trucks, and construction employee

vehicles that would use diesel fuel or gasoline. The use of energy resources by these vehicles would fluctuate according to the phase of construction and would be temporary. It is anticipated that most off-road construction equipment, such as those used during demolition and grading, would be gas or diesel powered. In addition, all operation of construction equipment would cease upon completion of project construction.

Furthermore, the construction contractors would minimize nonessential idling of construction equipment during construction in accordance with the CCR Title 13, Article 4.8, Chapter 9, Section 2449. Such required practices would limit wasteful and unnecessary energy consumption in development in Rio Vista. Moreover, future development projects within the city would be similar to the construction processes of any current development projects within Rio Vista. Therefore, the proposed project would not result in wasteful, inefficient, or unnecessary consumption of fuel use during construction.

Long-Term Impacts During Operation

Operation of new development projects accommodated under the proposed project would create additional demands for electricity and natural gas compared to existing conditions. Operational use of electricity and natural gas would include heating, cooling, and ventilation of buildings; water heating; operation of electrical systems; use of on-site equipment and appliances; and lighting.

Non-transportation Energy

Operation of potential future development accommodated under the proposed project would create additional demand for electricity and natural gas compared to existing conditions. Operational use of electricity and natural gas would include heating, cooling, and ventilation of buildings; water heating; operation of electrical systems; use of on-site equipment and appliances; lighting; and charging electric vehicles. Land uses accommodated under the proposed project would also result in additional demand for transportation fuels (e.g., gasoline and diesel) associated with on-road vehicles. Electricity, natural gas, and transportation fuel consumption estimates during operation of the proposed project are presented in Table 5.6-1, *Year 2045 Forecast Energy Consumption*. Table 5.6-1 expresses the energy consumption expected under buildout of the proposed project in addition to energy consumption under buildout of the existing General Plan.

Table 5.6-1 Year 2045 Forecast Energy Consumption

Source	Annual Energy Consumption (Proposed General Plan)	Annual Energy Consumption (Existing General Plan)
Building – Electricity [1]	727,738,496	412,801,212
Building – Natural Gas [2]	1,224,397,848	862,043,416
Transportation – Diesel [3]	9,353,946	7,260,210
Transportation – Gasoline[3]	32,852,593	18,908,059

1 Energy resource is expressed in kilowatt-hours (kWh).
2 Energy resource is expressed in British thermal units (kBTU).
3 Diesel, compressed natural gas (CNG), and gasoline fuels are expressed in gallons.

As shown in Table 5.6-1, buildout under the proposed project would result in the annual consumption of 9,353,946 gallons of diesel, and 32,852,593 gallons of gasoline associated with vehicle fuel usage. Considering that the introduction of up to 2,467 new units could accommodate an estimated 6,167 new residents, totaling 7,714 units and 16,722 residents at full buildout, the proposed project is anticipated to result in approximately 559 gallons of diesel fuel, and 1,965 gallons of gasoline fuel per capita.[2] As previously discussed, the proposed project would be considered to have a potentially significant impact if it would result in wasteful, inefficient, or unnecessary consumption of energy resources. Considering the guidance provided in Appendix F of the CEQA Guidelines and the Appellate Court decision in *League to Save Lake Tahoe Mountain etc. v. County of Placer* (2022) (75 Cal.App.5th 63, 164-168), the proposed project would be considered to result in wasteful, inefficient, or unnecessary consumption of energy resources if it would conflict with any of the following energy conservation goals:

- Decrease overall per-capita energy consumption.
- Decrease reliance on fossil fuels such as coal, natural gas, or oil.
- Increase reliance on renewable energy sources.

Decreasing Overall Per-Capita Energy Consumption

As shown in Table 5.6-1, the energy demand for the city would increase compared to existing conditions as the new energy consumption would account for development in the city beyond existing conditions. However, development accommodated under the proposed project would be required to comply with the current and future updates to the Building Energy Efficiency Standards and CALGreen. Compliance with CALGreen energy-efficiency standards would contribute to reducing the building-related energy

2 Note energy consumption modeled for the proposed project is based on outdated buildout assumptions that conservatively overestimate development under the proposed project. See Section 4.3, *Air Quality*, for more details.

demands shown in Table 5.6-1. New and replacement buildings in compliance with these standards would generally have greater energy efficiency than existing buildings. In addition, not all development envisioned by the proposed project would be constructed under the current California Building Code cycle and would be subject to future iterations of CALGreen and other related building codes. It is anticipated that each update to the Building Energy Efficiency Standards and CALGreen will result in greater building-related per-capita energy efficiency and move closer toward buildings achieving zero net energy demand.

In addition to the Building Energy Efficiency Standards and CALGreen, the proposed project includes policies to increase energy efficiency and storage such as Policy OSC-13, which would promote energy conservation programs for all utility users and encourage active and passive solar energy design in building and site development as well as Policy SE-10, which would incorporate shade structures, installation of green space, public drinking water facilities, and heat-resilient building techniques into public and private projects. Additionally, the proposed project includes policies which would encourage water-conserving mechanisms in existing and new development, such as Policy OSC-7, which would require the use of native or compatible non-native plant species that are drought-resistant and water conserving in publicly owned landscape areas as well as Policy PF-5, which would require on-site stormwater management system design and LID techniques, per the City to improve runoff water quality and decrease runoff volume. Encouraging sustainable and energy-efficient building practices and using more renewable energy strategies will further reduce energy consumption within the city and move closer toward achieving zero net energy.

As stated above, the proposed General Plan Policies would serve to improve energy efficiency and reduce energy consumption in new development facilitated by the proposed project. As a result, per service population heating fuel consumption is expected to decrease in 2045 compared to existing baseline conditions.

Additionally, fuel efficiency of vehicles during the buildout year of 2045 would on average improve compared to vehicle fuel efficiencies experienced under existing conditions, thereby resulting in a lower per-capita fuel consumption in 2045 assuming travel distances, travel modes, and trip rates remain the same. The improvement in fuel efficiency would be attributable to regulatory compliance (e.g., CAFE standards), resulting in new cars that are more fuel efficient and the attrition of older, less fuel-efficient vehicles. The CAFE standards are not directly applicable to residents or land use development projects, but to car manufacturers. Thus, city residents do not have direct control in determining the fuel efficiency of vehicles manufactured and that are made available.

However, compliance with the CAFE standards by car manufacturers would ensure that vehicles produced in future years have greater fuel efficiency and would generally result in an overall benefit of reducing fuel usage by providing the population of the city more fuel-efficient vehicle options. Considering the proposed project would result in the construction and operation of new buildings that would have on average the same or greater energy-efficient designs than current structures and vehicle fuel efficiencies would improve year over year through the buildout year of 2045, the proposed project is anticipated to result in a decrease in overall per-capita energy consumption in 2045. As such, the proposed project would be consistent with this energy conservation criterion.

Decreasing Reliance on Fossil Fuels

The proposed project would be considered to conflict with this criterion if it did not take steps to decrease the reliance on fossil fuels. New and replacement buildings in compliance with CALGreen standards would generally have greater energy efficiency than existing buildings. In addition, not all units envisioned by the proposed project would be constructed under the current California Building Code cycle and would be subject to future iterations of CALGreen and other related building codes. It is anticipated that each update to the Building Energy Efficiency Standards and CALGreen will result in greater building-related per-capita energy efficiency and move closer toward buildings achieving zero net energy demand.

In addition, the proposed project envisions new development throughout the city, which would be required to install rooftop solar, as applicable. New single-family residences would be required to comply with Title 24, Part 6, Subchapter 8, Section 150.1(c)14 and new multifamily residences would be required to comply with Title 24, Part 6, Subchapter 11, Section 170.2(f), of the 2022 California Building Code to include rooftop solar systems. Compliance with these codes would decrease overall reliance on fossil fuels for electricity generation as some on-site electricity consumption could be satisfied with on-site electricity generation.

Moreover, as previously discussed, fuel efficiency of vehicles during the buildout year of 2045 would on average improve compared to vehicle fuel efficiencies experienced under existing conditions. In addition to regulatory compliance that would contribute to more fuel-efficient vehicles and less per-capita demand on fuels, the General Plan Update includes policies that will contribute to minimizing overall VMT, and thus incrementally decreasing dependance on fossil fuels for transportation energy needs. The following policies in the Land Use Element and Mobility and Circulation Element would encourage non-vehicular travel modes in the design and development of future projects:

- **Policy LU-1:** Promote the development of compact, complete residential neighborhoods by encouraging the location of services and amenities within walking and biking distance of residences.
- **Policy LU-3:** Encourage new residential development to incorporate design features that promote walking and connectivity between blocks and adjacent neighborhoods.
- **Policy MC-2:** Require new development projects to provide primary roadways and connected and continuous pedestrian and bicycle routes as generally depicted in Figure 3.2.
- **Policy MC-10:** Prioritize planning and construction of a Highway 12 bicycle and pedestrian grade-separated crossing over expansion of vehicular travel lanes on Highway 12.
- **Policy MC-14:** Provide a complete sidewalk and bicycle network throughout the city. Use discretionary funding sources and grant funding for the following priority projects:
  - Identify gap segments in sidewalks, bike lanes or bikeways, and other bicycle and pedestrian facilities where near-term development is not anticipated.
  - Prioritize construction of pedestrian and bicycle facilities in areas with a high potential for injury.
  - Prioritize completion of gaps in bicycle and pedestrian facilities near important destinations, such as schools, parks, and commercial areas.
- **Policy MC-15:** In new construction, provide mid-block pedestrian crossings and off-street pedestrian paths in areas with high pedestrian traffic to create more direct walking routes.

Policies in the Circulation Element would aid in minimizing VMT such as Policy MC-3, which would encourage new development projects that require an amendment of the General Plan to not increase base year citywide average VMT per capita. Considering this, the proposed project would result in the construction and operation of development that would be designed to be compliant with the California Building Code, thereby reducing reliance on fossil fuels for space and water heating. In addition, the proposed project would result in population growth that would result in subsequent increases in transportation energy demand; however, with improving fuel-efficiency standards year over year through the buildout year of 2045 and compliance with the EV charging infrastructure requirements contained in the California Building Code, the proposed project would, on average, reduce reliance on fossil fuels for transportation energy

demand. Therefore, the proposed project would be considered consistent with this energy conservation criterion.

Increasing Reliance on Renewable Energy Sources

As previously discussed, the 2022 CBSC currently requires a variety of development projects that do not meet specific exceptions or exemptions to include rooftop PV systems and BES infrastructure. Specifically, the 2022 CBSC requires new single-family residences, multi-family residences no greater than 3 stories, and many nonresidential land uses no greater than 3 stories to include rooftop PV systems and multi-family and nonresidential land uses that require PV systems to also have BES infrastructure. Compliance with these codes would directly increase overall reliance on renewable energy sources for electricity generation. In addition, it is anticipated that each new code cycle for the CBSC improves on the last one and requires higher performance for energy efficiency and incorporates additional requirements for on-site renewable energy and EV charging infrastructure. Future development projects accommodated by the proposed project would therefore result in a net increase from existing conditions in on-site PV electricity generation and EV charging stations and associated infrastructure, further supporting and accelerating the adoption of EVs and the use of renewable energy in future years.

Moreover, the proposed project includes various policies that are intended to support the use of renewable energy beyond compliance with the CBSC, including creating a walkable urban environment to encourage future residents and employees in the City to use active modes of transportation instead of motorized vehicles. Policies that support the use of renewable energy resources are listed below:

- **Policy LU-1:** Promote the development of compact, complete residential neighborhoods by encouraging the location of services and amenities within walking and biking distance of residences.
- **Policy LU-3:** Encourage new residential development to incorporate design features that promote walking and connectivity between blocks and adjacent neighborhoods.
- **Policy MC-10:** Prioritize planning and construction of a Highway 12 bicycle and pedestrian grade-separated crossing over expansion of vehicular travel lanes on Highway 12.

- **Policy MC-14:** Provide a complete sidewalk and bicycle network throughout the city. Use discretionary funding sources and grant funding for the following priority projects:
  - Identify gap segments in sidewalks, bike lanes or bikeways, and other bicycle and pedestrian facilities where near-term development is not anticipated.
  - Prioritize construction of pedestrian and bicycle facilities in areas with a high potential for injury.
  - Prioritize completion of gaps in bicycle and pedestrian facilities near important destinations, such as schools, parks, and commercial areas.
- **Policy MC-15:** In new construction, provide mid-block pedestrian crossings and off-street pedestrian paths in areas with high pedestrian traffic to create more direct walking routes.
- **Policy MC-16:** The City's circulation network should accommodate all anticipated and potential modes of transportation, including small personal electric vehicles ranging in size up to golf carts.
- **Policy PR-9:** Create an integrated trail, bikeway, and open space network within the City that links parks and recreation areas, schools, downtown, the waterfront, and residential neighborhoods. These should also provide connections to regional trails, bikeways, and open space areas.
- **Policy OSC-14:** Promote energy conservation programs for all utility users and encourage active and passive solar energy design in building and site development. Promote more tree planting and landscaping in the City to reduce the heat island effect and address climate change.
- **Policy PF-1:** Maintain roadways to allow for the safe travel of all vehicles, pedestrians, and bicyclists. Emphasize preventative maintenance to reduce costs associated with roadway replacement.
- **Policy PF-2:** Maintain and construct new sidewalks to encourage walking and provide safe facilities for pedestrians.

As such, the proposed project would be consistent with this energy conservation criterion. Considering the above analysis demonstrating that the proposed project would result in an overall decrease in energy consumption per capita when compared to buildout under the existing General Plan, decrease in reliance on fossil fuels, and increase in renewable energy sources, the proposed project would not result in wasteful, inefficient, or unnecessary consumption of energy resources. Therefore, this impact would be less than significant.

5. Environmental Analysis
ENERGY

Summary

Compliance with federal, State, and local regulations (e.g., Building Energy Efficiency Standards, CALGreen, Renewable Portfolio Standards, and CAFE standards) will increase building energy efficiency and vehicle fuel efficiency and reduce building energy demand and transportation-related fuel usage. Additionally, the General Plan Update includes policies related to land use and transportation planning and design, energy efficiency, public and active transit, and renewable energy generation that will contribute to minimizing building and transportation-related energy demands overall and demands on nonrenewable sources of energy. Implementation of proposed policies under the General Plan Update in conjunction with and complementary to regulatory requirements, will ensure that energy demand associated with growth under the General Plan Update would not be inefficient, wasteful, or unnecessary. Therefore, energy impacts associated with implementation and operation of land uses accommodated under the General Plan Update would be less than significant.

Level of Significance Before Mitigation: Impact 5.6-1 would be less than significant.

Mitigation Measures

No mitigation measures are required.

Impact 5.6-2: Implementation of the proposed project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency. [Threshold ENE-2]

California Renewables Portfolio Standard Program

The state's electricity grid is transitioning to renewable energy under California's RPS Program. Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas. As stated, the RPS goals have been updated since adoption of SB 1078 in 2002. In general, California has RPS requirements of 33 percent renewable energy by 2020 (SB X1-2), 40 percent by 2024 (SB 350), 50 percent by 2026 (SB 100), 60 percent by 2030 (SB 100), 90 percent by 2035 (SB 1020), 95 percent by 2040 (SB 1020), and 100 percent by 2045 (SB 100). SB 100 also establishes RPS requirements for publicly owned utilities that consist of 44 percent renewable energy by 2024, 52 percent by 2027, and 60 percent by 2030. The statewide RPS requirements do not directly apply to individual development projects, but to utilities and energy providers such as PG&E, whose compliance with RPS requirements would contribute to the State of California objective of transitioning to renewable energy. The land uses accommodated

under the proposed project would comply with the current and future iterations of the Building Energy Efficiency Standards and CALGreen.

Furthermore, the project includes Open Space and Conservation Element policies such as Policy OSC-11, requires that site preparation and construction activities incorporate effective measures to minimize dust emissions and pollutant emissions from motorized construction equipment and vehicles, and Policy OSC-13, which promotes energy conservation programs for all utility users and encourage active and passive solar energy design in building and site development. Therefore, implementation of the proposed project would not conflict with or obstruct implementation of California's RPS program, and no impact would occur.

Level of Significance Before Mitigation: Impact 5.6-2 would be less than significant.

Mitigation Measures

No mitigation measures are required.

Impact 4.6-3: The proposed project would not require or result in the relocation or construction of new or expanded energy facilities, the construction or relocation of which could cause significant environmental effects. [Threshold ENE-3]

The proposed project would accommodate future growth in the city that would require new or expanded energy facilities; however, the proposed project would not directly result in the construction of new or expanded energy facilities. The Integrated Resource Plan (IRP) is the principal planning document that identifies CAISO's forecasts for electricity demand, supply, and transmission needs over a 20-year planning horizon, as well as its strategies for integrating renewable energy resources and other grid services to meet those needs. These forecasts take into account the expected growth in population and development in corresponding Local Serving Entity's (LSE's) service areas, such as the population and development envisioned under the proposed project within PG&E's service area.

The IRP is developed in collaboration with LSEs, regulators, and other stakeholders, and is updated periodically to reflect changes in the energy landscape and evolving policy goals (CEC 2020). Overall, the IRP plays a critical role in ensuring the reliability and resilience of California's electricity grid as the state continues to transition to a cleaner and more sustainable energy system. When an LSE identifies that new or expanded energy facilities are needed to accommodate the population and development growth in

its service area, those proposed improvements are reviewed to identify consistency with local, State, and federal regulatory compliance as well as potential environmental effects that may result. For on-site systems, such as rooftop solar, the review would be conducted by the applicable lead agency as part of that individual development project. For energy infrastructure improvements that involve the construction of new or expanded existing transmission lines, generation systems, or Battery Energy Storage (BES) facilities, separate from an individual development project, the review would be conducted by the California Public Utilities Commission (CPUC) and/or the California Energy Commission (CEC) depending on the type of facility. The CEC typically acts as a CEQA lead or responsible agency for energy infrastructure improvements involving generation or BES systems, whereas the CPUC typically acts as a CEQA lead or responsible agency for improvements involving transmission lines or other distribution infrastructure.

Once the new or expanded energy facility is reviewed and approved, incorporating any necessary and appropriate mitigation, it is assigned a point of interconnection on the grid, and its output is added to the IRP as a resource that can provide electricity and other grid services, such as frequency regulation or ramping support. The facility is then dispatched by CAISO based on its bids into the day-ahead and real-time electricity markets, and its output is used to help balance supply and demand on the grid in real-time. CAISO operates a wholesale electricity market in which LSEs can participate by offering to buy or sell electricity and other grid services, such as demand response or energy storage. This market helps to ensure that the electricity system operates efficiently and reliably by providing economic incentives for electricity providers to use their resources effectively.

In addition to the IRP, which principally governs the planning efforts for new and expanded electricity and natural gas facilities, the CPUC in December 2022 adopted a new framework to comprehensively review utility natural gas infrastructure investments in order to help the State transition away from natural gas fueled technologies and avoid stranded assets in the gas system. The new framework requires utilities to seek CPUC approval of natural gas infrastructure projects of $75 million or more or those with significant air quality impacts. The new framework is intended to capture natural gas projects likely to have the most substantial community and environmental impacts and to require demonstrate project compliance with CEQA (CPUC 2022). Therefore, while the proposed project may result in increased energy resource demand by facilitating population and development growth in the city, and subsequently in PG&E's service area, any new or expanded facilities needed as a result of meeting that increased demand would undergo its own review to mitigate potentially significant environmental effects and demonstrate compliance with regulatory requirements. As such, the proposed project

would not result in new or expanded energy facilities which may cause significant environmental effects. This impact would be less than significant.

Level of Significance Before Mitigation: Impact 5.6-3 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.6.6 Cumulative Impacts

The area considered for cumulative impacts on electricity and natural gas supplies and facilities is PG&E service areas. Other future development in the PG&E service areas would be subject to existing state regulations. As described under Impacts 5.6-1 and 5.6-2, the proposed project includes policies to reduce energy consumption and promote renewable energy sources which align with the State's goals for carbon neutrality. Cumulative impacts would be less than significant, and impacts would not be cumulatively considerable.

5.6.7 Level of Significance Before Mitigation

After implementing regulatory requirements and standard conditions of approval, all impacts would be less than significant: 5.6-1, 5.6-2, and 5.6-3.

5.6.8 Mitigation Measures

No mitigation measures are required.

5.6.9 Level of Significance After Mitigation

All impacts would be less than significant.

5.6.10 References

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5.7 GEOLOGY, SOILS, AND MINERAL RESOURCES

This section describes the regulatory framework and existing geology, soils, and mineral resources and evaluates the potential impacts the General Plan Update (proposed project) can have on Rio Vista. A summary of the relevant regulatory framework and existing conditions is followed by a discussion of potential impacts and cumulative impacts related to implementation of the proposed project.

Minerals are defined as any naturally occurring chemical elements or compounds, formed from inorganic processes and organic substances. A minable mineral or an “ore deposit” is defined as a deposit of ore or mineral having a value materially exceeding the cost of developing, mining, and processing the mineral and reclaiming the project area.

5.7.1 Environmental Setting

5.7.1.1 REGULATORY BACKGROUND

Federal

Paleontological Resources Preservation Act

This legislation directs the Secretaries of the U.S. Department of the Interior and U.S. Department of Agriculture to manage and protect paleontological resources on federal land using “scientific principles and expertise.” To formulate a consistent paleontological resources management framework, the Paleontological Resources Preservation Act (PRPA) incorporates most of the recommendations from the report of the Secretary of the Interior titled “Assessment of Fossil Management on Federal and Indian Lands. In passing the PRPA, Congress officially recognized the scientific importance of paleontological resources on some federal lands by declaring that fossils from these lands are federal property that must be preserved and protected. The PRPA codifies existing policies of the Bureau of Land Management, National Park Service, US Forest Service, Bureau of Reclamation, and US Fish and Wildlife Service, and provides the following:

- Uniform criminal and civil penalties for illegal sale and transport, and theft and vandalism of fossils from federal lands.
- Uniform minimum requirements for paleontological resource-use permit issuance (terms, conditions, and qualifications of applicants).
- Uniform definitions for “paleontological resources” and “casual collecting.”
- Uniform requirements for curation of federal fossils in approved repositories.

National Environmental Policy Act of 1969

The National Environmental Policy Act of 1969 (NEPA), as amended, recognizes the continuing responsibility of the federal government to "preserve important historic, cultural, and natural aspects of our national heritage…" (Title 42 US Code [USC] Section 4321). With the passage of the PRPA, paleontological resources are considered a significant resource, and it is therefore now standard practice to include paleontological resources in NEPA studies in all instances where there is a possible impact.

Antiquities Act of 1906

The Antiquities Act of 1906 (16 USC 431-433) states, in part:

> That any person who shall appropriate, excavate, injure or destroy any historic or prehistoric ruin or monument, or any object of antiquity, situated on lands owned or controlled by the Government of the United States, without the permission of the Secretary of the Department of the Government having jurisdiction over the lands on which said antiquities are situated, shall upon conviction, be fined in a sum of not more than five hundred dollars or be imprisoned for a period of not more than ninety days, or shall suffer both fine and imprisonment, in the discretion of the court.

Although there is no specific mention of natural or paleontological resources in the act itself, or in the act's uniform rules and regulations (Title 43 Part 3, Code of Federal Regulations [43 CFR 3]), the term "objects of antiquity" has been interpreted to include fossils by the National Park Service, Bureau of Land Management, the US Forest Service, and other federal agencies. Permits to collect fossils on land administered by federal agencies are authorized under this act. However, due to the large gray areas left open to interpretation due to the imprecision of the wording, agencies are hesitant to interpret this act as governing paleontological resources.

Earthquake Hazards Reduction Act

The Earthquake Hazards Reduction Act of 1977 was intended to reduce the risks to life and property from future earthquakes in the United States through the establishment and maintenance of an effective earthquake hazards and reduction program. Pursuant to this act, the National Earthquake Hazards Reduction Program was established, which designates the Federal Emergency Management Agency as the lead agency of the program. Programs provide valuable resources to guide building code requirements and

planning efforts such as emergency evacuation responsibilities and seismic code standards.

State

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 was intended to mitigate the hazard of surface fault rupture by prohibiting the location of structures for human occupancy across the trace of an active fault. The act delineates "Earthquake Fault Zones" along faults that are "sufficiently active" and "well defined." The act also requires that cities and counties withhold development permits for sites in an earthquake fault zone until geologic investigations demonstrate that the sites are not threatened by surface displacement from future faulting. Pursuant to this act, structures for human occupancy are not allowed within 50 feet of the trace of an active fault.

Mining Claims

A mining claim is a parcel of land for which the claimant has asserted a right of possession and the right to develop and extract a discovered, valuable, mineral deposit. This right does not include exclusive surface rights (see Public Law 84-167).

Types of Claims

- **Lode Claims.** Deposits subject to lode claims include classic veins or lodes having well-defined boundaries. They also include other rock in-place bearing valuable minerals and may be broad zones of mineralized rock. Examples include quartz or other veins bearing gold, gems, or other metallic minerals and large volume, but low-grade disseminated gold deposits. Descriptions are by metes and bounds surveys beginning at the discovery point on the claim and including a reference to natural objects or permanent monuments. Federal statute limits their size to a maximum of 1,500 feet in length and a maximum width of 600 feet (300 feet on either side of the vein).
- **Placer Claims.** Placer claims are defined as "…including all forms of deposit, excepting veins of quartz, or other rock in-place." In other words, every deposit not located with a lode claim should be appropriated by a placer location. Placer claims, where practicable, are located by legal subdivision (aliquot part and complete lots). The maximum size is 20 acres per locator, and the maximum for an association placer is 160 acres for 8 or more locators. The maximum size for a corporation is 20 acres per claim. Corporations may not locate association

placer claims unless they are in association with other locators or corporations as co-locators (BLM 2025).

Natural Hazards Disclosure Act

The Natural Hazards Disclosure Act requires that sellers of real property and their agents provide prospective buyers with a Natural Hazard Disclosure Statement when the property being sold lies within one or more State-mapped hazard areas, including a Seismic Hazard Zone. California law also requires that when houses built before 1960 are sold, the seller must give the buyer a completed earthquake hazards disclosure report and a booklet titled "The Homeowners Guide to Earthquake Safety." This publication was written and adopted by the California Seismic Safety Commission.

Seismic Hazards Mapping Act

Earthquakes can cause significant damage even if surface ruptures do not occur. The Seismic Hazards Mapping Act of 1990 was intended to protect the public from the hazards of non-surface fault rupture from earthquakes, including strong ground shaking, liquefaction, seismically induced landslides, or other ground failure. The California Geological Survey prepares and provides local governments with seismic hazard zone maps that identify areas susceptible to non-surface fault hazards. The act requires responsible agencies to approve projects in seismic hazard zones only after a site-specific investigation to determine if the hazard is present, and the inclusion, if a hazard is found, of appropriate mitigation(s).

Surface Mining and Reclamation Act

California's Surface Mining and Reclamation Act of 1975, referred to as SMARA, was enacted to address the need for a continuing supply of mineral resources, and to prevent or minimize the negative impacts of surface mining to public health, property, and the environment. Requirements for SMARA are codified under Public Resources Code (PRC) Sections 2710 et seq. Under State law, all mining operations are required to obtain permits prior to commencing operations and abide by local and State operating requirements. Mining operations are also required to have appropriate reclamation plans in place, provide financial assurances, and abide by State and local environmental laws.

Classification

The California Geological Survey's Mineral Resources Project provides information about California's nonfuel mineral resources. The Mineral Resources Project classifies lands throughout the state that contain regionally significant mineral resources per

SMARA. Nonfuel mineral resources include metals such as gold, silver, iron, and copper; industrial metals such as boron compounds, rare-earth elements, clays, limestone, gypsum, salt and dimension stone; and construction aggregate, including sand, gravel, and crushed stone. Development generally results in a demand for minerals, especially construction aggregate. Urban preemption of prime deposits and conflicts between mining and other uses throughout California led to passage of the SMARA, which requires all cities and counties to incorporate in their General Plans the mapped designations approved by the State Mining and Geology Board.

The classification process involves the determination of Production-Consumption (P-C) Region boundaries, based on identification of active aggregate operations (Production) and the market area served (Consumption). The P-C regional boundaries are modified to include only those portions of the region that are urbanized or urbanizing and are classified for their aggregate content. An aggregate appraisal further evaluates the presence or absence of significant sand, gravel, or stone deposits that are suitable sources of aggregate. The classification of these mineral resources is a joint effort of the State and the local governments. It is based on geologic factors and requires that the State Geologist classify the mineral resources area as one of the following four Mineral Resource Zones (MRZs).

- **MRZ-1.** A Mineral Resource Zone where adequate information indicates that no significant mineral deposits are present or likely to be present.
- **MRZ-2.** A Mineral Resource Zone where adequate information indicates that significant mineral deposits are present, or a likelihood of their presence and development should be controlled.
- **MRZ-3.** A Mineral Resource Zone where the significance of mineral deposits cannot be determined from the available data.
- **MRZ-4.** A Mineral Resource Zone where there is insufficient data to assign any other MRZ designation.

As part of the classification process, an analysis of site-specific conditions is utilized to calculate the total volume of aggregates within individually identified Resource Sectors. Resource Sectors are MRZ-2 areas identified as having regional or statewide significance. Anticipated aggregate demand in the P-C Regions for the next 50 years is then estimated and compared to the total volume of aggregate reserves identified in the P-C Region.

Designation

Once a classification report has been completed, the State Mining and Geology Board may choose, based on recommendations from the State Geologist, to proceed with the second step in SMARA's mineral land identification process, designation of those mineral deposits that are of regional or statewide significance. In contrast to classifications, which inventory mineral deposits without regard to land use or land ownership, the purpose of a designation is to identify deposits that are potentially available from a land-use perspective and are of prime importance in meeting future needs of the region or state.

Soils Investigation Requirements

Requirements for soils investigations for subdivisions requiring tentative and final maps, and for other specified types of structures, are in California Health and Safety Code Sections 17953 to 17955, and in Section 1802 of the California Building Code (CBC). Testing of samples from subsurface investigations is required, such as from borings or test pits. Studies must be done as needed to evaluate slope stability, soil strength, position and adequacy of load-bearing soils, the effect of moisture variation on load-bearing capacity, compressibility, liquefaction, differential settlement, and expansiveness.

California Building Code

Every public agency enforcing building regulations must adopt the provisions of the CBC, which is Title 24, Part 2 of the California Code of Regulations. The most recent version is the 2022 CBC, effective January 1, 2023. The CBC is updated every three years and provides minimum standards to protect property and public safety by regulating the design and construction of excavations, foundations, building frames, retaining walls, and other building elements to mitigate the effects of seismic shaking and adverse soil conditions. The CBC also contains provisions for earthquake safety based on factors including occupancy type, the types of soil and rock on-site, and the strength of ground shaking with specified probability of occurring at a site. A city may adopt more restrictive codes than State law based on conditions in their community.

Requirements for Geotechnical Investigations

Requirements for geotechnical investigations are included in CBC Appendix J, *Grading*, Section J104; additional requirements for subdivisions requiring tentative and final maps and for other specified types of structures are in California Health and Safety Code Sections 17953 to 17955 and in CBC Section 1802. Testing samples from subsurface

investigations is required, such as from borings or test pits. Studies must be done as needed to evaluate slope stability, soil strength, position and adequacy of load-bearing soils, the effect of moisture variation on load-bearing capacity, compressibility, liquefaction, differential settlement, and expansiveness. CBC Section J106 sets forth requirements for inspection and observation during and after grading.

California General Plan Law and General Plan Guidelines

State law (Government Code Section 65302) requires cities to adopt a comprehensive long-term general plan that includes a safety element. The safety element is intended to provide guidance for protecting the community from any unreasonable risks associated with the effects of seismically induced surface rupture, ground shaking, ground failure, tsunami, seiche, and dam failure; slope instability leading to mudslides and landslides; subsidence; liquefaction; other seismic hazards identified by PRC Sections 2691 et. seq.; and other geologic hazards known to the legislative body. The seismic safety element must also include mapping of known seismic and geologic hazards from the California Geological Survey and a series of responsive goals, policies, and implementation programs to improve public safety.

Public Resources Code Section 5097.5 and Section 30244

State requirements for management of paleontological resources are included in PRC Section 5097.5 and Section 30244. These statutes prohibit the removal of any paleontological site or feature from public lands without permission of the jurisdictional agency, define the removal of paleontological sites or features as a misdemeanor, and require reasonable mitigation of adverse impacts on paleontological resources from developments on public (e.g., State, county, city, or district) lands.

Paleontological Assessment Standards

The Society of Vertebrate Paleontology (SVP) has established guidelines for the identification, assessment, and mitigation of adverse impacts on nonrenewable paleontological resources. Most practicing paleontologists in the United States adhere closely to the SVP's assessment, mitigation, and monitoring requirements as outlined in these guidelines, which were approved through a consensus of professional paleontologists. The SVP has helped define the value of paleontological resources and, in particular, indicates that geologic units of high paleontological potential are those from which vertebrate or significant invertebrate or plant fossils have been recovered in the past (i.e., are represented in institutional collections). Only invertebrate fossils that provide new information on existing flora or fauna or on the age of a rock unit would be considered significant. Geologic units of low paleontological potential are those that are

not known to have produced a substantial body of significant paleontological material. As such, the sensitivity of an area with respect to paleontological resources hinges on its geologic setting and whether significant fossils have been discovered in the area or in similar geologic units.

Regional

Solano County Multi-Jurisdictional Hazard Mitigation Plan

The Solano County Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) serves to guide County and City officials in protecting the people and property in the county from the effects of natural disasters and hazard events. This plan demonstrates Solano County's commitment to reducing risk from natural hazards through mitigation and serves as a tool to direct county resources to achieve optimum results with available administrative, technical, and financial resources. This MJHMP provides a comprehensive analysis of the natural and human-caused hazards that threaten the county, with a focus on mitigation, allowing the County to remain eligible to receive additional federal and State funding to assist with emergency response and recovery, as permitted by the federal Disaster Mitigation Act of 2000 and California Government Code Sections 8685.9 and 65302.6; it also complements the efforts undertaken by the existing General Plan Safety Element. The City of Rio Vista is an official participating jurisdiction in the Solano County MJHMP (Solano 2022).

Local

City of Rio Vista 2001 General Plan

The existing General Plan contains the Safety and Noise and Resource Conservation and Management Elements with the following policies related to soil, geological, and mineral resources:

Safety and Noise Element

- **Policy 11.1A:** The City shall continue to monitor seismic activity in the region and take appropriate action if significant seismic hazards, including potentially active faults, are discovered in the planning area.
- **Policy 11.1B:** The City shall continue to mitigate the potential impacts of geologic hazards.
- **Policy 11.1.C:** Soil erosion and sedimentation shall be minimized by maintaining compatible land uses, suitable building designs, and appropriate construction techniques.

- **Policy 11.1.D:** Development projects shall comply with state seismic and building standards in the design and siting of critical facilities, including police and fire stations, school facilities, hazardous material storage facilities, bridges, and large public assembly halls.
- **Policy 11.1E:** The City shall require contour grading, where feasible, and revegetation to mitigate the appearance of engineered slopes and to control erosion.
- **Policy 11.2.A:** The City shall require that new development on hillsides use design, construction, and maintenance techniques that minimize risk to life and property from slope failure, landslides, and flooding.

Resource Conservation and Management Element

- **Policy 10.5G:** The City shall discourage grading activities during the rainy season, unless adequately mitigated, to avoid sedimentation of drainageways and damage to riparian habitat.
- **Policy 10.7A:** The City shall minimize soil erosion and sedimentation by maintaining compatible land uses, suitable building designs, and appropriate construction techniques.
- **Policy 10.11F:** The City shall require new development to incorporate sound soil conservation practices and minimize land alterations. Land shall comply with the following guidelines:
  - Limit grading to the smallest practical area of land, limit land exposure to the shortest practical amount of time, use erosion and sediment control measures, including temporary vegetation sufficient to stabilize disturbed areas, replant graded areas to ensure establishment of plant cover before the next rainy season, create grading contours that blend with the natural contours onsite or with contours on property immediately adjacent to the area of development, ensure that development near or on portions of hillsides does not cause or worsen natural hazards, such as erosion, sedimentation, increased risk of fire, or degraded water quality, and maintain the character and visual quality of the hillside.

City of Rio Vista Municipal Code

Chapter 13.08.253 – Wastewater Discharge Permits

This section states the requirements for obtaining a wastewater discharge permit. An application for the wastewater discharge permit must be filed at least 90 days prior to the date upon which any discharge will begin or re-commence. All users required to obtain a wastewater discharge permit must submit a permit application.

Chapter 13.12 – Natural Gas

The purpose of this chapter is to promote the economic recovery of natural gas in a manner compatible with surrounding land uses and protection of the public health and safety by establishing reasonable limitations, safeguards, and controls on exploration, drilling, production, and transportation of natural gas resources.

Chapter 13.24 – Grading, Erosion, and Sediment Control

This grading ordinance sets forth rules and regulations to control land disturbances, landfill, soil storage, pollution, and erosion and sedimentation resulting from construction activities. This grading ordinance establishes procedures for issuance, administration, and enforcement of permits for such activities. Any grading within the city limits shall conform to provisions of this grading ordinance and other applicable provisions of the City code, including, but not limited to, the latest edition of the standard specifications for public works construction, drainage policies, and the City's improvement standards (Ordinance 010-2014 Section 1). Section 13.24.060 requires that no person shall or permit any grading on any site in the city without first obtaining approval of such grading from the director in accordance with the provisions of this grading ordinance. Section 13.24.250, Erosion and sediment control plan (ESC plan), states that projects must control surface runoff and erosion and retain sediment on a particular site and prevent pollution of site runoff during the period when preconstruction and construction-related grading activities occur.

Section 13.24.010 – Grading, Erosion, and Sediment Control

This section provides regulations on grading on property within the city limits to safeguard life, limb, health, property, and the public welfare, to avoid pollution of watercourses with nutrients, sediments, or other materials generated or caused by surface water runoff, in a manner pursuant to and consistent with the federal Water Pollution Control Act.

Chapter 15.04 – California Building Standards Code Adopted

This chapter adopts the 2022 CBC, with amendments, as the City's Building Code (Ordinance No. 003-2023). As such, all new construction in the city is required to adhere to its seismic safety standards. The Rio Vista Department of Public Works is responsible for the administration and enforcement of the CBC.

Section 16.20.030 – Accompanying Data and Reports

This section requires that a soils report accompanying the final map shall contain an investigation of each lot in the subdivision if the preliminary soils report indicates the presence of critically expansive soils or other soil problems, which, if not corrected, would lead to structural defects. Furthermore, an engineering geology and/or seismic safety report shall accompany the final map and shall contain an investigation of each lot in the subdivision if the preliminary engineering geology and/or seismic safety report indicates the presence of geologic hazards or seismic hazards, which, if not corrected, would lead to structural defects.

Section 17.44.050 – Geological Hazard Areas

This section provides for special building setback lines to regulate the location of buildings where geologically hazardous areas (Rio Vista fault) require in the public interest setback regulations in addition to those otherwise specified in this section.

Section 17.64.010 – Development on property where natural gas property rights exist with current rights of surface entry use.

The purpose of this section is to ensure that all surface development pursuant to the underlying zoning designations takes place in an orderly manner that is compatible with continued or future economic, efficient, and safe production of natural gas. Surface development projects on property with mineral rights must meet either the use permit conditions or the planned unit development permit conditions.

5.7.1.2 EXISTING CONDITIONS

Regional Seismicity

Rio Vista is in an area considered to be seismically active. Major faults in Solano County include the Green Valley Fault system, running north and south through the county; the Great Valley (Midland) Fault zone, which extends north to south through most of the western side of the county; the Great Valley Gordon Valley; the Great Valley Pittsburg–Kirby Hills; and the Franklin Fault, which extends through most of the westernmost tip of the county.

While Rio Vista is at risk from many natural and human-caused hazards, the event with the greatest potential for loss of life or property and economic damage is an earthquake. Rio Vista is subject to seismic risk due to the presence of several active faults in both the San Francisco Bay Area and Delta regions and its proximity to the San Andreas Fault system. Rio Vista lies near several well-defined and active faults that can produce earthquakes of different magnitudes, all of which can affect structural stability of

buildings. The Midland Fault is also considered a potentially active fault, but the Rio Vista Fault is suspected to be inactive. Larger-scale or catastrophic shaking is not very likely, but property and human life in Rio Vista are still at risk for a significant earthquake causing catastrophic damage and strains on response and mitigation resources.

Earthquake risk is very high in Solano County, including Rio Vista, due to the presence of several active faults in both the San Francisco Bay Area and Delta regions. Rio Vista is subject to seismic risk because of its proximity to the San Andreas Fault system. This fault system includes the San Andreas, Hayward, Calaveras, Rogers Creek, Antioch, Green Valley-Concord, and Greenville Faults. All of these faults have been active historically. There are several faults along the eastern, southern, and western bounds of the Montezuma Hills, where Rio Vista is situated. These faults include the Vacaville-Kirby Hills, Rio Vista, Midland, and Antioch Faults.

There is no evidence of recent surface faulting or tectonic creep along the Rio Vista Fault. The Kirby Hills Fault is approximately 11 miles west of the city near Suisun City. The Antioch Fault is approximately eight miles southwest of the city. The Antioch Fault has produced numerous earthquakes during historic times that have caused ground shaking in Rio Vista. The Midland Fault zone extends north to south, approximately one mile east of the city.

Rio Vista lies near several well-defined and active faults that can produce earthquakes of different magnitudes, all of which can affect structural stability of buildings. The Antioch Fault is believed capable of producing a “maximum credible” earthquake and “maximum possible” earthquake with Richter magnitudes of 5.75 and 6.5, respectively. The Midland Fault is also considered a potentially active fault, but the Rio Vista Fault is suspected to be inactive. Figure 5.7-1, *Regional Fault Lines*, shows the location of these faults. The Midland-Fault Zone is approximately 0.3 miles northeast outside the city limits, while the Rio Vista Fault is south of the city, just south of Downtown Rio Vista. There are also no Alquist-Priolo Fault hazard zones within the city; the closest one is 24 miles west of the city (CGS 2022). Other faults inside and outside of Solano County, such as the San Andreas, Concord, Green Valley, and Hayward Faults, may also be capable of generating significant earthquakes with damaging effects in the county.

Geology and Soils

The city of Rio Vista is in the Sacramento Basin, a large structural trough between the California Coast Ranges and Sierra Nevada. The primary subsurface geology in Rio Vista includes quaternary alluvium deposits, which covers 49 percent of Solano County.

Alluvium is loose clay, silt, sand, or gravel that has been deposited by running water in a streambed, on a floodplain, or in an alluvial fan (USGS 2024).

The main soils of the area are Diablo Ayar clays, Antioch-San Ysidro complex, Tujunga fine sand, Valdez silt loam, and Borrow pit. Soils have varying levels of susceptibility to erosion, but each soil type benefits from conservation management techniques to prevent erosion. Soil erosion in Rio Vista occurs as a result of intensive land use, wind, and water erosion. Erosion may be most severe where urbanization, development, recreational activities, logging, and agricultural practices take place. Extreme rainfall events, lack of vegetative cover, fragile soils, and steep slopes combine to accelerate erosion. Wind erosion is the primary factor for soil losses in the Delta areas. Agricultural crops are subject to the erosive forces of water and hillside grazing pastures have been strained by reduced root structure due to years of drought conditions. The conversion of agricultural lands to housing and other development may cause exposed soils to become susceptible to erosion. With proper drainage and landscaping techniques, these altered soils may return to preconstruction stability. If soil instability issues arise, a report, including the recommended corrective actions taken to prevent structural damage to buildings, structures, or improvements must also be submitted.

Liquefaction

In addition to the direct physical damage that can result from the motion of the earthquake, damage can result from liquefaction. Liquefaction occurs where water-logged soils near the ground surface lose compaction during strong ground motion, causing the soils to lose strength and behave as liquid. This can cause building foundations to shift and can result in significant structural damage. Soils susceptible to liquefaction are typically found in areas of low-lying, current, or former floodplains. Liquefaction is most often triggered by seismic shaking, but it can also be caused by improper grading, landslides, or other factors.

Liquefaction potential is greatest along the shoreline areas of the city, and in the eastern and northern portions of the city that encompass the wastewater treatment facility, Rio Vista Municipal Airport, and residential development. Areas with groundwater levels less than 10 feet from the surface can cause the highest liquefaction susceptibility, with lower groundwater levels causing lower liquefaction risks. Site-specific geotechnical studies are the only practical and reliable way of determining the specific liquefaction potential of a site; however, a determination of general risk potential can be provided based on soil type and depth of groundwater. The parts of the city susceptible to liquefaction are shown in Figure 5.7-2, *Liquefaction Hazard Zones*.

Landslides

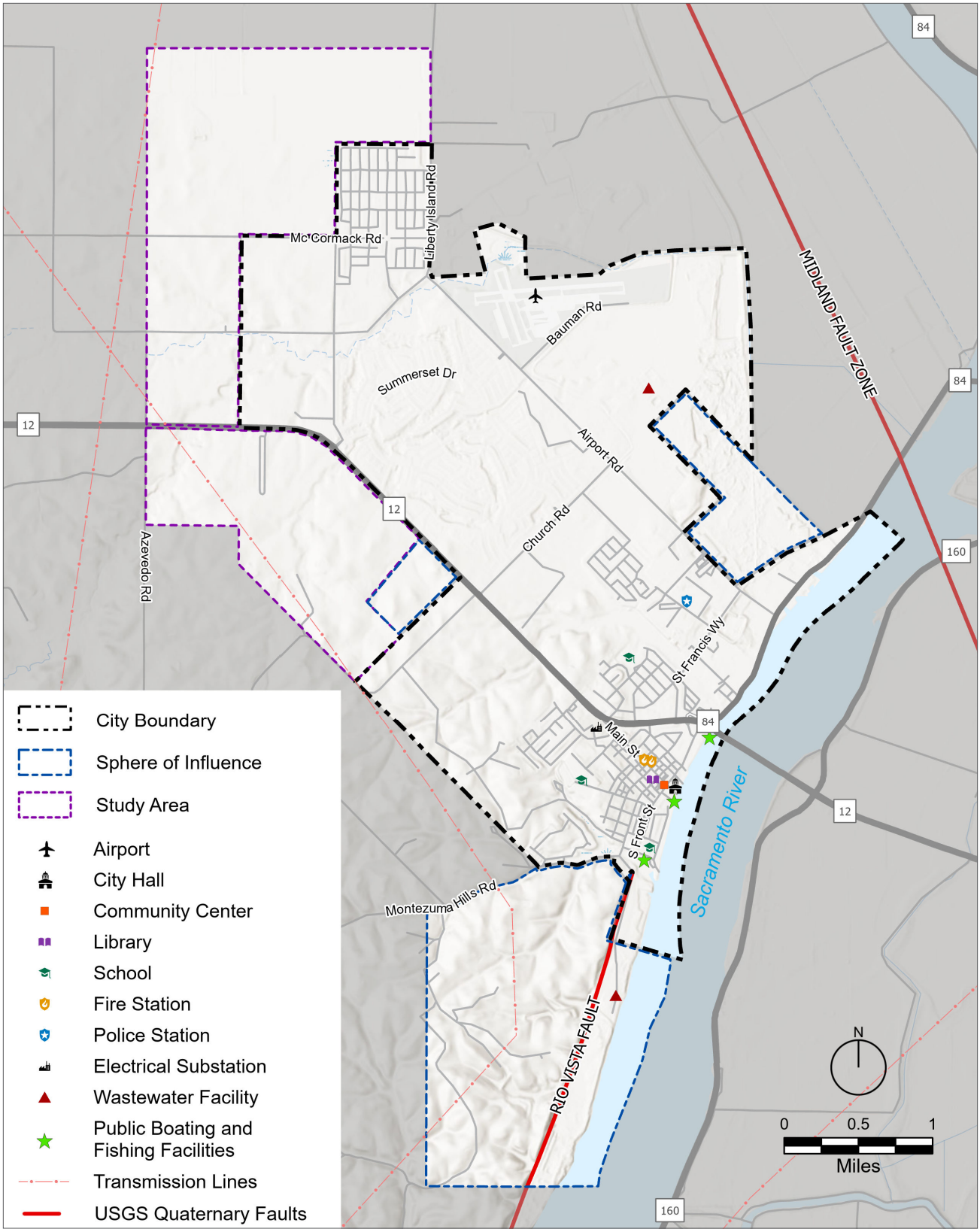
Landslides are often triggered by other natural hazards, such as earthquakes, heavy rain, floods, or wildfires, so landslide frequency is often related to the frequency of these other hazards. In Solano County, landslides typically occur during and after severe storms, so the potential for landslides largely coincides with the potential for sequential severe storms that saturate steep, vulnerable soils. Landslides and mudslides are a common occurrence and have caused damage to homes, public facilities, roads, parks, and sewer lines.

Landslide risk in the city is generally low; however, mapped landslide zones in Rio Vista are mostly found on small slopes throughout the community. Due to the differences in the physical characteristics of slope materials, some superficially similar areas may differ widely in terms of landslide hazard potential. For this reason, site-specific geotechnical analyses are considered essential to the accurate assessment of landslide hazard risk at a given location.

Figure 5.7-3, *Landslide Susceptibility*, illustrates areas in Rio Vista that are most susceptible to landslides. A majority of the city is within a low to medium landslide susceptibility class. However, there are some areas with a high landslide susceptibility class in the southwestern portion of the city, east of State Route (SR-) 12. The Rio Vista fire station, water treatment facility, fishing pier, and school facilities are at risk for landslides.

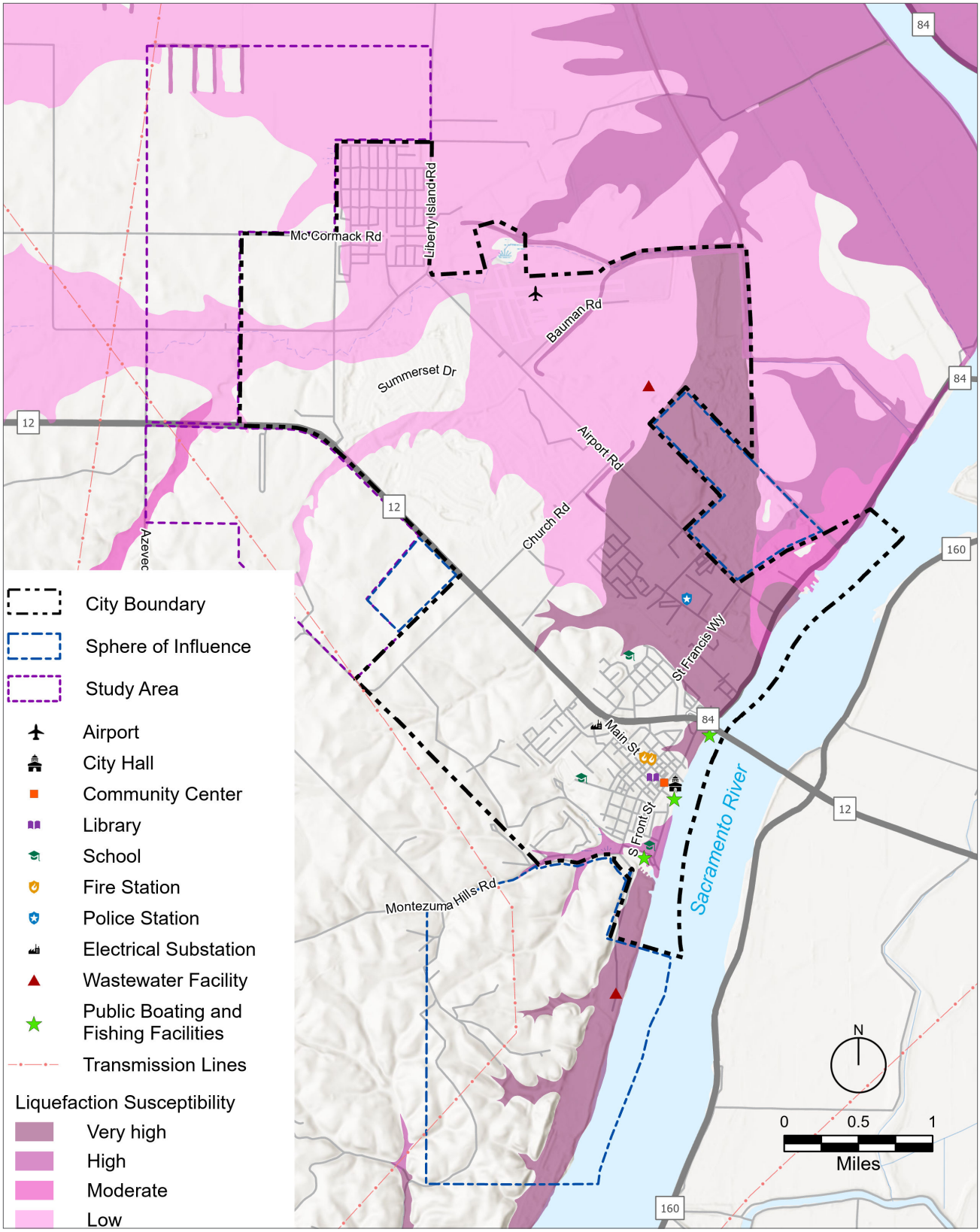
Erosion

Rio Vista is also susceptible to hazards related to erosion, or the geological process in which earthen materials are worn away and transported by natural forces such as water or wind, causing the soil to deteriorate. Eroded topsoil can be transported into streams and other waterways. Water erosion is the removal of soil by water and transportation of the eroded materials away from the point of removal. The severity of water erosion is influenced by slope, soil type, soil water storage capacity, nature of the underlying rock, vegetation cover, and rainfall intensity and duration. The impact of soil erosion on water quality becomes significant, particularly with soil surface runoff. Highly erosive soils can damage roads, bridges, buildings, and other structures.



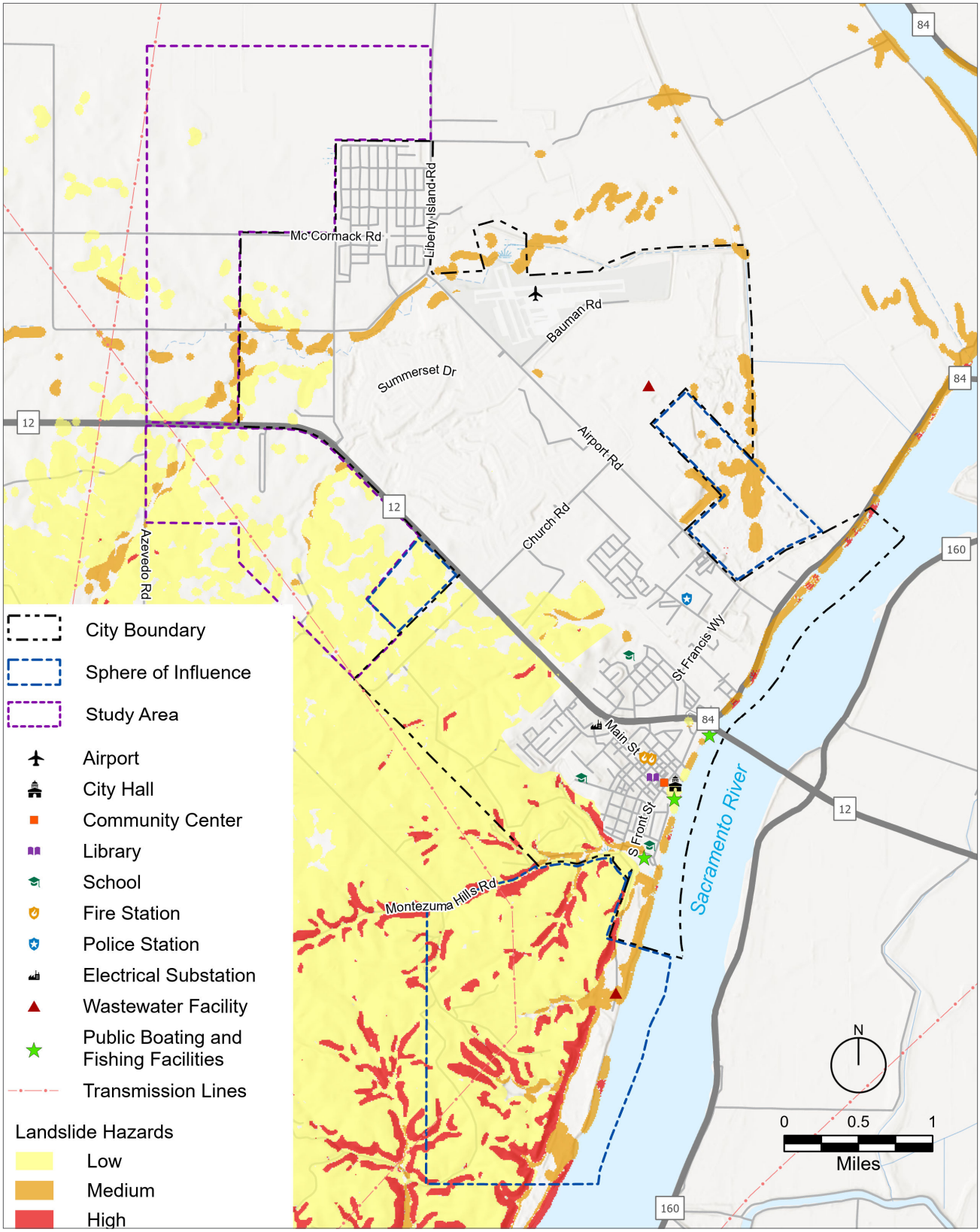
Source: USGS 2017, City of Rio Vista, Solano County 2021, PlaceWorks, 2023.

Figure 5.7-1
Regional Fault Lines



Source: USGS 2019, City of Rio Vista, Solano County 2021, PlaceWorks, 2023.

Figure 5.7-2
Liquefaction Hazard Zones



Source: City of Rio Vista, 2023.

Figure 5.7-3
Landslide Susceptibility

Unsafe Buildings

The principal threat in an earthquake is not ground shaking, fault rupture, or liquefaction, but the damage that the earthquake causes to buildings that house people or an essential function. Continuing advances in engineering design and building code standards over the past decade have greatly reduced the potential for collapse in an earthquake of most new buildings. If serious shaking does occur, newer construction is in general more earthquake resistant than older construction because of improved building codes.

However, approximately 1,445 homes, or 29 percent of all housing, was constructed prior to 1980, prior to the adoption and implementation of more protective building codes. As such, some buildings in the city were built before some of the earthquake design standards were incorporated into the building code. Several specific building types are a particular concern in this regard.

- **Unreinforced Masonry Buildings.** In the late 1800s and early 1900s, unreinforced masonry was the most common type of construction for larger downtown commercial structures and for multistory apartment and hotel buildings. These were recognized as a collapse hazard following the San Francisco earthquake of 1906, the Santa Barbara earthquake of 1925, and again in the aftermath of the Long Beach earthquake of 1933. These buildings are still the most hazardous buildings in an earthquake. Per Senate Bill 547, local jurisdictions are required to enact structural hazard reduction programs by (a) inventorying pre-1943 unreinforced masonry buildings, and (b) developing mitigation programs to correct the structural hazards.
- **Precast Concrete Tilt-up Buildings.** This building type was introduced following World War II and gained popularity in light industrial buildings during the late 1950s and 1960s. Extensive damage to concrete tilt-up buildings in the 1971 San Fernando earthquake revealed the need for better anchoring of walls to the roof, floor, and foundation elements of the building and for stronger roof diaphragms. In the typical damage to these buildings, the concrete wall panels would fall outward, and the roof would collapse.
- **Soft-Story Buildings.** Soft-story buildings are those in which at least one story, commonly the groundfloor, has significantly less rigidity and/or strength than the rest of the structure. This can form a weak link in the structure unless special design features are incorporated to give the building adequate structural integrity. Typical examples of soft-story construction are buildings with glass curtain walls on the first floor only, or buildings placed on stilts or columns, leaving the first

story open for landscaping, street-friendly building entry, parking, or other purposes. In the early 1950s to early 1970s, soft-story buildings were a popular construction style for low- and midrise concrete-frame structures.

- **Nonductile Concrete-Frame Buildings.** The brittle behavior of nonductile concrete-frame buildings can create major damage and even collapse under strong ground shaking. This type of construction, which generally lacks masonry shear walls, was common in the very early days on reinforced concrete buildings, and they continued to be built until the codes were changed to require ductility in the moment-resisting frame in 1973. There were large numbers of these buildings built for commercial and light industrial use in California's older, densely populated cities. Although many of these buildings have four to eight stories, there are many in the lower height range. This category also includes one-story parking garages with heavy concrete roof systems supported by nonductile concrete columns.

Paleontological Resources

Paleontological resources are the fossilized remains of organisms from prehistoric environments found in geologic strata. These are valued for the information they yield about the history of the earth and its past ecological settings. There are two types of resources: vertebrate and invertebrate. These resources are found in geologic strata conducive to their preservation, typically sedimentary formations. Paleontological sites are areas that show evidence of prehuman activity. Often, they are simply small outcroppings visible on the surface or sites encountered during grading. While the sites are important indications, it is the geologic formations that are the most important since they may contain important fossils. Potentially sensitive areas for the presence of paleontological resources are based on the underlying geologic formation.

Rio Vista is in the Sacramento–San Joaquin Delta region, which forms part of the middle-north portion of the Great Valley Geomorphic Province of California. The area is bounded by the Coast Ranges Geomorphic Province to the west and the Sierra Nevada Geomorphic Province to the east (CGS 2002). Geologic units that have been found in the city are primarily made of Pliocene and/or Pleistocene sandstone, shale, and gravel deposits; mostly loosely consolidated, lying further inland in the city. Older alluvium, lake, playa, and terrace deposits are present near downtown, characterized by unconsolidated and semi-consolidated sediments. These deposits are predominantly nonmarine (CGS 2024). Therefore, paleontological resources could be discovered during ground-disturbance activities within the Planning Area.

Mineral Resources

Mineral resources are naturally occurring chemicals, elements, or compounds formed by inorganic processes or organic substances. These resources include bituminous rock, gold, sand, gravel, clay, crushed stone, limestone, diatomite, salt, borate, potash, geothermal, petroleum, and natural gas resources. Construction aggregate, another mineral resource, refers to sand and gravel (natural aggregates) and crushed stone (rock) that are used as Portland cement-concrete (PCC) aggregate, asphaltic-concrete aggregate, road base, railroad ballast, riprap, fill, and the production of other construction materials.

The Planning Area is classified as MRZ-1 and MRZ-4. MRZ-1 refers to areas where there is sufficient information indicating no significant mineral deposits or where there is a low likelihood of their presence and MRZ-4 refers to areas where the available information is insufficient for assignment to any other MRZ zone (CGS 2018).

The alluvial depositions of sand and gravel along the historic course of the Sacramento River represent an important resource. Historically, mining of sand and aggregate has occurred on lands north of Airport Road and on Decker Island south of Rio Vista in the Sacramento River. Property owned by the State Department of Water Resources adjacent to Airport Road and south of the City's Northwest Wastewater Treatment Plant were mined from the 1980s through the early 2000s and since that time riparian vegetation has become established. This area now approximates young riparian forest and demonstrates that after completion of mining operations, land can be restored for use in various ways, including the establishment of naturalized landscapes. Sand and gravel mining currently occurs on land immediately northeast of the city limits.

Rio Vista Gas Field

The Rio Vista Gas Field was discovered in 1936, and it has produced over 3.6 trillion cubic feet of gas in its lifetime. Spanning parts of three counties and covering over 29,000 acres, it is the largest natural gas field in California, and 1 of the 15 largest in the United States (Hector 2014).

Natural gas activities in the vicinity of Rio Vista include drilling and construction of new wells, gas well production, and transport. Natural gas wells are drilled exclusively for natural gas and contain little or no oil. They include active wells, idle wells, plugged wells, and canceled wells. The life span of a well is based on the active years the well is in production. The average production life of a gas well is 20 to 30 years, though some can produce for up to 50 years.

The California Department of Conservation (DOC) is responsible for regulating oil and gas drilling in California. DOC requires well operators to submit regular monitoring reports to ensure that their wells are operating safely and in an environmentally sound manner. The DOC's Geologic Energy Management Division (CalGEM) has jurisdiction over more than 242,000 wells throughout the state, including nearly 101,300 defined as active or idle oil producers.

The DOC also requires operators to submit a WellSTAR report for each well. WellSTAR is CalGEM's Well Statewide Tracking and Reporting System, which is a comprehensive electronic database. The WellSTAR report is used by the DOC to track the status of each well and to ensure that operators are complying with regulations.

A review of natural gas wells provided by CalGEM's WellSTAR database indicates 55 natural gas wells in Rio Vista. Of these 55 natural gas wells, 1 is active, 21 are idle, and 33 are plugged. The one active well (well number 2-11) is operated by Concordia Resources, Inc. and in the northern portion of the city, adjacent to residential properties along Hearth Lane.

There are several active wells outside city limits but near residential properties in Rio Vista. Immediately west of Rio Vista Highway and Goose Pond Drive is an active well (well number 13) operated by the California Resources Production Corporation. This well is within 500 feet of residential properties. Southwest of city limits, there are seven active wells (well numbers 3, 4, 6, 7, 8, 126, and 140) also operated by the California Resources Production Corporation. These wells are within approximately 2,500 feet of residential properties in the city limits (along Chardonnay Way and Bordeaux Way).

5.7.2 Thresholds of Significance

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:

GEO-1 Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault. (Refer to Division of Mines and Geology Special Publication 42.)

ii) Strong seismic ground shaking.

iii) Seismic-related ground failure, including liquefaction.

iv) Landslides.

GEO-2 Result in substantial soil erosion or the loss of topsoil.

GEO-3 Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.

GEO-4 Be located on expansive soil, as defined in Table 18-1B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property.

GEO-5 Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

GEO-6 Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

MIN-1 Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.

MIN-2 Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

5.7.3 Proposed General Plan Goals and Policies

The following goals and policies from the proposed General Plan Update are applicable to geologic, soil, and mineral resources.

Open Space and Conservation Element

- **Goal OSC-1:** To preserve, protect and enhance natural resources in Rio Vista and the surrounding area, and to promote responsible management practices.
  - **Policy OSC-4:** Protect open space areas of natural resource and scenic value, including wetlands, riparian corridors, floodplains, woodlands, and hillsides.

- **Policy OSC-5:** Encourage landowners and developers to preserve the integrity of existing terrain and natural vegetation in environmentally-sensitive areas, such as drainage corridors, native riparian habitats, wetlands, and prominent hilltops.
- **Policy OSC-10:** For projects that include natural gas wells, reserve areas and abutting easements, require a phased development plan that includes a management plan for these areas and visual screening of the perimeter landscaping to be installed with project construction. Also, the City shall require a plan for ultimate improvement of the area as either urban development or public lands (not as City park land). Lands constrained by natural gas wells, facilities or rights shall not be credited as City park land.

Safety Element

- **Goal SE-1:** To avoid loss of life and minimize damage to property from natural and human-caused hazards.
  - **Policy SE-4:** Ensure City infrastructure in 100-year, 200-year, and 500-year floodplains conform to existing 100-year and 200-year floodplain elevation standards and can adapt to increased flooding.
  - **Policy SE-5:** Site critical and lifeline facilities, including police and fire stations, hazardous material storage facilities, bridges, and large public assembly halls, outside of hazardous, including flood hazard zones, sea level rise hazard areas, seismic and geologic hazard areas, and adjacent to hazardous materials facilities.
  - **Policy SE-9:** When reviewing any entitlements for residential uses on lands that contain natural gas wells or facilities, require a well/facility maintenance plan and a detailed safety plan that includes emergency response procedures**.**

5.7.4 Environmental Impacts

Impact 5.7-1: The proposed project could directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: (i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault; (ii) Strong seismic ground shaking; (iii) Seismic-related ground failure, including liquefaction; or (iv) Landslides, mudslides, or other similar hazards. [Thresholds GEO-1i, GEO-1ii, GEO-1iii, and GEO-1iv]

Seismic Hazards

Rio Vista's location and underlying geology make it susceptible to seismic and geologic hazards, including surface (fault) rupture and seismic ground shaking.

Faults and Ground Shaking

Earthquake risk is high in Rio Vista, due to the presence of several active faults in both the San Francisco Bay Area and Delta regions. Rio Vista lies near several well-defined and active faults that can produce earthquakes of different magnitudes, all of which can affect the structural stability of buildings.

Figure 5.7-1 shows the locations of regional faults, including the Midland-Fault Zone and Rio Vista Fault. The Midland-Fault Zone is approximately 0.3 miles northeast outside the city limits, while the Rio Vista Fault is south of the city, just south of Downtown Rio Vista. There are also no Alquist-Priolo Fault hazard zones in the city; the closest one is 24 miles west of the city (CGS 2022). Other faults inside and outside of Solano County, such as the San Andreas, Concord, Green Valley, and Hayward Faults, may also be capable of generating significant earthquakes with damaging effects in the city. A major earthquake along any of these faults could result in substantial casualties and damage resulting from collapsed buildings, damaged roads and bridges, fires, flooding, and other threats to life and property. Several older buildings, as well as older infrastructure in the downtown area, would be susceptible to earthquake damage. Therefore, Rio Vista is vulnerable to seismic-related earthquake fault rupture and shaking although no noticeable local damage has been experienced over the years.

The proposed project would facilitate new development in the City of Rio Vista, which could result in the exposure of new residents and employees to ground shaking associated with earthquakes. The Seismic Hazards Mapping Act requires projects for human occupancy that are within mapped fault zones to obtain a site-specific

geotechnical report prior to the issuance of individual grading permits, and each new development would be required to retain a licensed geotechnical engineer to design new structures to withstand probable seismically induced ground shaking.

Furthermore, the construction of new development would be required to comply with the seismic design criteria contained in the CBC, which is implemented by Chapter 15.04 of the City's Municipal Code. The CBC requires that all improvements be constructed to withstand anticipated ground shaking from regional fault sources. The CBC standards require all new developments to be designed consistent with a site-specific, design-level geotechnical report, which would be fully compliant with the seismic recommendations of a California-registered professional geotechnical engineer. The design of structures in accordance with the CBC is expected to minimize the effects of ground shaking to the greatest degree feasible.

Compliance with these criteria would ensure that buildings are constructed to withstand seismic ground shaking. Proposed General Plan Policy SE-5 would require that critical and lifeline facilities are located outside of hazardous areas, including geologic hazard zones. Through the Solano County MJHMP, the City is developing an unreinforced masonry grant program to correct problems, such as bracing chimneys, on residential building and nonresidential buildings (Solano County 2022). Ordinance 17.44.050 of the City's Municipal Code sets development standards for development within geological hazard areas or liquefaction hazard areas identified in the General Plan, in which the City's geotechnical staff will review and provide recommendation. Additionally, all recommendations contained in geotechnical and geohazard reports are subject to the approval of the City. The proposed General Plan Update policies, in combination with the CBC, would reduce potential ground-shaking impacts to a less-than-significant level.

Secondary Effects

Liquefaction

Research and historical data indicate that loose, granular materials at depths of less than 50 feet with silt and clay contents of less than 30 percent saturated by a relatively shallow groundwater table are most susceptible to liquefaction. Liquefaction is expected within the city. As shown in Figure 5.7-2, several areas of the city are susceptible to liquefaction hazards. This includes portions of the northern and eastern areas of the city and areas of the city along the Sacramento River. Therefore, future development under the proposed project could introduce new development throughout the City of Rio Vista, which has the potential to be subject to liquefaction hazards. However, the proposed Safety Element includes policies that address development in areas prone to

liquefaction hazards and help to mitigate the risks posed by liquefaction. For example, Policy SE-5 directs the City to site critical buildings and lifeline facilities outside of seismic and geologic hazard areas. In areas that cannot be avoided, a geotechnical investigation would be required pursuant to CBC.

Regardless, all future development would be required to conform to CBC requirements and standards established to prevent significant damage due to liquefaction during seismic events. In accordance with the CBC, geotechnical investigations for new development and redevelopment would determine on-site geologic conditions and identify appropriate recommendations for earthwork, grading, slopes, foundations, pavements, and other necessary geologic and seismic design considerations. Compliance with the CBC would identify potential for liquefaction hazards on individual development sites and the construction of buildings and infrastructure that ensures structural integrity to withstand liquefaction hazards. All recommendations contained in geotechnical and geohazard reports are subject to the approval of the City. The proposed General Plan Update policies, in combination with the CBC, would reduce potential seismic-related ground failure impacts to a less-than-significant level.

Landslides

Marginally stable slopes (including existing landslides) may be subject to landslides caused by earthquakes. The landslide hazard depends on many factors, including existing slope stability, shaking potential, and presence of existing landslides.

As shown in Figure 5.7-3, there are higher susceptibility areas in the Montezuma Hills and some areas of medium susceptibility along the city's border with the Sacramento River. However, there are some areas with a high landslide susceptibility class in the southwestern portion of the city, east of SR-12. In general, landslide risk in the city is low; however, mapped landslide zones in Rio Vista are mostly found on small slopes throughout the community. Due to the differences in the physical characteristics of slope materials, some superficially similar areas may differ widely in terms of landslide hazard potential. For this reason, site-specific geotechnical analyses are considered essential to the accurate assessment of landslide hazard risk at a given location. Section 17.44.050 of the City's Municipal Code sets development setbacks near fault zones for development within geological hazard areas identified in the General Plan, which would require the City's geotechnical staff to review and provide recommendations for development prior to approval. All recommendations contained in geotechnical and geohazard reports are subject to the approval of the City. The proposed General Plan Update goals and policies, in combination with the CBC, and Grading and Erosion

Control Ordinances of the City's Municipal Code, would ensure that potential slope instability and landslide impacts would be less than significant.

Level of Significance Before Mitigation: Impact 5.7-1 would be less than significant.

Mitigation Measures

No mitigation measures are required.

Impact 5.7-2: Unstable geologic unit or soils conditions, including soil erosion and loss off topsoil, could result from development of the proposed project. [Thresholds GEO-2, GEO-3, and GEO-4]

The proposed project would involve soil disturbance, construction, and operation of developed land uses that could each be subject to unstable soil conditions.

Soil Erosion

Soils are particularly prone to erosion during the grading phase of development, especially during heavy rains. The use of a Stormwater Pollution Prevention Plan (SWPPP), which specifies best management practices for temporary erosion control for sites disturbing one or more acres, would reduce the potential for erosion during construction activities. Standard erosion-control measures would be implemented as part of a SWPPP for proposed projects in the city to minimize the risk of erosion or sedimentation during construction. The SWPPP must include an erosion control plan that prescribes measures, such as phasing, grading, limiting areas of disturbance, designating restricted-entry zones, diverting runoff from disturbed areas, protective measures for sensitive areas, outlet protection, and provisions for revegetation or mulching. For future construction projects that disturb less than one acre of land, project applicants would still be required to implement an effective combination of erosion and sediment-control BMPs. Pursuant to Rio Vista Municipal Code Chapter 13.24, *Grading, Erosion and Sediment Control,* the City requires submittal of a post-construction erosion and sediment control plan for all construction sites and includes site design measures, low-impact development design measures, and hydromodification management. In addition, the Rio Vista Municipal Code Chapter 13.24.010 regulates grading on property within city limits to safeguard life, limb, health, property, and the public welfare, to avoid pollution of watercourses with nutrients, sediments, or other materials generated or caused by surface water runoff, in a manner pursuant to and consistent with the federal Water Pollution Control Act.

Mandatory compliance with existing regulations, including the preparation and submittal of a SWPPP or post-construction erosion and sediment control plan, and a soil engineering evaluation, as well as requirements of the CBC, would reduce impacts to a less-than-significant level.

Expansive Soils

Expansive soils are possible wherever clays and elastic silts may be present. Development on unstable or expansive soils could create substantial risks to life or property and result in adverse impacts. Future development under the proposed project could result in the development in unstable soil or expansive soil conditions.

The City has adopted the latest version of the CBC (2022). The CBC requires that structures be designed to mitigate expansive soils. Methods that could be used to reduce the impact of expansive soils include drainage-control devices to limit water infiltration near foundation, over-excavation and recompacting of engineered fill method, or support of the foundation with piles. Furthermore, the City's Municipal Code Section 16.20.030 states that a tentative map for major subdivisions shall be accompanied by a preliminary soil report. If the report indicates the presence of critically expansive soils or other soil hazards, the final soil report accompanying the final map shall contain a geotechnical investigation of each lot within the subdivision that provide recommendations for addressing the soil conditions during development. This procedure ensures that any soil hazards are investigated and addressed before construction.

The City's grading ordinance mandates that grading activities conform to the City's improvement standards, drainage policies, and the latest edition of public works construction specifications. These standards include best practices for handling expansive soils, such as proper compaction, soil treatment, and moisture control, which are critical for mitigating soil movement. Furthermore, the ordinance requires prior approval of grading activities, which ensures that expansive soils are identified and addressed in the planning stages. The requirement for an erosion and sediment-control plan ensures that measures are in place to control surface runoff, which can saturate expansive soils and exacerbate their swelling potential. By retaining sediment and managing water flow on-site, the ordinance reduces the risk of destabilizing expansive soils.

The adverse effects of expansive soils can be avoided through proper subsoil preparation, drainage, and foundation design. However, to design an adequate foundation, the conditions must be assessed through appropriate soil sampling and laboratory soils testing. Expansive soils are identified through expansion tests of samples of soil or rock. Procedures employed in expansive soils testing are found in the CBC that has been adopted by the City of Rio Vista. These methods, as well as the Grading Ordinance of the City's Municipal Code and requirements of the CBC, would reduce the impact related to expansive soils to less than significant.

Settlement and Collapse

The risk of settlement or collapse has the potential to exist in areas with alluvial soils. Areas of large settlement can damage, or in extreme cases, destroy, structures. The presence of compressible soil in the city represents a hazard to structures and people.

The CBC requires that structures be designed to mitigate compressible soils. Methods that could be used to reduce the impact of compressible soils include transferring the land to underlying non-compressible layers with piles and over excavation of compressible soil and recompacting with engineered fill. These methods, as well as requirements of the CBC, would reduce the impact of compressible soils to less than significant.

Subsidence

The city is susceptible to subsidence due to overdraft of groundwater aquifers, specifically peat subsidence. Peat subsidence is a type of land subsidence that occurs when peatlands are drained, causing the land surface to gradually lower. The city's water supply comes solely from local groundwater. The City draws its water supply from the Solano subbasin at the southeastern limit of the Sacramento Valley Groundwater Basin.

Because overdraft of groundwater can result in subsidence, groundwater storage by Solano County Water Agency (SCWA), and statutory commitments to sustainable groundwater management practices would reduce the potential for future land subsidence. Furthermore, ongoing surveying of the ground surface by SCWA provides a way to verify that its efforts in preventing subsidence are effective. The SCWA currently has the Solano Groundwater Sustainability Plan in place, which describes current and historical groundwater conditions along with a groundwater monitoring network to ensure the basin will meet its sustainability goals. Additionally, incorporating

recommendations from a project's geotechnical report and implementing requirements of the CBC would reduce the impact of subsidence to less than significant.

Level of Significance Before Mitigation: Impact 5.7-2 would be less than significant.

Mitigation Measures

No mitigation measures are required.

Impact 5.7-3: Development under the proposed project would connect to existing sewer lines or comply with State and local regulations for on-site septic tanks. [Threshold GEO-5].

There are specific areas in the city that septic tanks may be less favorable, such as areas of subsidence, liquefaction, and potential for landslides. In general, all new development in the city must connect to the publicly owned treatment works that treat wastewater. Chapter 13.08 of the City's municipal code establishes requirements for industrial and other nonresidential connection to the publicly owned treatment works, and may require additional fees, pre-treatment of wastewater, and regular monitoring to ensure compliance with the conditions of wastewater discharge. In the unusual event that the City would consider a new septic system, the provisions of Chapter 6.4, *Sewage Standards of the Solano County Code*, would apply.

As no new septic tanks are envisioned as part of the proposed project, and there is a robust sewer ordinance in the Municipal Code that is monitored by the City and the Regional Water Quality Control Board, and the Solano County Code would be followed for any on-site sewer approved, impacts related to sewage are considered less than significant.

Level of Significance Before Mitigation: Impact 5.7-3 would be less than significant.

Mitigation Measures

No mitigation measures are required.

Impact 5.7-4: Development under the proposed project could directly or indirectly destroy a unique paleontological resource or unique geologic feature. [Threshold GEO-6]

Paleontological resources are recognized as nonrenewable and therefore receive protection under the California PRC and CEQA. Adoption of the proposed project would not directly affect paleontological resources. Long-term implementation of the proposed

General Plan Update land use plan could allow development (e.g., new development, infill development, redevelopment, and revitalization/restoration), including grading, of known and unknown sensitive areas. Grading and construction activities of undeveloped areas or redevelopment that requires more intensive soil excavation than in the past could potentially disturb paleontological resources. Therefore, future development that would be accommodated by the proposed project could potentially unearth previously unrecorded resources. Review and protection of paleontological resources are also afforded by CEQA for individual development projects that would be accommodated by the proposed General Plan Update, subject to discretionary actions that are implemented in accordance with the land use plan of the proposed project.

Under the California PRC, paleontological resources are recognized as nonrenewable resources and receive protection. Long-term implementation of the proposed General Plan Update could allow development, including grading, in portions of the city with sensitivity to paleontological resources. Grading and construction activities of undeveloped areas or redevelopment that requires more intensive soil excavation than in the past could potentially cause the disturbance of paleontological resources. Therefore, future development could potentially unearth previously unknown/unrecorded paleontological resources. Implementation of Mitigation Measure GEO-1, which requires an evaluation from a Certified Paleontologist, would reduce impacts to paleontological resources. Therefore, impacts would be less than significant with mitigation incorporated.

Level of Significance Before Mitigation: Impact 5.7-4 would be potentially significant.

Mitigation Measures

GEO-1 Prior to issuance of a grading permit for previously undisturbed areas, the project applicant shall retain a Certified Paleontologist to assess the potential for presence of paleontological resources and the potential for project construction to affect such resources if present. If it is determined, to the satisfaction of the City, that there is low potential for discovery or disturbance of paleontological resources, no further action shall be required.

If potential for discovery is deemed moderate to high, the project applicant shall retain a Certified Paleontologist to monitor all initial ground-disturbing activities in native soils or sediments. If the paleontologist, upon observing initial earthwork, determines there is low potential for discovery, no further

action shall be required, and the paleontologist shall submit a memo to the City confirming findings of low potential.

Should any paleontological resources (i.e., fossils) be uncovered during project construction activities, all work within a 100-foot radius of the discovery site shall be halted or diverted to other areas on the site and the City shall be immediately notified. A Certified Paleontologist shall evaluate the finds and recommend appropriate next steps to ensure that the resource is not substantially adversely impacted, including, but not limited to, avoidance, preservation in place, excavation, documentation, curation, data recovery, or other appropriate measures.

Further ground disturbance shall not resume within a 100-foot radius of the discovery site until an agreement has been reached between the project applicant, a Certified Paleontologist, and the City as to the appropriate preservation or mitigation measures to ensure that the resource is not substantially adversely impacted.

Salvage and collection of significant fossils shall be done in accordance with the Society of Vertebrate Paleontology guidelines. Any paleontological resources salvaged shall be provided for curation at a local curation facility, or any other local museum or repository willing and able to accept and house the resource to preserve for future scientific study.

Level of Significance After Mitigation: Impact 5.7-4 would be less than significant.

Impact 5.7-5: The proposed project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state or result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. [Thresholds M-1 and M-2]

Mineral Resources

Future development allowed under the proposed project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state. The City of Rio Vista is designated as MRZ-1, which is an area where adequate information indicates that no significant mineral deposits are present and MRZ-4, which is an area where available information is inadequate for assignment

to any other MRZ (CGS 2018). Therefore, the city does not have any identifiable significant mineral deposits.

However, the alluvial depositions of sand and gravel along the historic course of the Sacramento River represent an important mineral resource. Historically, mining of sand and aggregate has occurred on lands north of Airport Road and Decker Island south of Rio Vista in the Sacramento River. Property owned by the California Department of Water Resources has been mined since the 1980s and mining operations continue to the north of the Rio Vista city limits. Areas close to Airport Road and south of the city's Northwest Wastewater Treatment Plant were mined in the early 2000s and since that time, riparian vegetation has become established.

Although future projects would not occur within these mining areas while mining operations are in effect, development that is proximate or adjacent to the mine may expose residents to dust from mining and/or transporting sand and gravel products. Dust from sand and gravel mining can include airborne particulate matter such as silica and dust. However, all future development would comply with the Air Quality Management District Rule 403, which requires dust control for earth-moving activities and would reduce potential impacts on workers and residents. For these reasons, potential mineral resource impacts would be less than significant.

Natural Gas Resources

Natural gas well reserve sites are found both within the city and on surrounding unincorporated lands. The City of Rio Vista is part of the Rio Vista Oil Field and is estimated to have 55 natural gas wells. Of these 55 natural gas wells, 1 is active, 21 are idle, and 33 are plugged. Municipal Code Chapter 13.12, *Natural Gas*, regulates natural gas operations and establishes requirements for a natural gas permit to drill or operate natural gas wells in the city. State law establishes the minimum setback of urban land uses from active natural gas wells and the City requires appropriate setbacks when reviewing development projects.

Furthermore, Municipal Code Chapter 17.64.010 ensures that all surface development pursuant to the underlying zoning designations takes place in an orderly manner that is compatible with continued or future economic, efficient, and safe production of natural gas. Surface development projects on property with mineral rights must meet either the use permit conditions or the planned unit development permit conditions, which would ensure that impacts related to locally important mineral recovery sites are less than significant.

Level of Significance Before Mitigation: Impact 5.7-5 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.7.5 Cumulative Impacts

Geology, Soils, and Paleontological Resources

The geographic context for the analysis of impacts resulting from geologic hazards generally is site specific rather than cumulative in nature, because each project site has a different set of geologic considerations that would be subject to uniform site development and construction standards and unique standards depending on the outcome of a project-specific geotechnical study. Therefore, the potential for cumulative impacts is limited.

Future development and redevelopment pursuant to the proposed project and other development projects in the surrounding area would involve grading and excavation activities on individual sites, which would result in changes to the area's existing topography. Future hillside development may require cut and fill, manufactured slopes, and changes to the natural topography. Compliance with the CBC and the recommendations of individual geotechnical investigations would reduce geologic hazards to new development.

Earthquake faults in the city could pose surface rupture hazards to developments proposed over the fault traces. However, compliance with the CBC, which is implemented by Chapter 15.04 of the City's Municipal Code, would minimize surface rupture hazards to new development and redevelopment in and near the city. The CBC requires that all improvements be constructed to withstand anticipated ground shaking from regional fault sources. The CBC standards require all new developments to be designed consistent with a site-specific, design-level geotechnical report, which would be fully compliant with the seismic recommendations of a California-registered professional geotechnical engineer. The design of structures in accordance with the CBC is expected to minimize the effects of ground shaking to the greatest degree feasible.

Ground-shaking hazards due to regional earthquake events could lead to the damage of buildings, parking lots, and utility lines and subsequent fires, falling objects, and other structural hazards that could cause property damage and personal injuries. These ground-shaking hazards are not unlike the potential hazards in other areas of the

region. Depending on the magnitude of the earthquake, distance to the development site, underlying soil conditions, and strength of structures and infrastructure, ground-shaking hazards may be significant. Future development and redevelopment in the city would be designed and built in accordance with applicable standards in the CBC, including pertinent seismic design criteria. Existing buildings to be reused would be rehabilitated in accordance with the CBC and local building regulations. This would allow structures to withstand ground shaking and to maintain hazards at acceptable levels.

Site-specific geologic hazards would be addressed by the geotechnical investigation required by the City for each development proposal. This investigation would identify the geologic and seismic characteristics on a site and provide guidelines for engineering design and construction to ensure the structural integrity of proposed development. Compliance of individual projects with the recommendations of the geotechnical investigation would prevent hazards associated with unstable soils, landslide potential, lateral spreading, liquefaction, soil collapse, expansive soil, soil erosion, and other geologic issues. No cumulative adverse impacts are expected.

Future development in the city may use septic tanks or alternative wastewater disposal systems in areas without sewer service. Compliance with the Regional Water Quality Control Board regulations, and Section 13.08.253 of the Rio Vista Municipal Code, would prevent hazards associated with soils incapable of supporting septic systems.

Specific paleontological resources searches in the city were not conducted. Under the California PRC, paleontological resources are recognized as nonrenewable resources and receive protection. All future development in the city would be required to implement Mitigation Measure GEO-1, which requires a certified paleontologist to be present when grading in bedrock occurs to further evaluate the fossil resources.

Adherence to relevant plans, codes, and regulations with respect to project design and construction would provide adequate levels of safety in the City of Rio Vista and surrounding areas. Such adherence would ensure that the proposed project would not result in a cumulatively considerable contribution to cumulative impacts related to geologic and soil condition. Therefore, the cumulative impact would be less than significant.

Mineral Resources

The cumulative impact on mineral resources is evaluated based on the potential impacts of past and future development in the City of Rio Vista. The City of Rio Vista is designated as MRZ-1, which is an area where adequate information indicates that no significant mineral deposits are present and MRZ-4, which is an area where available information is inadequate for assignment to any other MRZ Zone (CGS 2018). Therefore, the city does not have any identifiable significant mineral deposits. As future development under the proposed project would occur within the city limits, the proposed project would not contribute to a cumulative loss of mineral resources. Therefore, this impact would be less than cumulatively considerable.

5.7.6 Level of Significance Before Mitigation

After implementing regulatory requirements and standard conditions of approval, the following impacts would be less than significant: 5.7-1, 5.7-2, 5.7-3, and 5.7-5.

Without mitigation, the following impact would be **potentially significant**:

- **Impact 5.7-4** Implementation of the proposed General Plan Update could impact paleontological resources or geologic features due to development.

5.7.7 Mitigation Measures

GEO-1 Prior to issuance of a grading permit, the project applicant shall retain a Certified Paleontologist to assess the potential for presence of paleontological resources and the potential for project construction to affect such resources if present. If it is determined, to the satisfaction of the City, that there is low potential for discovery or disturbance of paleontological resources, no further action shall be required.

If potential for discovery is deemed moderate to high, the project applicant shall retain a Certified Paleontologist to monitor all initial ground-disturbing activities in native soils or sediments. If the paleontologist, upon observing initial earthwork, determines there is low potential for discovery, no further action shall be required, and the paleontologist shall submit a memo to the City confirming findings of low potential.

Should any paleontological resources (i.e., fossils) be uncovered during project construction activities, all work within a 100-foot radius of the discovery site shall be halted or diverted to other areas on the site and the

City shall be immediately notified. A Certified Paleontologist shall evaluate the finds and recommend appropriate next steps to ensure that the resource is not substantially adversely impacted, including, but not limited to, avoidance, preservation in place, excavation, documentation, curation, data recovery, or other appropriate measures.

Further ground disturbance shall not resume within a 100-foot radius of the discovery site until an agreement has been reached between the project applicant, a Certified Paleontologist, and the City as to the appropriate preservation or mitigation measures to ensure that the resource is not substantially adversely impacted.

Salvage and collection of significant fossils shall be done in accordance with the Society of Vertebrate Paleontology guidelines. Any paleontological resources salvaged shall be provided for curation at a local curation facility, or any other local museum or repository willing and able to accept and house the resource to preserve for future scientific study.

5.7.8 Level of Significance After Mitigation

Impact 5.7-4

Mitigation Measure GEO-1 would require a certified paleontologist to be present when grading in bedrock occurs to further evaluate the fossil resources. Therefore, impacts would be less than significant with implementation of this measure.

5.7.9 References

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5.8 GREENHOUSE GAS EMISSIONS

This section of the Draft Environmental Impact Report (EIR) evaluates the potential for the adoption and implementation of the City of Rio Vista General Plan Update (proposed project) to impact greenhouse gas (GHG) emissions in a local and regional context. Because no single project is large enough to result in a measurable increase in global concentrations of GHG, climate change impacts of a project are considered on a cumulative basis based on the GHG emissions reduction goals identified in the California Air Resources Board's (CARB's) 2022 Scoping Plan. GHG emissions modeling is based on the emissions inventory and forecast included in Appendix 5.3-1, *Air Quality and Greenhouse Gas Emissions Assessment*, of this Draft EIR.

5.8.1 Environmental Setting

5.8.1.1 TERMINOLOGY

The following are definitions for terms used throughout this section.

- **Greenhouse gases (GHG).** Gases in the atmosphere that absorb infrared light, thereby retaining heat in the atmosphere and contributing to a greenhouse effect.
- **Global warming potential (GWP).** Metric used to describe how much heat a molecule of a GHG absorbs relative to a molecule of carbon dioxide (CO_2) over a given period of time (20, 100, and 500 years). CO_2 has a GWP of 1.
- **Carbon dioxide-equivalent (CO_2e).** The standard unit to measure the amount of GHGs in terms of the amount of CO_2 that would cause the same amount of warming. CO_2e is based on the GWP ratios between the various GHGs relative to CO_2.
- **$MTCO_2e$.** Metric ton of CO_2e.
- **$MMTCO_2e$.** Million metric tons of CO_2e.

5.8.1.2 GREENHOUSE GASES AND CLIMATE CHANGE

Scientists have concluded that human activities are contributing to global climate change by adding large amounts of heat-trapping gases, known as GHGs, to the atmosphere. The primary source of these GHGs is fossil fuel use. The Intergovernmental Panel on Climate Change (IPCC) has identified four major GHGs—water vapor, carbon dioxide (CO_2), methane (CH_4), and ozone (O_3)—that are the likely cause of an increase in global average temperatures observed in the twentieth and twenty-first centuries. Other GHGs identified by the IPCC that contributes to global warming to a lesser extent are nitrous

oxide (N_2O), sulfur hexafluoride (SF_6), hydrofluorocarbons, perfluorocarbons, and chlorofluorocarbons (IPCC 2001).[1,2]

Some of the major GHGs that are applicable to the proposed project are described below.

- **Carbon dioxide (CO_2)** enters the atmosphere through the burning of fossil fuels (i.e., oil, natural gas, and coal), solid waste, trees and wood products, and respiration, and as a result of other chemical reactions (e.g., manufacture of cement). Carbon dioxide is removed from the atmosphere (i.e., sequestered) when it is absorbed by plants as part of the biological carbon cycle.
- **Methane (CH_4)** is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and from the decay of organic waste in landfills and water treatment facilities.
- **Nitrous oxide (N_2O)** is emitted during agricultural and industrial activities as well as during the combustion of fossil fuels and solid waste.

GHGs are dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. Some GHGs have stronger greenhouse effects than others. These are referred to as high GWP gases. The GWP of GHG emissions are shown in Table 5.8-1, *GHG Emissions and Their Relative Global Warming Potential Compared to CO_2.* The GWP is used to convert GHGs to CO_2-equivalence (CO_2e) to show the relative potential that different GHGs have to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. For example, under the IPCC Fifth Assessment Report (AR5) GWP values for CH_4, 10 MT of CH_4 would be equivalent to 280 MT of CO_2.

1 Water vapor (H_2O) is the strongest GHG and the most variable in its phases (vapor, cloud droplets, ice crystals); however, water vapor is not considered a pollutant because it is considered part of the feedback loop rather than a primary cause of change.

2 Black carbon contributes to climate change both directly, by absorbing sunlight, and indirectly, by depositing on snow (making it melt faster) and by interacting with clouds and affecting cloud formation. Black carbon is the most strongly light-absorbing component of particulate matter (PM) emitted from burning fuels such as coal, diesel, and biomass. The share of black carbon emissions from transportation is dropping rapidly and is expected to continue to do so between now and 2030 as a result of California's air quality programs. The remaining black carbon emissions will come largely from woodstoves/fireplaces, off-road applications, and industrial/commercial combustion (CARB 2022a). However, State and national GHG inventories do not include black carbon due to ongoing work resolving the precise global warming potential of black carbon. Guidance for CEQA documents does not yet include black carbon.

Table 5.8-1 GHG Emissions and Their Relative Global Warming Potential Compared to CO_2

GHGs	Fourth Assessment Report Global Warming Potential Relative to CO_2[1]	Fifth Assessment Report Global Warming Potential Relative to CO_2[1]	Sixth Assessment Report Global Warming Potential Relative to CO_2[1]
Carbon Dioxide (CO_2)	1	1	1
Methane (CH_4)[2]	25	28	30
Nitrous Oxide (N_2O)	298	265	273

Source: IPCC 2007, 2013, and 2022.

Notes: The IPCC published updated GWP values in its Sixth Assessment Report (AR6) that reflect new information on atmospheric lifetimes of GHGs and an improved calculation of the radiative forcing of CO_2. However, GWP values identified in AR5 are used by the 2022 Scoping Plan for long-term emissions forecasting. Therefore, this analysis utilizes AR5 GWP values consistent with the current Scoping Plan.

1 Based on 100-year time horizon of the GWP of the air pollutant compared to CO_2.

2 The methane GWP includes direct effects and indirect effects due to the production of tropospheric ozone and stratospheric water vapor. The indirect effect due to the production of CO_2 is not included.

Human Influence on Climate Change

For approximately 1,000 years before the Industrial Revolution, the amount of GHGs in the atmosphere remained relatively constant. During the twentieth century, scientists observed a rapid change in the climate and the quantity of climate change pollutants in the Earth's atmosphere that is attributable to human activities.

The recent IPCC Sixth Assessment Report (AR6) summarizes the latest scientific consensus on climate change. It finds that atmospheric concentrations of CO_2 have increased by 50 percent since the Industrial Revolution and continue to increase at a rate of two parts per million each year. By the 2030s, and no later than 2040, the world will exceed 1.5 degrees Celsius (°C) warming (CARB 2022b). These recent changes in the quantity and concentration of climate change pollutants far exceed the extremes of the ice ages, and the global mean temperature is warming at a rate that cannot be explained by natural causes alone. Human activities are directly altering the chemical composition of the atmosphere through the buildup of climate change pollutants (CAT 2006). In the past, gradual changes in the Earth's temperature changed the distribution of species, availability of water, and other conditions. Human activities are accelerating this process so that environmental impacts associated with climate change no longer occur in a geologic time frame but within a human lifetime (IPCC 2007).

Like the variability in the projections of the expected increase in global surface temperatures, the environmental consequences of gradual changes in the Earth's temperature are hard to predict. Projections of climate change depend heavily on future human activity. Therefore, climate models are based on different emission scenarios that account for historical trends in emissions and on observations of the climate record that

assess the human influence of the trend and projections for extreme weather events. Climate-change scenarios are affected by varying degrees of uncertainty. For example, there are varying degrees of certainty on the magnitude of the trends for:

- Warmer and fewer cold days and nights over most land areas.
- Warmer and more frequent hot days and nights over most land areas.
- An increase in the frequency of warm spells and heat waves over most land areas.
- An increase in frequency of heavy precipitation events (or proportion of total rainfall from heavy falls) over most areas.
- Larger areas affected by drought.
- Intense tropical cyclone activity increases.
- Increased incidence of extreme high sea level (excluding tsunamis).

Potential Climate Change Impacts in California

There is at least a greater than 50 percent likelihood that global warming will reach or exceed 1.5°C in the near-term, even for the very low GHG emissions scenario (IPCC 2022). Climate change is already impacting California and will continue to affect it for the foreseeable future. For example, the average temperature in most areas of California is already 1 degrees Fahrenheit (°F) higher than historical levels, and some areas have seen average increases in excess of 2°F (CalOES 2020). The California Fourth Climate Change Assessment identifies the following climate change impacts under a business-as-usual (BAU) scenario, in which no new actions are taken to curb GHG emissions:

- Annual average daily high temperatures in California are expected to rise by 2.7°F by 2040, 5.8°F by 2070, and 8.8°F by 2100 compared to observed and modeled historical conditions. These changes are statewide averages. Heat waves are projected to become longer, more intense, and more frequent.
- Warming temperatures are expected to increase soil moisture loss and lead to drier seasonal conditions. Summer dryness may become prolonged, with soil drying beginning earlier in the spring and lasting longer into the fall and winter rainy season.
- High heat increases the risk of death from cardiovascular, respiratory, cerebrovascular, and other diseases.
- Droughts are likely to become more frequent and persistent through 2100.[3]

3 Overall, California has become drier over time, with five of the eight years of severe to extreme drought occurring between 2007 and 2016, and with unprecedented dry years in 2014 and 2015 (OEHHA 2018). Statewide precipitation has become increasingly variable from year to year, with the driest consecutive four years occurring from 2012 to 2015 (OEHHA 2018).

- Climate change is projected to increase the strength of the most intense precipitation and storm events affecting California.
- Mountain ranges in California are already seeing a reduction in the percentage of precipitation falling as snow. Snowpack levels are projected to decline significantly by 2100 due to reduced snowfall and faster snowmelt. California's water storage system is designed with the expectation that snow will stay frozen for many months, and that as it melts, it will be stored in a series of reservoirs and dams, many of which are used to generate electricity. Changing waterfall patterns therefore impact both water supply and electricity supply.
- Marine layer clouds are projected to decrease, though more research is needed to better understand their sensitivity to climate change.
- Extreme wildfires (i.e., fires larger than 10,000 hectares or 24,710 acres) are expected to occur 50 percent more frequently. The maximum area burned statewide may increase 178 percent by the end of the century. Drought and reduced water supplies can increase wildfire risk.
- Exposure to wildfire smoke is linked to increased incidence of respiratory illness.
- Sea-level rise is expected to continue to increase erosion of beaches, cliffs, and bluffs (CalOES 2020).

Global climate change risks to California are shown in Table 5.8-2, *Summary of GHG Emissions Risks to California*, and include impacts to public health, water resources, agriculture, coastal sea level, forest and biological resources, and energy demand.

Table 5.8-2 Summary of GHG Emissions Risks to California

Impact Category	Potential Risk
Public Health Impacts	Heat waves will be more frequent, hotter, and longer Fewer extremely cold nights Poor air quality made worse Higher temperatures increase ground-level ozone levels Deaths due to extreme heat
Water Resources Impacts	Decreasing Sierra Nevada snowpack Challenges in securing adequate water supply Potential reduction in hydropower Loss of winter recreation
Agricultural Impacts	Increasing temperature Increasing threats from pests and pathogens Expanded ranges of agricultural weeds Declining productivity Irregular blooms and harvests
Coastal Sea Level Impacts	Accelerated sea-level rise Increasing coastal floods Shrinking beaches Worsened impacts on infrastructure
Forest and Biological Resource Impacts	Increased risk and severity of wildfires Lengthening of the wildfire season Movement of forest areas Conversion of forest to grassland Declining forest productivity Increasing threats from pests and pathogens Shifting vegetation and species distribution Altered timing of migration and mating habits Loss of sensitive or slow-moving species
Energy Demand Impacts	Potential reduction in hydropower Increased energy demand

Sources: CEC 2006, 2009; CCCC 2012; CNRA 2014; CalEOS 2020.

5.8.1.3 REGULATORY BACKGROUND

Federal

The U.S. Environmental Protection Agency (USEPA) announced on December 7, 2009, that GHG emissions threaten the public health and welfare of the American people and that GHG emissions from on-road vehicles contribute to that threat. The USEPA's final findings respond to the 2007 U.S. Supreme Court decision that GHG emissions fit within the Clean Air Act definition of air pollutants. The findings do not impose any emission

reduction requirements but allowed the USEPA to finalize the GHG standards proposed in 2009 for new light-duty vehicles as part of the joint rulemaking with the Department of Transportation (USEPA 2009).

To regulate GHGs from passenger vehicles, the USEPA was required to issue an endangerment finding (USEPA 2023). The finding identified emissions of six key GHGs—CO_2, CH_4, N_2O, hydrofluorocarbons, perfluorocarbons, and SF_6—that have been the subject of scrutiny and intense analysis for decades by scientists in the United States and around the world. The first three are applicable to the proposed project's GHG emissions inventory because they constitute the majority of GHG emissions and, according to guidance by the Bay Area Air District (Air District, formerly BAAQMD), are the GHG emissions that should be evaluated as part of a project's GHG emissions inventory.

US Mandatory Report Rule for GHGs (2009)

In response to the endangerment finding, the USEPA issued the Mandatory Reporting of GHG Rule that requires substantial emitters of GHG emissions (e.g., large stationary sources) to report GHG emissions data. Facilities that emit 25,000 MT or more of CO_2e per year are required to submit an annual report.

Update to Corporate Average Fuel Economy Standards (2017 to 2026)

The federal government issued new Corporate Average Fuel Economy (CAFE) standards in 2012 for vehicle model years 2017 to 2025, requiring a fleet average of 54.5 miles per gallon (MPG) in 2025. However, on March 30, 2020, the USEPA finalized updated CAFE and GHG emissions standards for passenger cars and light trucks, covering model years 2021 through 2026, known as the Safer Affordable Fuel Efficient (SAFE) Vehicles Final Rule for Model Years 2021 to 2026. Under SAFE, the fuel economy standards will increase 1.5 percent per year compared to the 5 percent per year under the CAFE standards established in 2012. Overall, SAFE requires a fleet average of 40.4 MPG for model year 2026 vehicles (85 Federal Register 24174, April 30, 2020).

On December 21, 2021, under the direction of Executive Order (EO) 13990 issued by President Biden, the National Highway Traffic Safety Administration (NHTSA) repealed SAFE Vehicles Rule Part One, which had preempted state and local laws related to fuel economy standards. In addition, the NHTSA announced new proposed fuel standards on March 31, 2022. Fuel efficiency under the new standards proposed will increase 8 percent annually for model years 2024 to 2025 and 10 percent for model year 2026. Overall, the new CAFE standards require a fleet average of 49 MPG for passenger vehicles and light

trucks for model year 2026, which would be a 10 MPG increase relative to model year 2021 (NHTSA 2022).

State

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in Executive Order (EO) S-03-05, EO B-30-15, EO B-55-18, Assembly Bill (AB) 32, AB 1279, Senate Bill (SB) 32, and SB 375.

Executive Order S-03-05

EO S-03-05 was signed June 1, 2005, and set the following GHG reduction targets for the State:

- 2000 levels by 2010
- 1990 levels by 2020
- 80 percent below 1990 levels by 2050

Assembly Bill 32, the Global Warming Solutions Act (2006)

AB 32 was passed by the California State legislature on August 31, 2006, to place the state on a course toward reducing its contribution of GHG emissions. AB 32 follows the 2020 tier of emissions reduction targets established in EO S-03-05. CARB prepared the 2008 Scoping Plan to outline a plan to achieve the GHG emissions-reduction targets of AB 32.

Executive Order B-30-15

EO B-30-15, signed April 29, 2015, set a goal of reducing GHG emissions in the state to 40 percent of 1990 levels by year 2030. EO B-30-15 also directed CARB to update the Scoping Plan to quantify the 2030 GHG reduction goal for the State and requires State agencies to implement measures to meet the interim 2030 goal as well as the long-term goal for 2050 in EO S-03-05. It also requires the Natural Resources Agency to conduct triennial updates of the California adaptation strategy, *Safeguarding California*, to ensure climate change is accounted for in State planning and investment decisions.

Senate Bill 32 and Assembly Bill 197

In September 2016, Governor Brown signed SB 32 and AB 197 into law, making the EO goal for year 2030 into a statewide mandated legislative target. AB 197 established a joint legislative committee on climate change policies and requires CARB to prioritize direct

emissions reductions rather than the market-based cap-and-trade program for large stationary, mobile, and other sources.

Executive Order B-55-18

EO B-55-18, signed September 10, 2018, sets a goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." EO B-55-18 directs CARB to work with relevant State agencies to ensure future scoping plans identify and recommend measures to achieve the carbon neutrality goal. The goal of carbon neutrality by 2045 is in addition to other State goals, meaning not only should emissions be reduced to 80 percent below 1990 levels by 2050, but that, by no later than 2045, the remaining emissions be offset by equivalent net removals of CO_2e from the atmosphere, including through sequestration in forests, soils, and other natural landscapes.

Assembly Bill 1279

AB 1279, signed by Governor Newsom in September 2022, codifies the carbon neutrality targets of EO B-55-18 for year 2045 and sets a new legislative target for year 2045 of 85 percent below 1990 levels for anthropogenic (human-caused) GHG emissions. CARB was required to update the Scoping Plan to identify and recommend measures to achieve the net-zero and GHG emissions-reduction goals.

2022 Climate Change Scoping Plan

CARB adopted the *2022 Scoping Plan for Achieving Carbon Neutrality* (2022 Scoping Plan) on December 15, 2022, which lays out a path to achieve carbon neutrality by 2045 or earlier and to reduce the state's anthropogenic GHG emissions (CARB 2022b). The Scoping Plan was updated to address the carbon neutrality goals of EO B-55-18 and the ambitious GHG reduction target as directed by AB 1279. Previous scoping plans focused on specific GHG reduction targets for industrial, energy, and transportation sectors—to meet 1990 levels by 2020, and then the more aggressive 40 percent below that for the 2030 target. The Scoping Plan expands on earlier scoping plans with a target of reducing anthropogenic emissions to 85 percent below 1990 levels by 2045. Carbon neutrality takes it one step further by expanding actions to capture and store carbon, including through natural and working lands and mechanical technologies, while drastically reducing anthropogenic sources of carbon pollution at the same time.

The path forward was informed by the recent IPCC AR6; the measures would achieve 85 percent below 1990 levels by 2045 in accordance AB 1279. CARB's 2022 Scoping Plan identifies strategies as shown in Table 5.8-3, *Priority Strategies for Local Government*

Climate Action Plans, that would be most impactful at the local level for ensuring substantial process towards the State's carbon neutrality goals.

Table 5.8-3 Priority Strategies for Local Government Climate Action Plans

Priority Area	Priority Strategies
Transportation Electrification	Convert local government fleets to zero-emission vehicles (ZEV) and provide electric vehicle (EV) charging at public sites.
	Create a jurisdiction-specific ZEV ecosystem to support deployment of ZEVs statewide (such as building standards that exceed State building codes, permit streamlining, infrastructure siting, consumer education, preferential parking policies, and ZEV readiness plans).
Vehicle Miles Traveled (VMT) Reduction	Reduce or eliminate minimum parking standards.
	Implement complete streets policies and investments, consistent with general plan circulation element requirements.
	Increase access to public transit by increasing density of development near transit, improving transit service by increasing service frequency, creating bus priority lanes, reducing or eliminating fares, microtransit, and other approaches.
	Increase public access to clean mobility options by planning for and investing in electric shuttles, bike share, car share, and walking.
	Implement parking pricing or transportation demand management pricing strategies.
	Amend zoning or development codes to enable mixed-use, walkable, transit-oriented, and compact infill development (such as increasing allowable density of the neighborhood).
	Preserve natural and working lands by implementing land use policies that guide development toward infill areas and do not convert "greenfield" land to urban uses (e.g., green belts, strategic conservation easements).
Building Decarbonization	Adopt all-electric new construction reach codes for residential and commercial uses.
	Adopt policies and incentive programs to implement energy efficiency retrofits for existing buildings, such as weatherization, lighting upgrades, and replacing energy-intensive appliances and equipment with more efficient systems (such as Energy Star-rated equipment and equipment controllers).
	Adopt policies and incentive programs to electrify all appliances and equipment in existing buildings such as appliance rebates, existing building reach codes, or time of sale electrification ordinances.
	Facilitate deployment of renewable energy production and distribution and energy storage on privately owned land uses (e.g., permit streamlining, information sharing).
	Deploy renewable energy production and energy storage directly in new public projects and on existing public facilities (e.g., solar photovoltaic systems on rooftops of municipal buildings and on canopies in public parking lots, battery storage systems in municipal buildings).

Source: CARB 2022b.

Residential and mixed-use development projects, including the following key project attributes, would accommodate growth in a manner consistent with State GHG reduction and equity prioritization goals. This is the first approach the State recommends for qualitatively determining whether a proposed residential or mixed-use residential development would align with the State's climate goals while simultaneously advancing fair housing.

Key residential and mixed-use project attributes that reduce GHGs:

- Transportation Electrification
  - Provide EV charging infrastructure that, at a minimum, meets the most ambitious voluntary standards in the California Green Building Standards Code at the time of project approval.
- VMT Reduction
  - Is located on infill sites that are surrounded by existing urban uses and reuses or redevelops previously undeveloped or underutilized land that is presently served by existing utilities and essential public services (e.g., transit, streets, water, and sewer).
  - Does not result in the loss or conversion of the state's natural and working lands.
  - Consists of transit-supportive densities (minimum of 20 residential dwelling units/acre) or is in proximity to existing transit stops (within a half mile) or satisfies more detailed and stringent criteria specified in the region's Sustainable Communities Strategy (SCS).
  - Reduces parking requirements by:
    - Eliminating parking requirements or including maximum allowable parking ratios (i.e., the ratio of parking spaces to residential units or square feet);
    - Providing residential parking supply at a ratio of <1 parking space per dwelling unit; or
    - For multifamily residential development, requiring parking costs to be unbundled from costs to rent or own a residential unit.
  - At least 20 percent of the units are affordable to lower-income residents.
  - Result in no net loss of existing affordable units.
- Building Decarbonization
  - Use all electric appliances without any natural gas connections and does not use propane or other fossil fuels for space heating, water heating, or indoor cooking.

The second approach to project-level alignment with State climate goals is net-zero GHG emissions, especially for new residential development. The third approach to demonstrating project-level alignment with State climate goals is to align with GHG thresholds of significance, which many local air quality management (AQMDs) and air pollution control districts (APCDs) have developed or adopted (CARB 2022b).

Senate Bill 375

SB 375, the Sustainable Communities and Climate Protection Act, was adopted in 2008 to connect the GHG emissions-reduction targets established in the 2008 Scoping Plan for the transportation sector to local land use decisions that affect travel behavior. Its intent is to reduce GHG emissions from light-duty trucks and automobiles (i.e., excluding emissions associated with goods movement) by aligning regional long-range transportation plans, investments, and housing allocations to local land use planning to reduce VMT and vehicle trips. Specifically, SB 375 required CARB to establish GHG emissions reduction targets for each of the 18 metropolitan planning organizations (MPOs). The Metropolitan Transportation Commission (MTC) is the MPO for the Bay Area region, which includes Solano County. Pursuant to the recommendations of the Regional Transportation Advisory Committee, CARB adopted per-capita reduction targets for each of the MPOs rather than a total magnitude reduction target.

2017 Update to the SB 375 Targets

CARB is required to update the targets for the MPOs every eight years. In June 2017, CARB released updated targets and technical methodology, and then released another update in February 2018, which became effective in October 2018. CARB adopted the updated targets and methodology on March 22, 2018. All SCSs adopted after October 1, 2018, are subject to these new targets. The updated targets consider the need to further reduce VMT, as identified in the 2017 Scoping Plan Update, while balancing the need for additional and more flexible revenue sources to incentivize positive planning and action toward sustainable communities. The updated SB 375 targets are in units of percent per capita reduction in GHG emissions from automobiles and light trucks compared to 2005. This excludes reductions anticipated from implementation of State technology and fuels strategies and any potential future State strategies such as statewide road user pricing. The updated targets call for greater per-capita GHG emission reductions from SB 375 than were currently in place, which for 2035 translates into updated targets that either match or exceed the emission reduction levels in the MPOs' currently adopted SCSs. CARB's updated targets result in an additional reduction of over 8 $MMTCO_2e$ in 2035 compared to the prior targets (CARB 2018).

Transportation Sector Specific Regulations

Advanced Clean Fleets and Advanced Clean Trucks

CARB adopted the Advanced Clean Fleets (ACF) regulation in 2023 to accelerate the transition to zero-emission medium- and heavy-duty vehicles. In conjunction with the Advanced Clean Trucks (ACT) regulation, the ACF regulations helps to ensure that medium- and heavy-duty ZEVs are brought to the market, by requiring certain fleets to purchase ZEVs. The ACF ZEV phase-in approach provides initial focus where the best fleet electrification opportunities exist, sets clear targets for regulated fleets to make a full conversion to ZEVs, and creates a catalyst to accelerate development of a heavy-duty public charging infrastructure network.

Assembly Bill 1493

California vehicle GHG emission standards were enacted under AB 1493 (Pavley I). Pavley I is a clean-car standard that reduces GHG emissions from new passenger vehicles (light-duty auto to medium-duty vehicles) from 2009 through 2016 and was anticipated to reduce GHG emissions from new passenger vehicles by 30 percent in 2016. California implements the Pavley I standards through a waiver granted to California by the USEPA. In 2012, the USEPA issued a Final Rulemaking that set even more stringent fuel economy and GHG emissions standards for model years 2017 through 2025 light-duty vehicles. (See also the previous discussion in federal regulations under "*Update to Corporate Average Fuel Economy Standards [2017 to 2026]*.")

In January 2012, CARB approved the Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025. The program combines the control of smog, soot, and GHGs with requirements for greater numbers of ZEVs into a single package of standards. Under California's Advanced Clean Car program, by 2025 new automobiles will emit 34 percent less GHG emissions and 75 percent less smog-forming emissions.

Executive Order S-01-07

On January 18, 2007, the State set a new low carbon fuel standard (LCFS) for transportation fuels sold in the state. EO S-01-07 set a declining standard for GHG emissions measured in CO_2e gram per unit of fuel energy sold in California. The LCFS required a reduction of 2.5 percent in the carbon intensity of California's transportation fuels by 2015 and a reduction of at least 10 percent by 2020. The standard applied to refiners, blenders, producers, and importers of transportation fuels, and used market-based mechanisms to allow these providers to choose the most economically feasible methods for reducing emissions during the "fuel cycle."

Executive Order B-16-2012

On March 23, 2012, the State directed CARB, the California Energy Commission (CEC), the Public Utilities Commission, and other relevant agencies to work with the Plug-in Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks to accommodate ZEVs in major metropolitan areas, including infrastructure to support them (e.g., EV charging stations). EO B-16-2012 also directed the number of ZEVs in California's State vehicle fleet to increase through the normal course of fleet replacement so that at least 10 percent of fleet purchases of light-duty vehicles are ZE by 2015 and at least 25 percent by 2020. The EO also established a target for the transportation sector of reducing GHG emissions to 80 percent below 1990 levels.

Executive Order N-79-20

On September 23, 2020, Governor Newsom signed EO N-79-20, establishing a goal that 100 percent of in-state sales of new passenger cars and trucks will be ZE by 2035. Additionally, the fleet goals for trucks are that 100 percent of drayage trucks are ZE by 2035, and 100 percent of medium- and heavy-duty vehicles in the state are ZE by 2045, where feasible. The EO's goal for the state is to transition to 100 percent ZE off-road vehicles and equipment by 2035, where feasible.

Renewables Portfolio: Carbon Neutrality Regulations

Senate Bills 1078, 107, and X1-2 and Executive Order S-14-08

A major component of California's Renewable Energy Program is the renewables portfolio standard established under Senate Bills 1078 (Sher) and 107 (Simitian). Under the RPS, certain retail sellers of electricity were required to increase the amount of renewable energy each year by at least 1 percent to reach at least 20 percent by December 30, 2010. EO S-14-08, signed in November 2008, expanded the State's renewable energy standard to 33 percent renewable power by 2020. This standard was adopted by the legislature in 2011 (SB X1-2). Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas. The increase in renewable sources for electricity production decreases indirect GHG emissions from development projects because electricity production from renewable sources is generally considered carbon neutral.

Senate Bill 350

SB 350 (de Leon) was signed into law in September 2015 and establishes tiered increases to the RPS—40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. SB 350 also set a new goal to double the energy-efficiency savings in electricity and natural gas through energy efficiency and conservation measures.

Senate Bill 100

On September 10, 2018, Governor Brown signed SB 100. Under SB 100, the RPS for public-owned facilities and retail sellers consists of 44 percent renewable energy by 2024, 52 percent by 2027, and 60 percent by 2030. SB 100 also established a new RPS requirement of 50 percent by 2026. Furthermore, the bill establishes an overall State policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all State agencies by December 31, 2045. Under the bill, the State cannot increase carbon emissions elsewhere in the western grid or allow resource shuffling to achieve the 100 percent carbon-free electricity target.

Senate Bill 1020

SB 1020 was signed into law on September 16, 2022. SB 1020 provides interim RPS targets (90 percent renewable energy by 2035 and 95 percent renewable energy by 2040) and requires renewable energy and zero-carbon resources to reach 100 percent clean electricity by 2045.

Energy-Efficiency Regulations

California Building Code: Building Energy-Efficiency Standards

Energy conservation standards for new residential and nonresidential buildings were adopted by the California Energy Resources Conservation and Development Commission (now the CEC) in June 1977 (Title 24, Part 6, of the California Code of Regulations [CCR]). Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for the consideration and possible incorporation of new energy-efficiency technologies and methods.

CEC adopted the 2022 Building Energy Efficiency Standards on August 11, 2021, and they went into effect on January 1, 2023. The 2022 standards encourage efficient electric heat pumps, establish electric-ready requirements for new homes, expand solar photovoltaic and battery storage standards, strengthen ventilation standards, among

other approaches. The 2022 standards require mixed-fuel single-family homes to be electric-ready to accommodate replacement of gas appliances with electric appliances. In addition, the new standards include prescriptive photovoltaic system and battery requirements for high-rise, multifamily buildings (i.e., more than three stories) and noncommercial buildings such as hotels, offices, medical offices, restaurants, retail stores, schools, warehouses, theaters, and convention centers (CEC 2021).

California Building Code: CALGreen

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (24 CCR, Part 11, known as "CALGreen") was adopted as part of the California Building Standards Code. CALGreen established planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants.[4] The mandatory provisions of CALGreen became effective January 1, 2011, and were last updated in 2022. The 2022 CALGreen standards became effective on January 1, 2023.

2006 Appliance Efficiency Regulations

The 2006 Appliance Efficiency Regulations (20 CCR Sections 1601–1608) were adopted by the CEC on October 11, 2006, and approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally regulated appliances and non–federally regulated appliances. Though these regulations are now often viewed as "business as usual," they exceed the standards imposed by all other states, and they reduce GHG emissions by reducing energy demand.

Solid Waste Diversion Regulations

Assembly Bill 939: Integrated Waste Management Act of 1989

California's Integrated Waste Management Act of 1989 (AB 939, Public Resources Code Section 40050 et seq.) set a requirement for cities and counties throughout the state to divert 50 percent of all solid waste from landfills by January 1, 2000, through source reduction, recycling, and composting. In 2008, the requirements were modified to reflect a per-capita requirement rather than tonnage. To help achieve this, the act requires that each City and County prepare and submit a source reduction and recycling element. AB 939 also established the goal for all California counties to provide at least 15 years of ongoing landfill capacity.

4 The green building standards became mandatory in the 2010 edition of CALGreen.

Assembly Bill 341

AB 341 (Chapter 476, Statutes of 2011) increased the statewide goal for waste diversion to 75 percent by 2020 and requires recycling of waste from commercial and multifamily residential land uses. Section 5.408 of CALGreen also requires that at least 65 percent of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse.

Assembly Bill 1327

The California Solid Waste Reuse and Recycling Access Act (AB 1327, Public Resources Code Section 42900 et seq.) requires areas to be set aside for collecting and loading recyclable materials in development projects. The act required the California Integrated Waste Management Board to develop a model ordinance for adoption by any local agency requiring adequate areas for collection and loading of recyclable materials as part of development projects. Local agencies are required to adopt the model or an ordinance of their own.

Assembly Bill 1826

In October 2014, Governor Brown signed AB 1826, requiring businesses to recycle their organic waste on and after April 1, 2016, depending on the amount of waste they generate per week. This law also requires that on and after January 1, 2016, local jurisdictions across the state implement an organic waste recycling program to divert organic waste generated by businesses and multifamily residential dwellings with five or more units. Organic waste means food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed with food waste.

Water Efficiency Regulations

Senate Bill X7-7

The 20x2020 Water Conservation Plan was issued by the California Department of Water Resources (DWR) in 2010 pursuant to SB 7, which was adopted during the 7th Extraordinary Session of 2009–2010 and therefore dubbed “SBX7-7.” SBX7-7 mandated urban water conservation and authorized DWR to prepare a plan implementing urban water conservation requirements, which DWR did through the 20x2020 Water Conservation Plan. In addition, it required agricultural water providers to prepare agricultural water management plans, measure water deliveries to customers, and implement other efficiency measures. SBX7-7 required urban water providers to adopt a water conservation target of a 20 percent reduction in urban per-capita water use by 2020 compared to 2005 baseline use.

Assembly Bill 1881: Water Conservation in Landscaping Act

The Water Conservation in Landscaping Act of 2006 (AB 1881) requires local agencies to adopt the updated DWR model ordinance or an equivalent. AB 1881 also requires CEC to consult with DWR to adopt, by regulation, performance standards and labeling requirements for landscape irrigation equipment, including irrigation controllers, moisture sensors, emission devices, and valves, to reduce the wasteful, uneconomic, inefficient, or unnecessary consumption of energy or water.

Short-Lived Climate Pollutant Reduction Strategy

On September 19, 2016, the Governor signed SB 1383 to supplement the GHG reduction strategies in the Scoping Plan to consider short-lived climate pollutants, including black carbon and methane. Black carbon is the light-absorbing component of fine particulate matter produced during the incomplete combustion of fuels. SB 1383 required CARB, no later than January 1, 2018, to approve and begin implementing a comprehensive strategy to reduce emissions of short-lived climate pollutants to achieve a reduction in methane by 40 percent, hydrofluorocarbon gases by 40 percent, and anthropogenic black carbon by 50 percent below 2013 levels by 2030. The bill also established targets for reducing organic waste in landfills. On March 14, 2017, CARB adopted the Short-Lived Climate Pollutant Reduction Strategy, which identifies the State's approach to reducing anthropogenic and biogenic sources of short-lived climate pollutants. Anthropogenic sources of black carbon include on- and off-road transportation, residential wood burning, fuel combustion (charbroiling), and industrial processes. According to CARB, ambient levels of black carbon in California are 90 percent lower than in the early 1960s, despite the tripling of diesel fuel use (CARB 2017). In-use, on-road rules were expected to reduce black carbon emissions from on-road sources by 80 percent between 2000 and 2020.

Regional

Plan Bay Area: Strategy for a Sustainable Region

MTC and the Association of Bay Area Governments (ABAG) adopted Plan Bay Area 2050 on October 21, 2021 (ABAG and MTC 2021). Plan Bay Area 2050 provides transportation and environmental strategies to continue to meet the regional transportation-related GHG reduction goals of SB 375. Under the Plan Bay Area 2050 strategies, just under half of all Bay Area households would live within one half mile of frequent transit by 2050, with this share increasing to over 70 percent for households with low incomes. Transportation and environmental strategies that support active and shared modes, combined with a transit-supportive land use pattern, are forecasted to lower the share of Bay Area residents that

drive to work alone from over 50 percent in 2015 to 36 percent in 2050. GHG emissions from transportation would decrease significantly as a result of these transportation and land use changes, and the Bay Area would meet the State mandate of a 19-percent reduction in per-capita emissions by 2035 — but only if all strategies are implemented (ABAG and MTC 2021).

To achieve this sustainable vision for the Bay Area, the Plan Bay Area land use concept plan for the region concentrates the majority of new population and employment growth in the region in Priority Development Areas (PDAs). PDAs are transit-oriented, infill development opportunity areas in existing communities. An overarching goal of the regional plan is to concentrate development in areas where there are existing services and infrastructure rather than allocate new growth to outlying areas where substantial transportation investments would be necessary to achieve the per-capita passenger vehicle, VMT, and associated GHG emissions reductions. However, Rio Vista is not within an identified PDA (MTC 2023).

Local

Yolo-Solano County Air Pollution Control District

Addressing GHG generation impacts requires an agency to make a determination as to what constitutes a significant impact. The California Environmental Quality Act (CEQA) Guidelines specifically allow lead agencies to determine thresholds of significance that illustrate the extent of an impact and are a basis from which to apply mitigation measures. This means that each agency is left to determine if a project's GHG emissions would have a significant impact on the environment. The guidelines direct that agencies are to use "careful judgment" and "make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate" the development's GHG emissions (14 CCR Section 15064.4[a]). Determining a threshold of significance for climate change impacts poses a special difficulty for lead agencies. Much of the science in this area is new and is evolving constantly. At the same time, neither the State nor local agencies are specialized in this area, and there are currently no local, regional, or State thresholds for determining whether a residential development has a significant impact on climate change. The CEQA Amendments do not prescribe specific significance thresholds but instead leave considerable discretion to lead agencies to develop appropriate thresholds to apply to projects in their jurisdiction.

The Yolo-Solano Air Quality Management District (YSAQMD) has not adopted thresholds of significance for GHG emissions. In the absence of thresholds of significance, this analysis employs the use of the methods and protocols for preparing a plan-level analysis

of the Bay Area Air District (Air District). The Air District is the air quality officer for the San Francisco Bay Area Air Basin, which directly borders the City of Rio Vista. The Air District does not promulgate a plan-level or project-level construction GHG threshold. Thus, this analysis also cites the project-level construction significance threshold established by the Sacramento Metropolitan Air Quality Management District (SMAQMD), the air quality officer for the metropolitan Sacramento region. Both the SMAQMD and Air District have adopted GHG emission thresholds to assist the district in attaining the GHG reduction goals established by AB 32 and SB 32.

The 2017 Scoping Plan also addressed how CEQA can be used to further statewide GHG reduction goals. The Scoping Plan recommends GHG reduction goals that can apply to plan- or project-level analyses to be incorporated into environmental documentation in support of CEQA. The Scoping Plan states that a per-capita GHG target is "appropriate for the plan level (city, county, subregional, or regional level), but not for specific individual projects, because CARB's metric includes all emissions sectors in the State." The Air District states that regional plans, such as the proposed General Plan Update, would have a less-than-significant impact related to GHG emissions if can be demonstrated that there is no net increase in GHG emissions. To demonstrate no net increase, two comparative analyses should be completed for the projected future emissions:

- Compare the existing (base year) emissions with projected future year emissions plus the regional plan's emissions (base year/regional plan comparison).
- Compare projected future year emissions with projected future year emissions plus the regional plan's emissions (no regional plan/regional plan comparison).

If both comparative analyses demonstrate no net increase in emissions, the GHG impacts of the General Plan Update would be less than significant.

5.8.1.4 EXISTING CONDITIONS

California's GHG Sources and Relative Contribution

In 2022, the statewide GHG emissions inventory was updated for 2000 to 2020 emissions using the GWPs in IPCC's AR4, and reported that California produced 369.2 $MMTCO_2e$ GHG emissions in 2020 (CARB 2022a), which was 35.3 $MMTCO_2e$ lower than 2019 levels and 61.8 $MMTCO_2e$ below the 2020 GHG limit of 431 $MMTCO_2e$. The 2019 to 2020 decrease in emissions is likely due in large part to the impacts of the COVID-19 pandemic. However, since the peak level in 2004, California's GHG emissions have generally followed a decreasing trend. In 2014, statewide GHG emissions dropped below the 2020 GHG limit and have remained below the limit since that time. Per-capita GHG emissions

in California have dropped from a 2001 peak of 13.8 metric tons per person to 9.3 metric tons per person in 2020, a 33-percent decrease (CARB 2022a).

California's transportation sector remains the largest generator of GHG emissions, producing 37 percent of the state's total emissions in 2020. Industrial sector emissions made up 20 percent and electric power generation made up 16 percent of the state's emissions inventory. Other major sectors of GHG emissions include commercial and residential (4 percent), agriculture and forestry (8.6 percent), high-GWP gases (5.8 percent), and recycling and waste (2 percent) (CARB 2022a).

Transportation emissions continued to decline for the past three consecutive years with the rise of fuel efficiency for the passenger vehicle fleet and an increase in battery electric vehicles. The deployment of renewable and less carbon-intensive resources and higher energy-efficiency standards have facilitated the continuing decline in fossil fuel electricity generation. The industrial sector trend has been relatively flat in recent years but saw a decrease of 7.1 $MMTCO_2e$ in 2020. Commercial and residential emissions saw a decrease of 1.7 $MMTCO_2e$. Emissions from high-GWP gases have continued to increase as they replace ozone-depleting substances (ODS) that are being phased out under the 1987 Montreal Protocol. Emissions from other sectors have remained relatively constant in recent years. Overall trends in the inventory also continue to demonstrate that the carbon intensity of California's economy (i.e., the amount of carbon pollution per million dollars of gross domestic product [GDP]) is declining. From 2000 to 2020, the carbon intensity of California's economy decreased by 49 percent, while the GDP increased by 56 percent (CARB 2022a).

5.8.2 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 GHG 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 GHGs.

The Appendix G thresholds for GHGs do not prescribe specific methodologies for performing an assessment, do not establish specific thresholds of significance, and do not mandate specific mitigation measures. Rather, the CEQA Guidelines emphasize the lead agency's discretion to determine the appropriate methodologies and thresholds of

significance consistent with the manner in which other impact areas are handled in CEQA. With respect to GHG emissions, the CEQA Guidelines Section 15064.4(a) states that lead agencies "shall make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate, or estimate" GHG emissions resulting from a project. The CEQA Guidelines note that an agency has the discretion to either quantify a project's GHG emissions or rely on a "qualitative analysis or other performance-based standards." (14 CCR 15064.4(b)). A lead agency may use a "model or methodology" to estimate GHG emissions and has the discretion to select the model or methodology it considers "most appropriate to enable decision makers to intelligently take into account the project's incremental contribution to climate change" (14 CCR 15064.4(c)). Section 15064.4(b) provides that the lead agency should consider the following when determining the significance of impacts from GHG emissions on the environment:

1. The extent a project may increase or reduce GHG emissions as compared to the existing environmental setting.
2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
3. The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR 15064.4[b]).

As previously described, the GHG emission thresholds assist the City in attaining the GHG reduction goals established by AB 32 and SB 32. For the purpose of this evaluation, the proposed General Plan Update is evaluated consistent with Air District guidance for analyzing regional plans. As previously described, the Air District states that regional plans, such as the proposed General Plan Update, would have a less-than-significant impact related to GHG emissions if it can be demonstrated that there is no net increase in GHG emissions. To demonstrate no net increase, two comparative analyses are completed for the projected future emissions:

- A comparison of the existing (base-year) emissions with projected future-year emissions plus the regional plan's emissions (base year/regional plan comparison).
- A comparison of the projected future-year emissions with projected future-year emissions plus the regional plan's emissions (no regional plan/regional plan comparison).

If both comparative analyses demonstrate no net increase in emissions, the GHG impacts of the General Plan Update would be less than significant. Due to a limitation of data, a comparison of the emissions that would be generated under the proposed General Plan Update cannot be compared to existing conditions, but only to the emissions that would be generated at buildout of the existing General Plan 2001.

5.8.2.1 CONSISTENCY WITH STATEWIDE GHG REDUCTION TARGETS

The proposed General Plan forecasts growth in the city through year 2045; therefore, this EIR analyzes the potential for the proposed project to conflict with statewide GHG reduction goals identified in the CARB 2022 Scoping Plan that are applicable to local governments. This includes AB 1279, which requires an 85 percent reduction in GHG emissions by 2045 to stabilize CO_2e emissions and avoid the most catastrophic impacts of climate change, as well as to make substantial progress toward carbon neutrality.[5]

5.8.2.2 MASS EMISSIONS AND HEALTH EFFECTS

On December 24, 2018, in *Sierra Club et al. v. County of Fresno et al.* (Friant Ranch), the California Supreme Court determined that the EIR for the proposed Friant Ranch project failed to adequately analyze the project's air quality impacts on human health. The EIR prepared for the project, which involved a master planned retirement community in Fresno County, showed that project-related mass emissions would exceed the San Joaquin Valley Air Pollution Control District's regional significance thresholds. In its findings, the California Supreme Court affirmed the holding of the Court of Appeal that EIRs for projects must not only identify impacts to human health, but also provide an "analysis of the correlation between the project's emissions and human health impacts" related to each criterion air pollutant that exceeds the regional significance thresholds or explain why it could not make such a connection. In general, the ruling focuses on the correlation of emissions of toxic air contaminants and criteria air pollutants and their impact to human health.

5 The 2022 Scoping Plan includes statewide measures to achieve the State's carbon neutrality goals under EO B-55-18, such as carbon dioxide removal (CDR), that are not applicable to local governments. Carbon neutrality goals are a "no impact" level and not a "less-than-significant" impact level for climate change effects. There are presently no reliable means of forecasting how future technological developments related to CDR may affect future emissions in a planning jurisdiction. Therefore, carbon neutrality targets are not directly applicable to local governments and CEQA projects to mitigate GHG emissions impacts of a proposed project. Moreover, AB 1279 GHG reduction targets for 2045 are in line with the scientifically established levels needed in the U.S. to limit global warming below 1.5 to 2.0 degrees Celsius, the warming threshold at which scientists say there will likely be major climate disruptions such as super droughts and rising sea levels. For these reasons, the targets of AB 1279 are applicable to the EIR.

In 2009, the USEPA issued an endangerment finding for six GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) in order to regulate GHG emissions from passenger vehicles. The endangerment finding is based on evidence that shows an increase in mortality and morbidity associated with increases in average temperatures, which increase the likelihood of heatwaves and ozone levels. The effects of climate change are identified in Table 5.8-2. Though identified effects such as sea-level rise and increased extreme weather can indirectly impact human health, neither the USEPA nor CARB has established ambient air quality standards for GHG emissions. The State's GHG reduction strategy outlines a path to avoid the most catastrophic effects of climate change. Yet the State's GHG reduction goals and strategies are based on the State's path toward reducing statewide cumulative GHGs as outlined in AB 32, SB 32, and AB 1279.

The two significance thresholds that the City uses to analyze GHG impacts are based on achieving the statewide GHG reduction goals (GHG-1) and relying on consistency with policies or plans adopted to reduce GHG emissions (GHG-2). Further, because no single project is large enough to result in a measurable increase in global concentration of GHG emissions, climate change impacts of a project are considered on a cumulative basis. Without federal ambient air quality standards for GHG emissions and given the cumulative nature of GHG emissions and the City's significance thresholds, which are tied to reducing the state's cumulative GHG emissions, it is not feasible at this time to connect the project's specific GHG emissions to the potential health impacts of climate change.

5.8.3 Proposed General Plan Goals and Policies

The following goals and policies from the proposed General Plan Update are applicable to GHG emissions.

Open Space and Conservation Element

- **Goal OSC-3:** To utilize energy and water resources wisely, and to promote conservation programs for lower energy and water consumption in the City.
  - **Policy OSC-13:** Require application of the analysis methods and significance thresholds recommended by the Yolo-Solano Air Quality Management District to determine a project's air quality impacts.
  - **Policy OSC-14:** Promote energy conservation programs for all utility users and encourage active and passive solar energy design in building and site development. Promote more tree planting and landscaping in the City to reduce the heat island effect and address climate change.

Land Use and Community Character Element

- **Goal LU-1:** To create a Downtown and Waterfront that is a vibrant, highly desirable place for residents, businesses, and visitors.
- **Goal LU-2:** To maintain and enhance Rio Vista while providing a safe, family-friendly small-town character.
- **Goal LU-4:** To create a community with a variety of housing types that offer choices for Rio Vista residents and create complete, livable neighborhoods.
- **Goal LU-6:** To encourage the growth and development of new retail services and businesses, employment, restaurants/dining establishments, and entertainment uses in Rio Vista to meet the needs of the community and visitors to the City.
- **Goal LU-7:** To welcome new businesses and job opportunities in the City, while ensuring compatibility with surrounding uses and planned new uses.
  - **Policy LU-1:** Promote the development of compact, complete residential neighborhoods by encouraging the location of services and amenities within walking and biking distance of residences.
  - **Policy LU-3:** Encourage new residential development to incorporate design features that promote walking and connectivity between blocks and adjacent neighborhoods.
  - **Policy LU-6:** Encourage development in the North Waterfront District to be a mix of uses including residential, commercial, and public park space along the waterfront.
  - **Policy LU-9:** Promote pedestrian-oriented retail and mixed-use development in Neighborhood Mixed Use, Downtown, and the Waterfront areas.

Mobility and Circulation Element

- **Goal MC-1:** A circulation and mobility system that prioritizes safety and supports and accommodates all modes of transportation.
- **Goal MC-2:** A network of roads and trails that balances local mobility needs of community members with the needs of regional circulation/commuters passing through Rio Vista.
- **Goal MC-3:** A citywide circulation system that is adequate and evolves to meet the needs of the community over time.
  - **Policy MC-15:** In new construction, provide mid-block pedestrian crossings and off-street pedestrian paths in areas with high pedestrian traffic to create more direct walking routes.

- **Policy MC-16:** The City's circulation network should accommodate all anticipated and potential modes of transportation, including small personal electric vehicles ranging in size up to golf carts.

Parks and Recreation Element

- **Goal PR-1:** To provide well designed parks that are accessible, attractive, meet recreational needs of the community and enhance neighborhood identity and character.
  - **Policy PR-9:** Create an integrated trail, bikeway, and open space network within the City that links parks and recreation areas, schools, downtown, the waterfront, and residential neighborhoods. These should also provide connections to regional trails, bikeways, and open space areas.

5.8.4 Environmental Impacts

5.8.4.1 METHODOLOGY

Impacts related to GHG emissions resulting from implementation (construction and operation) of the proposed General Plan Update are discussed below. The impact analysis is based on calculations of the GHG emissions that would result from projected future growth at buildout of the 2045 General Plan Update.

Compared with buildout of the City of Rio Vista under the existing General Plan 2001, buildout under the proposed project is projected to bring 2,467 new housing units, 6,169 new residents, 88 acres of new commercial space, and 54 acres of new industrial space to the City of Rio Vista. Where criteria air pollutant quantification was required, emissions were modeled using CalEEMod, version 2022.1.28. CalEEMod is a statewide land use emissions computer model designed to quantify potential GHG emissions associated with operations from a variety of land use projects. The net increase in GHG emissions generated by the 2045 General Plan Update are estimated based on CalEEMod default VMT and General Plan land use buildout assumptions. Operational generated GHG emissions calculations employed land uses and acreage provided by the City, coupled with the median density/intensity standards contained in the City's Municipal Code. (Density/intensity standards indicate how much development is allowed on a single plot of land. A maximum permitted FAR is specified for nonresidential uses. FAR refers to the ratio of building floor space compared to the square footage of the site.)

It is noted here that following completion of the original citywide emissions modeling effort for the proposed General Plan Update (Table 5.8-4), the City of Rio Vista made a minor adjustment to the anticipated land use buildout assumptions. Specifically, the revised land use scenario includes approximately 555 fewer residential units than were originally modeled and approximately 11 additional acres of commercial and industrial land uses. Although the revised land use assumptions slightly shift the overall development balance within the city, the originally modeled scenario remains a valid and conservative estimate of potential GHG-related impacts. The net reduction of 555 residential units represents a meaningful decrease in potential sources of mobile GHG emissions (e.g., residential vehicle trips), solid waste emissions, and area source emissions (e.g., landscaping, consumer product use). While the increase in commercial and industrial acreage may lead to marginally higher emissions associated with those sectors (e.g., delivery vehicle traffic, energy usage), such uses tend to have lower overall emissions per acre than residential development when evaluated on a citywide scale, particularly when considering indirect emissions such as VMT. Furthermore, the original modeling effort was designed to evaluate a maximum reasonable development scenario based on the buildout of the land use map. As such, the shift in land use assumptions does not introduce new land use types, nor does it substantially increase overall development intensity relative to the modeled scenario. On balance, the revised land use scenario is not expected to result in materially greater GHG emissions than those previously modeled.

Impact 5.8-1: Implementation of the proposed project could result in emissions that would exceed project-level construction significance threshold established by the SMAQMD. [Threshold GHG-1]

The General Plan Update would accommodate future development for residential, commercial, recreational, and industrial uses. The future development and other physical changes that could result from the implementation of the General Plan Update would generate construction-related GHG emissions from worker commute trips, haul trucks carrying supplies and materials to and from the construction site, and off-road construction equipment (e.g., dozers, loaders, excavators).

Construction activities associated with the proposed General Plan Update would occur over the buildout horizon of the plan, causing short-term GHG emissions. For the proposed General Plan Update, which is a broad policy plan, it is not possible to determine whether the scale and phasing of individual construction projects would exceed recommended GHG construction thresholds due to project-level variability and uncertainties related to future individual projects in terms of detailed site plans,

construction schedules, equipment requirements, etc., which are not currently determined or even proposed.[6] Nonetheless, depending on how development proceeds, construction-generated GHG emissions associated with the proposed General Plan Update could potentially exceed the recommended threshold of significance for construction activities. Overall, GHG emissions related to construction must be addressed on a project-by-project basis, and information regarding specific development projects, soil types, and the locations of receptors would be needed to quantify the level of impact associated with construction activity.

Proposed General Plan Update Policy OSC-13 would require application of the analysis methods and significance thresholds recommended by the YSAQMD to determine a future project's GHG-related impacts. The YSAQMD has not adopted thresholds of significance for GHG emissions. In absence of thresholds of significance, this analysis employs the use of the methods and protocols for preparing a plan-level analysis of the Air District. The Air District is the air quality officer for the San Francisco Bay Area Air Basin, which directly borders the City of Rio Vista. The Air District does not promulgate a plan level or project-level construction GHG threshold. Thus, this analysis cites the project-level construction significance threshold established by the SMAQMD, the air quality officer for the metropolitan Sacramento region. The SMAQMD has adopted a numeric threshold of 1,100 $MTCO_2e$ annually from construction activities. The significance criteria established by the SMAQMD for future construction projects instigated by the proposed General Plan Update may be relied upon to make a determination of impact significance level.

Development projects accommodated by the proposed project would be analyzed on a case-by-case basis when detailed information regarding operational activities is known; however, construction activities allowed under the proposed General Plan Update may still exceed the significance threshold. Since it cannot be guaranteed that construction of future projects allowed under the proposed General Plan Update would generate GHG emissions below the significance threshold due to the programmatic and conceptual nature of the proposed General Plan Update and uncertainties related to future individual projects, this is considered a potentially significant impact.

Level of Significance Before Mitigation: Impact 5.8-1 would be potentially significant.

6 As previously stated, the YSAQMD has no established GHG emissions thresholds. In absence of thresholds of significance, this analysis employs the use of the methods and protocols for preparing a plan-level analysis of the Air District. The Air District does not promulgate a plan-level or project-level construction GHG threshold. Thus, this analysis also cites the project-level construction significance threshold established by the SMAQMD. The SMAQMD has adopted a numeric threshold of 1,100 $MTCO_2e$ annually from construction activities.

Mitigation Measures

There are no feasible mitigation measures.

Level of Significance After Mitigation: Impact 5.8-1 would be significant and unavoidable.

Impact 5.8-2: Implementation of the proposed project could conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing GHG emissions. [Threshold GHG-2]

Development under the proposed General Plan Update would contribute to global climate change through direct and indirect emissions of GHG from land uses in the city. A General Plan does not directly result in development without additional approvals. However, the General Plan Update would guide and facilitate development throughout the city. Before any development can occur in the city, it must be analyzed for consistency with the General Plan, zoning requirements, and other applicable local and State requirements; comply with the requirements of CEQA; and obtain all necessary clearances and permits. Future development projects would be subject to the City's standard CEQA review process and would be required to assess project-specific emissions in relation to the YSAQMD significance thresholds. Although specific project-level information for potential future development is not available at this time and the estimation of emissions resulting from future development would be speculative, anticipated maximum annual GHG emissions were quantified and presented in Table 5.8-4 to provide an estimate of the potential overall GHG emissions resulting from the proposed General Plan Update based on the calculation methodology provided in Section 5.8.4.1, *Methodology*.

The proposed General Plan Update would have a less-than-significant impact related to GHG emissions if it can be demonstrated that there is no net increase in GHG emissions. To demonstrate no net increase, two comparative analyses are completed for the projected future emissions, as follows:

- A comparison of the existing (base-year) emissions with projected future-year emissions plus the regional plan's emissions (base year/regional plan comparison).
- A comparison of the projected future-year emissions with projected future-year emissions plus the regional plan's emissions (no regional plan/regional plan comparison).

In the case that both comparative analyses demonstrate no net increase in emissions, the GHG impacts of the General Plan Update would be less than significant.

Table 5.8-4 Operational-Related Greenhouse Gas Emissions

Emission Source	CO_2 Emissions (Metric Tons/Year)
Proposed 2045 General Plan Update Buildout Emissions	
Mobile	269,456
Area	561
Energy	133,147
Water	10,805
Waste	14,112
Refrigerants	493
Total	**428,574**
Existing General Plan 2001 Buildout Emissions	
Mobile	232,660
Area	361
Energy	84,439
Water	7,493
Waste	9,612
Refrigerants	559
Total	**335,124**
Difference in Proposed 2045 General Plan and Existing General Plan	
Mobile	+36,796
Area	155
Energy	+48,708
Water	+3,312
Waste	+4,500
Refrigerants	-66
Total	**+93,450**

Sources: CalEEMod 2022.1.28; Refer to Attachment A and B of Appendix 5.3-1 for Model Data Outputs.
Notes: Emission projections predominately based on CalEEMod model defaults for Solano County, site acreage provided by the City, and median building square footage and dwelling units allowed per information the City's General Plan Land Use Element. Following completion of the original citywide GHG emissions modeling effort for the proposed General Plan Update, the City of Rio Vista made a minor adjustment to the anticipated land use buildout assumptions. Specifically, the revised land use scenario includes approximately 555 fewer residential units than were originally modeled and approximately 11 additional acres of commercial and industrial land uses. General Plan buildout emission projections remain a valid and conservative estimate. The net reduction of 555 residential units represents a meaningful decrease in potential sources of mobile emissions (e.g., residential vehicle trips) and area source emissions (e.g., landscaping, consumer product use). While the increase in commercial and industrial acreage may lead to marginally higher GHG emissions associated with those sectors (e.g., delivery vehicle traffic, energy usage), such uses tend to have lower overall GHG emissions per acre than residential development when evaluated on a citywide scale, particularly when considering indirect emissions such as VMT. Furthermore, the shift in land use assumptions does not introduce new land use types, nor does it substantially increase overall development intensity relative to the modeled scenario. On balance, the revised land use scenario is not expected to result in materially greater GHG emissions than those previously modeled.

As shown in Table 5.8-4, the GHG emissions from buildout of the proposed General Plan Update would be greater than the GHG emissions from buildout of the existing General Plan 2001 buildout by approximately 93,450 MTCO2e annually. This net increase of GHG emissions associated with the proposed General Plan Update compared with the existing General Plan 2001 is largely due to mobile-source and energy-source emissions. Since a net increase of GHG emissions would occur as a result of the proposed General Plan Update, the plan-level GHG threshold previously identified would be surpassed.

The General Plan Update does propose several policy provisions that would help to reduce the generation of GHG emissions from mobile sources. For instance, proposed Land Use and Community Character Element Policy LU-1 seeks the development of compact, complete residential neighborhoods by encouraging the location of services and amenities within walking and biking distance of residences. Policy LU-3 would encourage new residential development to incorporate design features that promote walking and connectivity between blocks and adjacent neighborhoods and in a similar context, Policy LU-6 would encourage development in the North Waterfront District to be a mix of uses including residential, commercial, and public park space along the waterfront. Proposed Policy LU-9 would promote pedestrian-oriented retail and mixed-use development in Neighborhood Mixed Use, Downtown, and the Waterfront areas. The promotion of mixed-use development contributes to less dependency on automobiles, a source of GHG emissions. Mobility and Circulation Policies MC-2, MC-4, and MC-14 proposes to promote the development of bikeways, sidewalks, pedestrian pathways, and multi-use paths that connect residential neighborhoods with other neighborhoods, schools, employment centers, commercial centers, and public open space, and that separate bicyclists, skateboarders, and pedestrians from vehicular traffic whenever possible. Proposed Policy MC-15 seeks to ensure that bicycle and pedestrian facilities follow logical routes providing connections between transportation nodes and land uses, including bicycle and pedestrian connections to transit stops, buses that can accommodate bicycles, and park-and-ride lots, so that the pedestrian facilities serve the transportation needs of residents, and are not constructed as “sidewalks to nowhere.” Further, Policy MC-16 seeks to ensure that the City’s circulation network will accommodate all anticipated and potential modes of transportation, including small personal electric vehicles ranging in size up to golf carts. Additionally, Parks & Recreation Policy PR-9 proposes to create an integrated trail, bikeway, and open space network within the city that links parks and recreation areas, schools, downtown, the waterfront, and residential neighborhoods. Lastly, proposed Open Space and Resource Conservation Policy OSC-14 seeks to promote energy conservation programs for all utility users and encourage active and passive solar

energy design in building and site development; and promote more tree planting and landscaping in the city to reduce the heat island effect and address climate change.

Development projects accommodated by the proposed General Plan Update would be analyzed on a case-by-case basis when detailed information regarding operational activities is known. Future projects would be subject to the proposed General Plan Update policies identified above, as well as YSAQMD and State rules and regulations. Nonetheless, as shown in Table 5.8-4, a net increase of GHG emissions from buildout of the existing General Plan 2001 would occur as a result of the proposed General Plan Update. Thus, the identified plan-level GHG threshold would be surpassed. There are no additional plan-level measures available that would reduce impacts from long-term operational-related emissions. All feasible operational emissions reduction measures have been incorporated into the General Plan Update through the inclusion of the policies discussed above. There could be additional project-specific mitigation measures applied to specific future development allowed under the General Plan Update to reduce long-term operational-generated GHG emissions to levels below the applicable thresholds of significance. For instance, as previously described, AB 1279, the California Climate Crisis Act, requires California to achieve carbon neutrality as soon as possible, but no later than 2045, and to achieve and maintain net negative GHG emissions thereafter. The 2022 Scoping Plan Update outlines the mechanisms for how this will be achieved. As stated in the 2022 Update, “the plan outlines how carbon neutrality can be achieved by taking bold steps to reduce GHGs to meet the anthropogenic emissions target and by expanding actions to capture and store carbon through the State’s natural and working lands and using a variety of mechanical approaches.” Specifically, the 2022 Update identifies a path to keep California on track to meet its SB 32 GHG reduction target of at least 40 percent below 1990 emissions by 2030, identifies a technologically feasible, cost-effective path to achieve carbon neutrality by 2045, and a reduction in anthropogenic emissions by 85 percent below 1990 levels, relies on the most up-to-date science, including the need to deploy all viable tools to address the existential threat that climate change presents, including carbon capture and sequestration, as well as direct air capture, and identifies key implementation actions to ensure success. However, the nature, feasibility, and effectiveness of such strategies implemented in Rio Vista cannot be determined at this time. As such, the City cannot assume that mitigation would be available and implemented such that all future operational-related emissions of air pollutants would be reduced to less-than-significant levels. As such, this impact is potentially significant.

Level of Significance Before Mitigation: Impact 5.8-2 would be potentially significant.

Mitigation Measures

There are no feasible mitigation measures.

Level of Significance After Mitigation: Impact 5.8-2 would be significant and unavoidable.

5.8.5 Cumulative Impacts

General Plan Update-related GHG emissions are not confined to a particular air basin but are dispersed worldwide. Therefore, impacts under Impact 5.8-2 are not project-specific impacts to global warming, but the proposed General Plan Update's contribution to this cumulative impact. As discussed, a net increase of GHG emissions from buildout of the existing General Plan 2001 would occur as a result of the proposed General Plan Update, resulting in an exceedance of the applicable plan-level significance threshold. Consequently, the proposed General Plan Update's cumulative contribution to global climate change impacts would be considered cumulatively considerable.

5.8.6 Level of Significance Before Mitigation

After implementing regulatory requirements and standard conditions of approval, all impacts would be potentially significant.

5.8.7 Mitigation Measures

There are no feasible mitigation measures.

5.8.8 Level of Significance After Mitigation

Impact 5.8-1

Impacts would be significant and unavoidable, as described above. Construction activities associated with the proposed General Plan Update would occur over the buildout horizon of the plan, causing short-term GHG emissions. For the proposed General Plan Update, which is a broad policy plan, it is not possible to determine whether the scale and phasing of individual construction projects would exceed recommended GHG construction thresholds due to project-level variability and uncertainties related to future individual projects in terms of detailed site plans, construction schedules, equipment requirements, etc., which are not currently determined or even proposed. Future development projects allowed under the proposed General Plan Update that are projected to exceed the

significance threshold are required to implement mitigation measures to reduce GHG emissions as much as feasible; however, the significance threshold may still be exceeded as a result of construction activities allowed under the proposed General Plan Update. Since it cannot be guaranteed that construction of future projects allowed under the proposed General Plan Update would generate GHG emissions below the significance threshold due to the programmatic and conceptual nature of the proposed General Plan Update and uncertainties related to future individual projects, impacts would remain significant and unavoidable.

Impact 5.8-2

Impacts would be significant and unavoidable, as described above. The GHG emissions from buildout of the proposed General Plan Update would be greater than the GHG emissions from buildout of the existing General Plan 2001 buildout by approximately 93,450 $MTCO_2e$ annually. Since a net increase of GHG emissions would occur as a result of the proposed General Plan Update, the plan-level GHG threshold previously identified would be surpassed. There are no additional plan-level measures available that would reduce impacts from long-term operational-related emissions. All feasible operational emissions-reduction measures have been incorporated into the General Plan Update through the inclusion of the policies discussed previously. As such, impacts would remain significant and unavoidable.

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5.9 HAZARDS AND HAZARDOUS MATERIALS

This section of the Draft Environmental Impact Report (EIR) evaluates the potential impacts of the Rio Vista General Plan Update (proposed project) on human health and the environment due to exposure to hazardous materials or conditions associated with project sites, project construction, and project operations of future development. Hazards associated with flooding are discussed in Section 5.10, *Hydrology and Water Quality*. Cumulative impacts related to hazards and hazardous materials would be contiguous with the city boundary.

5.9.1 Environmental Setting

5.9.1.1 AGENCIES THAT REGULATE HAZARDOUS MATERIALS

Hazardous materials are substances that exhibit corrosive, poisonous, flammable, and/or reactive properties and have the potential to harm human health and/or the environment. Hazardous materials are used in products (e.g*.,* household cleaners, industrial solvents, paints, pesticides, etc.) and manufacturing (e.g., of electronics, newspapers, plastic products, etc.). Examples of hazardous materials are petroleum, natural and synthetic gas, and other toxic chemicals that may be used in agriculture or commercial and industrial uses, businesses, hospitals, and households. Accidental release of hazardous materials have a variety of causes, including highway incidents, warehouse fires, train derailments, shipping accidents, and industrial incidents.

The term “hazardous materials,” as used in this section, includes all materials defined in the California Health and Safety Code (Sections 2411, 25501):

> A material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. “Hazardous materials” include, but are not limited to, hazardous substances, hazardous waste, and any material that a handler or the unified program agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

Federal and State hazardous waste definitions are similar, but different enough that separate classifications are in place for federal Resource Conservation and Recovery Act (RCRA) hazardous wastes and State non-RCRA hazardous wastes.

The following agencies govern hazardous materials in the City of Rio Vista.

Federal Agencies

Several federal agencies regulate hazardous materials.

- **U.S. Environmental Protection Agency (USEPA).** The USEPA is the primary federal agency that regulates hazardous materials and waste. In general, the USEPA develops and enforces regulations that implement environmental laws enacted by Congress. The agency is responsible for researching and setting national standards for a variety of environmental programs, and delegates to states and tribes the responsibility for issuing permits and for monitoring and enforcing compliance. USEPA programs promote handling hazardous waste safely, cleaning up contaminated land, and reducing trash. Under the authority of the RCRA and in cooperation with state and tribal partners, the Waste Management Division manages a hazardous waste program, an underground storage tank program, and a solid waste program, which includes development of waste reduction strategies such as recycling. The USEPA has also promulgated regulations for the transport of hazardous wastes. These more stringent requirements include tracking shipments with manifests to ensure that waste is delivered to their intended destinations.
- **Occupational Safety and Health Administration (OSHA).** OSHA oversees administration of the Occupational Safety and Health Act, which requires specific training for hazardous materials handlers, provision of information to employees who may be exposed to hazardous materials, and acquisition of material safety data sheets from manufacturers. Material safety data sheets describe the risks associated with particular hazardous materials, and proper handling and procedures. Employee training must include response and remediation procedures for hazardous materials releases and exposures.
- **U.S. Department of Transportation (USDOT).** The USDOT has developed regulations pertaining to the transport of hazardous materials and hazardous wastes by all modes of transportation. The US Postal Service has developed additional regulations for the transport of hazardous materials by mail. USDOT regulations specify packaging requirements for different types of materials.
- **Federal Aviation Agency (FAA).** The FAA issues and enforces regulations covering manufacturing, operating, and maintaining aircrafts. The FAA also certifies airmen and airports (including helicopters) that serve air carriers and conducts research on and develops systems and procedures needed for a safe and efficient system of air navigation and air traffic control.

State Agencies

Responsible State agencies that regulate hazardous materials and waste in accordance with the federal and State laws include:

- **California Environmental Protection Agency (CalEPA).** CalEPA was created in 1991 by the Governor's Executive Order. Six boards, departments, and offices were placed under the CalEPA umbrella to create a cabinet-level voice for the protection of human health and the environment and to ensure the coordinated deployment of state resources. CalEPA oversees hazardous materials and hazardous waste compliance throughout California. Among those responsible for hazardous materials and waste management are the Department of Toxic Substances Control, the Department of Pesticide Regulation, and the Office of Environmental Health Hazard Assessment. CalEPA also oversees the unified hazardous waste and hazardous materials management regulatory program (Unified Program), which consolidates and coordinates:
  - Hazardous Materials Release Response Plans and Inventories (Business Plans)
  - Underground Storage Tank Program
  - Aboveground Petroleum Storage Tank Act
  - Hazardous Waste Generator and On-site Hazardous Waste Treatment Programs
  - California Uniform Fire Code: Hazardous Material Management Plans and Inventory Statements
  - California Accidental Release Prevention Program
- **California Department of Toxic Substances Control (DTSC).** DTSC is the department of CalEPA that carries out the RCRA and the Comprehensive Environmental Response, Compensation, and Liability Act programs in California to protect people from exposure to hazardous substances and waste. The department regulates hazardous waste, cleans up existing contamination, and looks for ways to control and reduce the hazardous waste produced in California primarily under the authority of RCRA and in accordance with the California Hazardous Waste Control Law (Health and Safety Code Division 20, Chapter 6.5) and the Hazardous Waste Control Regulations (California Code of Regulations, Title 22, Divisions 4 and 4.5). Permitting, inspection, compliance, and corrective action programs ensure that people who manage hazardous waste follow State and federal requirements and other laws that affect hazardous waste specific to

handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning.

- **California Department of Forestry and Fire Protection (CAL FIRE).** CAL FIRE is dedicated to the fire protection and stewardship of over 13 million acres of California's wildlands. The Office of the State Fire Marshal (OSFM) supports CAL FIRE's mission to protect life and property from wildfires through fire prevention engineering programs, law and code enforcements, and education. OSFM provides for fire prevention by enforcing fire-related laws in State-owned or operated buildings; investigating arson fires; licensing those who inspect and service fire protection systems; approving fireworks for use in California; regulating the use of chemical flame retardants; evaluating building materials against fire safety standards; regulating hazardous liquid pipelines; and tracking incident statistics for local and state government emergency response agencies. The California Fire Plan is the state's road map for reducing the risk of wildfires through planning and preservation to reduce firefighting costs and property losses, increase firefighter safety, and contribute to ecosystem health. The California Fire Plan is a cooperative effort between the State Board of Forestry and Fire Protection and CAL FIRE.
- **California Division of Occupational Safety and Health (Cal/OSHA).** Like OSHA at the federal level, Cal/OSHA is the responsible State agency for ensuring workplace safety. Cal/OSHA assumes primary responsibility for the adoption and enforcement of standards regarding workplace safety and safety practices. If a work site is contaminated, a site safety plan must be crafted and implemented to protect the safety of workers. Site safety plans establish policies, practices, and procedures to prevent the expose of workers and members of the public to hazardous materials originating from the contaminated site or building.
- **California Office of Emergency Services (Cal OES).** Cal OES was established as part of the Governor's Office on January 1, 2009. It was created pursuant to Assembly Bill 38, which merged the duties, powers, purposes, and responsibilities of the former Governor's Emergency Management Agency with those of the Governor's Office of Homeland Security. Cal OES is responsible for the coordination of overall State agency response to major disasters in support of local government. The agency is responsible for ensuring the State's readiness to respond to and recover from all hazards—natural, human-made, emergencies, and disasters—and for assisting local governments in their emergency preparedness, response, recovery, and hazard mitigation efforts.

- **California Department of Transportation (Caltrans) and California Highway Patrol (CHP).** Caltrans and the CHP are the two State agencies that have primary responsibility for enforcing federal and State regulations and responding to hazardous materials transportation emergencies. Caltrans manages more than 50,000 miles of California's highways and freeways, provides intercity rail services, permits more than 400 public-use airports and special-use hospital heliports, and works with local agencies. Caltrans is also the first responder for hazardous material spills and releases that occur on highways, freeways, and intercity rail lines. The CHP enforces hazardous materials and hazardous waste labeling and packing regulations designed to prevent leakage and spills of materials in transit and to provide detailed information to cleanup crews in the event of an accident. Vehicle and equipment inspection, shipment preparation, container identification, and shipping documentation are all part of the responsibility of the CHP, which conducts regular inspections of licensed transporters to ensure regulatory compliance.

  The State of California regulates the transportation of hazardous waste originating or passing through the state. Common carriers are licensed by the CHP, pursuant to Section 32000 of the California Vehicle Code. This section requires licensing every motor (common) carrier that transports, for a fee, in excess of 500 pounds of hazardous materials at one time, and every carrier, if not for hire, that carries more than 1,000 pounds of hazardous material of the type requiring placards. Common carriers conduct a large portion of the business in the delivery of hazardous materials.

- **State Water Resources Control Board (SWRCB).** In California, the SWRCB has broad authority over water quality control issues for the state. The SWRCB is responsible for developing statewide water quality policy and exercises the powers delegated to the State by the federal government under the Clean Water Act. SWRCB's Underground Storage Tank (UST) program protects the public health and safety, and the environment from releases of petroleum and other hazardous substances from USTs. The program elements include:
  - **Leak Prevention.** This program element includes requirements for tank installation, construction, testing, leak detection, spill containment, and overfill protection.
  - **Cleanup.** Cleanup of leaking tanks often involves a soil and groundwater investigation and remediation, under the direction of a regulatory agency.
  - **Enforcement.** The SWRCB aids local agencies enforcing UST requirements.

- **Tank Tester Licensing.** Tank integrity testing is required by law, must meet the requirements of the SWRCB, and must be conducted by State-licensed tank testers.

Regional Agencies

Responsible regional agencies that regulate hazardous materials and waste in accordance with the federal and State laws include:

- **Solano County Department of Resource Management.** The Certified Unified Program Agency (CUPA) for the City of Rio Vista is the Solano County Department of Resource Management, which is responsible for regulating hazardous waste and tiered permitting for USTs.

5.9.1.2 REGULATORY BACKGROUND

The following laws, regulations, and policies govern hazardous materials in the City of Rio Vista.

Comprehensive Environmental Response, Compensation and Liability Act and the Superfund Amendments and Reauthorization Act of 1986

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, commonly known as Superfund, established prohibitions and requirements concerning closed and abandoned hazardous waste sites, provided for liability of persons responsible for releases of hazardous waste at these sites, and established a trust fund to provide for cleanup when no responsible party could be identified. CERCLA was amended by the Superfund Amendments and Reauthorization Act (SARA) on October 17, 1986. SARA stressed the importance of permanent remedies and innovative treatment technologies in cleaning up hazardous waste sites, required Superfund actions to consider the standards and requirements found in other State and federal environmental laws and regulations, provided new enforcement authorities and settlement tools, increased State involvement in every phase of the Superfund program, increased the focus on human health problems posed by hazardous waste sites, encouraged greater citizen participation in site cleanup decisions, and increased the size of the trust fund to $8.5 billion. CERCLA also enabled the revision of the National Contingency Plan, which provided the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, or contaminants. The National Contingency Plan also established the National Priority List of Superfund sites.

Resource Conservation and Recovery Act of 1976, as amended by the Hazardous and Solid Waste Amendments of 1984

The RCRA of 1976 is the principal federal law enacted by Congress that regulates the generation, management, and transportation of waste. In general, the USEPA works to develop and enforce regulations that implement environmental laws enacted by Congress. The agency is responsible for researching and setting national standards for a variety of environmental programs and delegates to states and tribes the responsibility of issuing permits and for monitoring and enforcing compliance. USEPA programs promote handling hazardous waste safely, cleaning up contaminated land, and reducing trash. Hazardous waste management includes the treatment, storage, or disposal of hazardous waste. The RCRA gave the USEPA the authority to control hazardous waste from "cradle to grave," that is, from generation to transportation, treatment, storage, and disposal. The RCRA also set forth a framework for the management of nonhazardous waste. The 1986 amendments to RCRA enabled the USEPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. It should be noted that RCRA focuses only on active future facilities and does not address abandoned or historical sites.

Emergency Planning and Community Right-to-Know Act

In 1986, Congress passed the Superfund Amendments and Reauthorization Act. Title III of this regulation was the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA). EPCRA was enacted by Congress as the national legislation on community safety. This law helps local communities protect public health, safety, and the environment from chemical hazards in their areas by requiring businesses to report the locations and quantities of chemicals stored on-site to State and local agencies. These reports help communities prepare to respond to chemical spills and similar emergencies.

Section 313 of EPCRA requires manufacturers to report releases to the environment (air, soil, and water) of more than 600 designated toxic chemicals, report off-site transfers of waste for treatment or disposal at separate facilities, develop pollution prevention measures and activities, and participate in chemical recycling. These annual reports are submitted to the USEPA and State agencies. EPCRA Sections 301 through 312 are administered by the USEPA's Office of Emergency Management. The USEPA's Office of Information Analysis and Access implements the EPCRA Section 313 program. In California, SARA Title III is implemented through the California Accidental Release Prevention Program.

The USEPA maintains and publishes a database that contains information on toxic chemical releases and other waste management activities by certain industry groups and federal facilities. This online, publicly available, national digital database is called the Toxics Release Inventory and was expanded by the Pollution Prevention Act of 1990.

Under the EPCRA requirements, local emergency planning committees are responsible for developing a plan for preparing for and responding to a chemical emergency, including:

- An identification of local facilities and transportation routes where hazardous materials are present.
- The procedures for immediate response in case of an accident (this must include a community-wide evacuation plan).
- A plan for notifying the community that an incident has occurred.
- The names of response coordinators at local facilities.
- A plan for conducting drills to test the plan.

The emergency plan is reviewed by the State Emergency Response Commission and publicized throughout the community. The local emergency planning committee is required to review, test, and update the plan each year. The Solano County Environmental Health Services Division is responsible for coordinating hazardous material and disaster preparedness planning and appropriate response efforts with City departments and local and State agencies. The goal is to improve public- and private-sector readiness and to mitigate local impacts resulting from natural or human-made emergencies.

Disaster Mitigation Act of 2000

The Disaster Mitigation Act of 2000 requires State and local governments to prepare mitigation plans that identify hazards, potential losses, mitigation needs, goals, and strategies. It is intended to facilitate cooperation between State and local governments.

Toxic Substances Control Act

The Toxic Substances Control Act of 1976 was enacted by Congress to give the USEPA the ability to track the 75,000 industrial chemicals currently produced by or imported into the United States. The USEPA repeatedly screens these chemicals and can require reporting or testing of any that may pose an environmental or human health hazard. It can ban the manufacture and import of chemicals that pose an unreasonable risk. Also, the USEPA has mechanisms in place to track the thousands of new chemicals that industry develops each year with either unknown or dangerous characteristics. It then can control these chemicals as necessary to protect human health and the environment. The

act supplements other federal statutes, including the Clean Air Act and the Toxics Release Inventory under EPCRA.

Hazardous Materials Transportation Act

The USDOT regulates hazardous materials transportation under the Code of Federal Regulations (CFR) Title 49. State agencies that have primary responsibility for enforcing federal and State regulations and responding to hazardous materials transportation emergencies are the CHP and Caltrans. These agencies also govern permitting for hazardous materials transportation. Title 49 CFR reflects laws passed by Congress as of January 2, 2006.

Federal Response Plan

The Federal Response Plan of 1999 is a signed agreement among 27 federal departments and agencies and the American Red Cross that: (1) provides the mechanism for coordinating delivery of federal assistance and resources to augment efforts of State and local government overwhelmed by a major disaster or emergency; (2) supports implementation of the Robert T. Stafford Disaster Relief and Emergency Act, as well as individual agency statutory authorities; and (3) supplements other federal emergency operations plans developed to address specific hazards. The Federal Response Plan is implemented in anticipation of a significant event likely to result in a need for federal assistance or in response to an actual event requiring federal assistance under a presidential declaration of a major disaster or emergency.

Business Plan Act

Both the federal government and the State of California require all businesses that handle more than a specified amount of hazardous waste materials or extremely hazardous materials—termed a reporting quantity—to submit a hazardous materials business plan to the local CUPA.

Such a plan must be submitted by businesses that handle hazardous materials or a mixture containing a hazardous material in quantities equal to or greater than:

- 500 pounds of a solid
- 55 gallons of a liquid
- 200 cubic feet of a compressed gas standard temperature and pressure
- The federal Threshold Planning Quantity for Extremely Hazardous Substances
- Radioactive materials in quantities for which an emergency plan is required per Parts 30, 40, or 70 of the CFR, Title 10, Chapter 1

The business plan must include the type and quantity of hazardous materials, a site map, risks of using these materials, spill prevention, emergency response, employee training, and emergency contacts.

Federal Aviation Agency Advisory Circular 150/5390-2C

FAA Advisory Circular 150/5390-2C provides recommendations for heliport design, including heliports serving helicopters with single and tandem (front and rear) rotors.

Asbestos-Containing Materials Regulations

State agencies, in conjunction with the USEPA and OSHA, regulate removal, abatement, and transport procedures for asbestos-containing materials. Releases of asbestos from industrial, demolition, or construction activities are prohibited by these regulations; medical evaluation and monitoring are required for employees performing activities that could expose them to asbestos. The regulations include warnings and practices that must be followed to reduce the risk for asbestos emissions and exposure. Finally, federal, State, and local agencies must be notified prior to the onset of demolition or construction activities with the potential to release asbestos. Requirements for limiting asbestos emissions from building demolition and renovation activities are specified in the South Coast Air Quality Management District's Rule 1403 (Asbestos Emissions from Demolition/Renovation Activities). California Government Code Sections 1529 and 1532.1 provide for exposure limits, exposure monitoring, respiratory protection, and good working practice by workers exposed to lead and asbestos-containing materials.

State

California Health and Safety Code and Code of Regulations

The Hazardous Substances Account Act (California Health and Safety Code Sections 25300 et seq.) authorizes the State to clean up hazardous materials release sites—including abandoned sites—not qualifying for cleanup under CERCLA; provides funds to pay for the State's share of costs of CERCLA cleanups; and provides compensation to persons injured by hazardous materials releases.

California Health and Safety Code Chapter 6.95 and California Code of Regulations (CCR), Title 19, Section 2729 describe the minimum requirements for business emergency plans and chemical inventory reporting. These regulations require businesses to provide emergency response plans and procedures, training program information, and a hazardous material inventory disclosing hazardous materials stored, used, or handled

on-site. A business that uses hazardous materials, or mixtures containing them, in certain quantities must establish and implement a business plan.

CCR Title 8 Section 5191, *Occupational Exposure to Hazardous Chemicals in Laboratories*, requires that all laboratories have a written chemical hygiene plan as a fundamental chemical safety plan for the laboratory. The chemical hygiene plans are written programs that set forth procedures, equipment, personal protective equipment, and work practices that are capable of protecting employees from the health hazards presented by hazardous chemicals used in laboratories.

Tanner Act (Assembly Bill 2948)

Although numerous State policies deal with hazardous waste, the most comprehensive is the Tanner Act (Assembly Bill 2948), which was adopted in 1986. The Tanner Act governs the preparation of hazardous waste management plans and the siting of hazardous waste facilities in California. To be in compliance with the Tanner Act, local or regional hazardous waste management plans need to include provisions that define: (1) the planning process for waste management, (2) the permit process for new and expanded facilities, and (3) the appeals process to the State available for certain local decisions.

California Building Code

The State of California provided a minimum standard for building design through the California Building Code (CBC), which is in Title 24 CCR Part 2. The CBC is based on the International Building Code, modified for California conditions. It is generally adopted on a jurisdiction-by-jurisdiction basis, subject to further modification based on local conditions. Buildings are plan-checked by City and County building officials for compliance with the CBC.

State Hazardous Waste Management Programs

Numerous State programs regulate hazardous waste management.

Underground Storage Tank Program

Releases of petroleum and other products from USTs are the leading source of groundwater contamination in the United States. The RCRA Subtitle I establishes regulations governing the storage of petroleum products and hazardous substances in USTs and the prevention and cleanup of leaks. In USEPA Region 9 (California, Arizona, Hawaii, Nevada, Pacific Islands, and over 140 tribal nations), the UST program operates primarily through State agency programs with USEPA oversight. In California, the

SWRCB, under the umbrella of CalEPA, provides assistance to local agencies enforcing UST requirements. The purpose of the UST program is to protect public health and safety and the environment from releases of petroleum and other hazardous substances. The program consists of four elements: leak prevention, cleanup, enforcement, and tank tester licensing. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for groundwater cleanup programs, including groundwater analytical data, the surveyed locations of monitoring wells, and other data. The SWRCB's GeoTracker system currently has information submitted by responsible parties for over 10,000 leaking UST (LUST) sites statewide and has been extended to include all SWRCB groundwater cleanup programs, including the LUST, non-LUST (Spill, Leaks, Investigation, and Cleanup), Department of Defense, and landfill programs.

California Code of Regulations, Title 22, Division 4.5

CCR Title 22, Division 4.5, sets forth the requirements for hazardous-waste generators; transporters; and owners or operators of treatment, storage, or disposal facilities. These regulations include the requirements for packaging, storage, labeling, reporting, and general management of hazardous waste prior to shipment. In addition, the regulations identify standards applicable to transporters of hazardous waste. These regulations specify the requirements for transporting shipments of hazardous waste, including manifesting, vehicle registration, and emergency accidental discharges during transportation.

Hazardous Materials Disclosure Programs

Both the federal and State governments require all businesses that handle more than a specified amount of hazardous materials or extremely hazardous materials, termed a reporting quantity, to submit a hazardous materials emergency/contingency plan (also known as a hazardous materials business plan) to their local CUPA (CFR, USEPA, SARA, and Title III) (Health and Safety Code, Division 20, Chapter 6.95, Sections 2500-25520; 19 CCR, Chapter 2, Subchapter 3, Article 4, Sections 2729-2734). The responsible CUPA in Solano County is the Solano County Department of Resource Management, which is responsible for conducting compliance inspections of regulated facilities in Rio Vista.

Hazardous Materials Business Plans

The hazardous materials business plan includes the business owner/operator identification page, hazardous materials inventory chemical description page, and an emergency response plan and training plan. Business plans must include an inventory of the hazardous materials at the facility. The entire hazardous materials business plan needs to be reviewed and recertified every three years. Business plans are required to

include emergency response plans and procedures to be used in the event of a significant or threatened significant release of a hazardous material. These plans need to identify the procedures to follow for immediate notification to all appropriate agencies and personnel of a release, identification of local emergency medical assistance appropriate for potential accident scenarios, contact information for all emergency coordinators of the business, a listing and location of emergency equipment at the business, an evacuation plan, and a training program for business personnel. All facilities must keep a copy of their plan on-site.

Hazardous materials business plans are designed to be used for responding agencies, such as the City of Rio Vista Fire Department, during a release or spill to allow for a quick and accurate evaluation of each situation for appropriate response. Businesses that handle hazardous materials are required by law to provide an immediate verbal report of any release or threatened release of hazardous materials if there is a reasonable belief that the release or threatened release of hazardous materials poses a significant present or potential hazard to human health and safety, property, or the environment. If a release involves a hazardous substance listed in Title 40 of the CFR in an amount equal to or exceeding the reportable quantity for that material, a notice must be filed with the California Office of Emergency Services within 15 days of the incident. Both the federal government (CFR) and the State of California (California Health and Safety Code) require all businesses that handle more than a specified amount—or “reporting quantity”—of hazardous or extremely hazardous materials to submit a hazardous materials business plan to the Solano County Environmental Health Services Division. According to City guidelines, the preparation, submittal, and implementation of a business plan is required by any business that handles a hazardous material or a mixture containing a hazardous material in specified quantities.

Business plans must include an inventory of the hazardous materials at the facility. Businesses must update their business plan and the chemical portion annually. Also, business plans must include emergency response plans and procedures to be used in the event of a significant or threatened significant release of a hazardous material. These plans need to identify the procedures for immediate notification of all appropriate agencies and personnel, identification of local emergency medical assistance appropriate for potential accident scenarios, contact information for all company emergency coordinators, a listing and location of emergency equipment at the business, an evacuation plan, and a training program for business personnel.

Hazardous Materials Incident Response

Under Title III of SARA, the Local Emergency Planning Committee (LEPC) is responsible for developing an emergency plan preparing for and responding to chemical emergencies in that community. The State Emergency Response Commission (SERC) established six emergency planning districts. The SERC appointed a LEPC for each planning district and supervises and coordinates their activities.

The emergency plan developed by the LEPCs must include:

- An identification of local facilities and transportation routes where hazardous materials are present.
- The procedures for immediate response in case of an accident (this must include a community-wide evacuation plan).
- A plan for notifying the community that an incident has occurred.
- The names of response coordinators at local facilities.
- A plan for conducting exercises to test the plan.

The plan is reviewed by the SERC and publicized throughout the community. The LEPC is required to review, test, and update the plan each year.

Hazardous Materials Spill/Release Notification Guidance

All significant spills, releases, or threatened releases of hazardous materials must be immediately reported. Federal and State emergency notifications are required for all significant releases of hazardous materials. Requirements for immediate notification of all significant spills or threatened releases cover owners, operators, persons in charge, and employers. Notification is required regarding significant releases from facilities, vehicles, vessels, pipelines, and railroads. The following State statutes require emergency notification of a hazardous chemical release:

- Health and Safety Codes, Sections 25270.7, 25270.8, and 25507
- Vehicle Code, Section 23112.5
- Public Utilities Code, Section 7673 (PUC General Orders #22-b, 161)
- Government Code, Sections 51018, 8670.25.5(a)
- Water Code, Sections 13271, 13272
- California Labor Code, Section 6409.1(b)10

In addition, all releases that result in injuries or workers harmfully exposed must be immediately reported to California OSHA (California Labor Code, Section 6409.1[b]). Additional reporting requirements are in the Safe Drinking Water and Toxic Enforcement

Act of 1986, better known as Proposition 65, and Section 9030 of the California Labor Code.

Requirements for immediate notification of all significant spills or threatened releases cover owners, operators, persons in charge, and employers. Notification is required regarding significant releases from facilities, vehicles vessels, pipelines, and railroads. In addition, all releases that result in injuries or harmful exposure to workers must be immediately reported to the California OSHA pursuant to the California Labor Code Section 6409.1(b).

California Accidental Release Prevention Program

The California Accidental Release Prevention Program (CalARP) became effective on January 1, 1997, in response to Senate Bill 1889. CalARP replaced the California Risk Management and Prevention Program. Under CalARP, the Governor's Office of Emergency Services must adopt implementing regulations and seek delegation of the program from the USEPA. CalARP aims to be proactive and therefore requires businesses to prepare risk management plans, which are detailed engineering analyses of the potential accident factors present at a business and the migration measures that can be implemented to reduce this accident potential. In most cases, local governments will have the lead role for working directly with businesses in this program. The Solano County Environmental Health Services Division is the CUPA designated as the administering agency for CalARP.

California Fire Code

The California Fire Code (24 CCR Part 9) sets forth requirements including those for building materials and methods pertaining to fire safety and life safety, fire protection systems in buildings, emergency access to buildings, and handling and storage of hazardous materials. The City adopts the update to the fire code every three years.

California Building Code

The CBC requires the installation and maintenance of smoke alarms in residential dwelling units:

- **CCR Title 24, Part 2, Section 907.2.11.2.** Smoke alarms shall be installed and maintained on the ceiling or wall outside of each separate sleeping area in the immediate vicinity of bedrooms. In each room used for sleeping purposes, and in each story within a dwelling unit. The smoke alarms shall be interconnected.

Government Code Section 65302

Government Code Section 65302 requires the Safety Element of a General Plan to address evacuation routes. The CAL FIRE Safety Element checklist also requires cities to address evacuation routes. In addition, Senate Bill 99 (2018) requires a Safety Element, upon the next revision of the Housing Element on or after January 1, 2020, to include information identifying residential developments in hazard areas that do not have at least two emergency evacuation routes.

Regional

Hazardous Materials Business Plan

The Hazardous Materials Business Plan (HMBP) is administered by the Solano County Environmental Health Services Division, which is the certified CUPA. The HMBP requires businesses with hazardous materials in their premises to report the quantity of materials on site to prepare an emergency response plan to address potential incidents. All businesses including farms, federal agencies, State agencies, and local agencies that handle quantities of hazardous materials must complete a HMBP (Solano County 2025).

Travis Air Force Base Land Use Compatibility Plan

The Travis Air Force Base Land Use Compatibility Plan (LUCP) was adopted in October 2015. The Travis Air Force Base LUCP sets forth land use compatibility policies applicable to future development in the vicinity of the base. The policies are designed to ensure that future land uses in the surrounding area will be compatible with the realistically foreseeable, ultimate potential aircraft activity at the base. The compatibility criteria defined by the policies are also intended to be reflected in the general plans and other policy instruments adopted by the entities having jurisdiction over land uses near Travis AFB.

Rio Vista Airport Land Use Compatibility Plan

The Rio Vista Airport Land Use Compatibility Plan (ALUCP) was adopted in May 2018. The Rio Vista ALUCP updates land use compatibility policies for future development near the airport. These policies aim to ensure land uses remain compatible with the airport's forecast aircraft activity. Adopted by the Solano County Airport Land Use Commission, these policies serve as a foundation for reviewing land use development in accordance with California's State Aeronautics Act. The compatibility criteria are also reflected in general plans and policy instruments adopted by Solano County and the City of Rio Vista,

who are responsible for overseeing land use in the area around the airport (SCALUC 2018).

Solano County Multi-Jurisdictional Hazard Mitigation Plan

In collaboration with the City and other local agencies and special districts, the County of Solano prepared the 2022 Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) in accordance with the federal Disaster Mitigation Act of 2000 and the Federal Emergency Management Agency's (FEMA) hazard mitigation assistance guidance. The mitigation actions in the MJHMP include both short-term and long-term strategies and involve planning, policy changes, programs, projects, and other activities. These mitigation actions are identified based on assessments of hazards, vulnerabilities, and risks and the participation of a wide range of stakeholders and the public in the planning process.

The MJHMP includes a dedicated annex for Rio Vista, which discusses additional information specific to the City of Rio Vista, with a focus on providing additional details on the planning process, risk assessment, and mitigation strategy for the city. The 2022 MJHMP, approved by FEMA in December 2021 and adopted by the City Council in March 2022, is incorporated into the Safety Element by reference, as permitted by California Government Code Section 65302.6 (Solano County 2022).

Local

Household Hazardous Waste Program

Household hazardous wastes are household chemicals that are prohibited by law to be thrown into the trash, such as pesticides and household cleaning supplies. Many common products used daily contain hazardous ingredients and are required to be disposed of carefully. The city holds two events each year for residents to be able to dispose of their household hazardous waste carefully (City of Rio Vista 2023).

City of Rio Vista 2001 General Plan

The existing General Plan contains the Safety and Noise Element and the Public Facilities and Services Element, which include the following policies related to hazardous materials and wildfire:

Safety and Noise Element

- Policy 11.1.D: Development projects shall comply with state seismic and building standards in the design and siting of critical facilities, including police and fire stations, school including police and fire stations, school

facilities, hazardous material storage facilities, bridges, and large public assembly halls.

- Policy 11.5.A The City shall continue to pursue fire prevention programs and standards.
- Policy 11.5.C The City shall require that the timing of construction of fire stations be phased to be ready to serve development as it occurs.
- Policy 11.11.A The City shall require that development projects in the vicinity of the Rio Vista Airport consider all applicable safety policies, City standards, and land use compatibility guidelines.
- Policy 11.5.D The City shall monitor fire department service levels annually concurrent with the City budget process.
- Policy 11.6.A: The City shall require the disclosure of the use and storage of hazardous materials in existing and proposed industrial and commercial activities, and the siting of hazardous waste disposal facilities, in accordance with Solano County guidelines and State law.
- Policy 11.6.B: The City shall establish a hazardous materials truck route through the City.
- Policy 11.6.E The City shall ensure that it maintains sufficient resources, contacts, and personnel to provide the public with emergency notification in the event of a hazard agency notification in the event of a hazardous materials spill or airborne release.

Public Facilities and Services Element

- Policy 12.9.A The City shall operate the airport in a safe and cost-effective manner, consistent with the needs of the public and Federal Aviation Authority regulations.

City of Rio Vista Municipal Code

Chapter 2.32 – Emergency Services System

This chapter states the preparation and execution of plans for the protection of persons and property within the city in the event of an emergency; and the coordination of the emergency functions of the city with all other public agencies, corporations, organizations, and affected private persons.

Chapter 8.20.010 – Adoption of the 2022 California Fire Code

This section states that the City has adopted the latest California Fire Code and standards are hereby incorporated as fully as if set out at length herein, unamended, and collectively shall be known as the fire code of the City of Rio Vista.

Chapter 8.24 – Weed and Rubbish Abatement

The chapter states that all weeds growing on private property or streets and all rubbish on private property or streets in the city are public nuisances, except for properties being exclusively or primarily used for agricultural purposes are excluded. This chapter also states that it is the duty of every such person to remove or destroy such weeds and/or rubbish.

5.9.1.3 EXISTING CONDITIONS

Hazardous Materials

Hazardous materials include, but are not limited to, hazardous substances, hazardous waste, and any material that a business or implementing agency has a reasonable basis for believing would be injurious to public health and safety or harmful to the environment if released into the workplace or the environment. Hazardous wastes are hazardous substances that no longer have practical use, such as materials that have been discarded, discharged, spilled, or contaminated or are being stored until they can be disposed of properly (22 CCR Chapter 11, Article 2, Section 66261.10). Soil that is excavated from a site containing hazardous materials is a hazardous waste if it exceeds specific CCR Title 22 criteria.

Past industrial or commercial activities on a site could have resulted in spills or leaks of hazardous materials to the ground, resulting in soil and/or groundwater contamination. Hazardous materials may also be present in building materials of older structures and released during building demolition activities. If improperly handled, hazardous materials and waste can cause public health hazards when released to the soil, groundwater, or air. The four basic exposure pathways through which an individual can be exposed to a chemical agent include inhalation, ingestion, bodily contact, and injection. Exposure can result from an accidental release during transportation, storage, or handling of hazardous materials. Disturbance of subsurface soil during construction can also lead to exposure of workers or the public from stockpiling, handling, or transportation of soils contaminated by hazardous materials or waste from previous spills or leaks.

Hazardous Waste Generators

The USEPA regulates generators of hazardous waste based on the amount of waste generated. Large-quantity generators produce 1,000 kilograms or more per month, or more than one kilogram per month of acutely hazardous waste. Small-quantity generators produce between 100 and 1,000 kilograms of hazardous waste per month.

Hazardous Materials Sites

California Government Code Section 65962.5 directs CalEPA to compile, maintain, and update specified lists of hazardous material release sites. The California Environmental Quality Act (CEQA; California Public Resources Code Section 21092.6) requires the lead agency to consult the lists compiled pursuant to Government Code Section 65962.5 to determine whether the project and any alternatives are identified on any of the following lists:

- **USEPA National Priorities List (NPL).** The USEPA's NPL includes all sites under the USEPA's Superfund program, which was established to fund cleanup of contaminated sites that pose risks to human health and the environment.
- **USEPA Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) and Archived Sites.** The USEPA's CERCLIS includes a list of 15,000 sites nationally identified as hazardous sites. This would also involve a review for archived sites that have been removed from CERCLIS due to No Further Remedial Action Planned status.
- **USEPA RCRIS (RCRA Info).** The Resource Conservation and Recovery Act Information System (RCRIS or RCRA Info) is a national inventory system about hazardous waste handlers. Generators, transporters, handlers, and disposers of hazardous waste are required to provide information for this database.
- **DTSC Cortese List.** DTSC maintains the Hazardous Waste and Substances Sites (Cortese) list as a planning document for use by the State and local agencies to comply with CEQA requirements by providing information about the location of hazardous materials release sites. This list includes the Site Mitigation and Brownfields Reuse Program Database.
- **DTSC HazNet.** DTSC uses this database to track hazardous waste shipments.
- **SWRCB LUSTIS.** Through the Leaking Underground Storage Tank Information System (LUSTIS), SWRCB maintains an inventory of USTs and LUSTs, which tracks unauthorized releases.

The required lists of hazardous material release sites summarized above are commonly and collectively referred to as the "Cortese List," named after the legislator who authored the legislation. Because the statute was enacted more than 20 years ago, some of the provisions refer to agency activities that were conducted many years ago and are no longer being implemented and, in some cases, the information required in the Cortese List does not exist. Those requesting a copy of the Cortese Lists are now referred directly to the appropriate information resources on websites hosted by the boards or departments referenced in the statute, including DTSC's online EnviroStor database and the SWRCB's online GeoTracker database. These two databases include hazardous material release sites, along with other categories of sites or facilities specific to each agency's jurisdiction.

A search of the online EnviroStor[1] and GeoTracker databases on June 17, 2024, identified 49 hazardous materials sites within the City of Rio Vista, as shown in Table 5.9-1, *Hazardous Materials Sites in the City of Rio Vista* (SWRCB 2023; DTSC 2023a). Of the 49 sites, 7 are designated as "active," "open," or "require further review," and the remaining 42 sites are designated as "closed," "completed – case closed," "no action required," or "no further action." Properties on this list are precluded from using a categorical or statutory exemption from CEQA, even if the case is "closed," pursuant to Section 15300.2 of the CEQA Guidelines.

Hazardous Materials Transport

In California, transporting hazardous waste is illegal unless a valid registration is held by DTSC valid for one year and assigned a unique number. Paul Graham Drilling and Service Company is a registered active transporter at 2500 Airport Road (DTSC 2023b).

1 Envirostor is DTSC's online data management system for tracking our cleanup, permitting, enforcement, and investigation efforts at hazardous waste facilities and sites with known or suspected contamination issues.

5. Environmental Analysis
HAZARDS AND HAZARDOUS MATERIALS

Table 5.9-1 Hazardous Materials Sites in the City of Rio Vista

Site Name	Address/Location	Site Type	Cleanup Status
EnviroStor Sites			
PG&E Serpa Junction Compression Station	1.5 Miles Northwest of Rio Vista	Evaluation	Refer: RWQCB
Rio Vista Army Reserve Center	900 Beach Ave	State Response	Certified
GeoTracker Sites			
933 Airport Road	933 Airport Rd	Cleanup Program Site	Open – Site Assessment
Asta Construction Inc.	1090 St. Francis Way	Lust Cleanup Site	Completed – Case Closed
Asta Construction Yard	243 Front St	Lust Cleanup Site	Completed – Case Closed
Asta Sand Pit	Airport Road	Cleanup Program Site	Completed – Case Closed
Ba-Rio Vista	230 Main Steet	Lust Cleanup Site	Completed – Case Closed
Bank of America (Former)	230 Main Street	Cleanup Program Site	Completed – Case Closed
Blackwelders	101 Blackwelder Dr	Lust Cleanup Site	Completed – Case Closed
Bulk Plant	265 Front St N	Lust Cleanup Site	Completed – Case Closed
Castle Minerals	45 Main Street	Lust Cleanup Site	Completed – Case Closed
Chevron – Rio Vista	33 North Front St	Cleanup Program Site	Open – Verification Monitoring
D&D Wholesale Tires	409 Hwy 12	Lust Cleanup Site	Completed – Case Closed
Delta Marina	100 Marina Drive	Lust Cleanup Site	Completed – Case Closed
Dolk Tractor Company	242 Front N	Lust Cleanup Site	Completed – Case Closed
First Generation Tank System	84 Main St	Lust Cleanup Site	Completed – Case Closed
Fisher Brothers	550 River Rd	Lust Cleanup Site	Completed – Case Closed
Food & Liquor #89	1009 Hwy 12	Lust Cleanup Site	Completed – Case Closed
Hap's Bait Shop – 2nd Generation Tank System	84 Main St	Lust Cleanup Site	Completed – Case Closed
Kofod Trucking	200 Front St	Lust Cleanup Site	Completed – Case Closed
Mobil 99-319 (Delta Deli), Former	659 Hwy 12	Lust Cleanup Site	Completed – Case Closed
Moreno Trenching, Ltd	210 Hwy 12	Lust Cleanup Site	Completed – Case Closed

Table 5.9-1 Hazardous Materials Sites in the City of Rio Vista

Site Name	Address/Location	Site Type	Cleanup Status
Outrigger Marina	17641 Sherman Island Rd	Lust Cleanup Site	Completed – Case Closed
Perry Anderson Ranch	Emigh & Montezuma Hills Rd	Lust Cleanup Site	Completed – Case Closed
PG&E Compressor K-19	Highway 12	Cleanup Program Site	Completed – Case Closed
PG&E Drouin Compressor	3rd Street	Cleanup Program Site	Completed – Case Closed
PG&E Marks Compressor Station	Church Rd	Cleanup Program Site	Completed – Case Closed
PG&E Pipeline #195 Leak	1 Mi. E Of Hw160 And ¼ Mi. S Of Hw12	Cleanup Program Site	Completed – Case Closed
PG&E Rio Vista L-182 Dehydrator Station	Emigh Rd (3 Miles West Of Rio Vista)	Cleanup Program Site	Completed – Case Closed
PG&E Rio Vista Master Meter	Highway 12	Cleanup Program Site	Completed – Case Closed
PG&E Rio Vista Town Station	Montezuma Hills Rd	Cleanup Program Site	Completed – Case Closed
PG&E Serpa Junction	Amerada Road	Cleanup Program Site	Completed – Case Closed
Rio Vista Army Reserve Training Area – Army Reserve Training Area	900 Beach Dr	Military Ust Site	Completed – Case Closed
Rio Vista Army Reserve Training Area – Rio Vista Army Reserve Training Area	Beach Drive	Military Cleanup Site	Completed – Case Closed
Rio Vista Army Reserve Training Area – Rio Vista Army Reserve Training Area – Pcb	Beach Drive	Military Cleanup Site	Completed – Case Closed
Rio Vista Army Reserve Training Area – Rio Vista Army Reserve Training Area – Rmvl1	Beach Drive	Military Cleanup Site	Completed – Case Closed
Rio Vista Army Reserve Training Area – Rio Vista Army Reserve Training Area – Test Ou	Beach Drive	Military Cleanup Site	Completed – Case Closed
Rio Vista Chevron	300 Hwy 12	Lust Cleanup Site	Completed – Case Closed
Rio Vista High Bus Garage	410 7th St and Bruning	Lust Cleanup Site	Completed – Case Closed
Rio Vista Maintenance Station	480 Hwy 12	Lust Cleanup Site	Completed – Case Closed
Rio Vista Service Center	410 Hwy 12	Lust Cleanup Site	Completed – Case Closed

5. Environmental Analysis
HAZARDS AND HAZARDOUS MATERIALS

Table 5.9-1 Hazardous Materials Sites in the City of Rio Vista

Site Name	Address/Location	Site Type	Cleanup Status
Rio Vista Shell	419 Hwy 12	Lust Cleanup Site	Completed – Case Closed
Suisun 15	Unknown	Cleanup Program Site	Completed – Case Closed
The Gorden Hanson Company, Ltd	135 North Front Street	Lust Cleanup Site	Open – Assessment & Interim Remedial Action
The Trap	660 Hwy 12	Lust Cleanup Site	Open – Remediation
Toms Union 76, Former	510 Hwy 12	Lust Cleanup Site	Completed – Case Closed
Trilogy – Park Site	Brockton Place	Cleanup Program Site	Completed – Case Closed
Voice of America	Flannery Rd	Lust Cleanup Site	Completed – Case Closed

Sources: SWRCB 2023; DTSC 2023a.

Potential Hazardous Building Materials

Some buildings in the city were built before the 1970s; based on the ages of these buildings, there is a potential for building materials to contain asbestos or lead-based paint (LBP). A potential release of hazardous materials could occur when ACM or LBP are disturbed during renovation or demolition activities. This disturbance could be harmful to human health. Typical hazardous materials of concern for existing older structures in the city include the following:

- **Asbestos** is a mineral fiber that is carcinogenic and harmful to respiratory health. Because of its fiber strength and heat resistance, it was widely used in a variety of building construction materials for insulation and as a fire-retardant, as well as in friction and heat-resistant products. Use of asbestos in the manufacturing of these products was common throughout California, until 1977, when it was banned. Older buildings constructed prior to 1978 could contain ACM. Asbestos can be released when ACMs are disturbed by cutting, sanding, drilling, or other remodeling activities. Improper attempts to remove these materials can release asbestos fibers into the air, increasing asbestos levels and affecting indoor air quality.
- **Lead** is a recognized harmful environmental pollutant that can pose a hazard when exposed through air, drinking water, food, contaminated soil, deteriorating paint, and dust. Lead was widely used in paint, gasoline, water pipes, and many other products prior to documentation of its health hazards. The use of LBP was banned in California in 1978, and therefore, buildings constructed prior to 1978 could contain LBP. If LBP is improperly removed from surfaces by dry scraping or sanding, LBP can be inhaled or otherwise absorbed into the body and could pose a potential public health risk.
- **Mold** can impair indoor air quality. The presence of visible water damage, damp materials, visible mold, or mold odor in buildings increases the potential risks of respiratory disease of occupants. According to the California Department of Public Health, known health risks include the development of asthma, allergies, and respiratory infections, the triggering of asthma attacks, and increased wheezing, coughing, difficulty breathing, and other symptoms.
- **Polychlorinated Biphenyls (PCBs)** are synthetic chemicals that were manufactured for use in various industrial and commercial applications—including oil in electrical and hydraulic equipment, and plasticizers in paints, plastics, and rubber products—because of their non-flammability, chemical stability, high boiling point, and electrical insulation properties. When released into the environment,

PCBs persist for many years and bioaccumulate in organisms. The USEPA has classified PCBs as probable human carcinogens. In 1979, the USEPA banned the use of PCBs in most new electrical equipment and began a program to phase out certain existing PCB-containing equipment.

- **Radon** is a naturally occurring odorless, tasteless, and invisible gas produced from the decay of uranium in soil and water. Structures placed on native soils with elevated levels of radon can be impacted by the intrusion of radon gas into breathing spaces of the overlying structures, which can cause lung cancer. Solano County is listed as a Zone 3 county, which predicts an average indoor radon screening level of less than 2 pCi/L, which is within the recommended levels assigned by the EPA (USEPA 2014).

Schools

As described in Section 5.3, *Air Quality*, of this Draft EIR, some land uses are considered more sensitive to airborne hazardous materials than others due to the types of population groups or activities involved. Because sensitive population groups include children, CEQA requires an evaluation of hazardous emissions or handling hazardous materials, substances, or waste within 0.25 miles of an existing or proposed school (private or public).

There are currently three existing public schools in the City of Rio Vista: D.H. White Elementary School, Riverview Middle School, and Rio Vista High School.

Pipelines

Pipelines of concern carry hazardous liquids and/or gases that can be harmful to life and property. According to the National Pipeline Mapping System, The City of Rio Vista contains gas transmission pipelines; however, there are no hazardous liquid pipelines within the city (USDOT 2023).

Airports

Airport operations and their accompanying safety hazards require careful land use planning on adjacent and nearby lands to protect the residential and business communities from the potential hazards that could be created by airport operations. There is one airport within the City of Rio Vista, the Rio Vista Municipal Airport. The Travis Air Force Base (AFB) is outside of the City of Rio Vista, approximately 15 miles to the northwest.

The Solano County Airport Land Use Commission (ALUC) is the agency in Solano County empowered by State law to prepare the airport land use compatibility plan (ALUCP) for airports and heliports in the county, including the Rio Vista Municipal Airport and the Travis AFB. The Solano County ALUC oversees orderly development of airports and adoption of land use measures that minimize public exposure to excessive noise and safety hazards in areas around public airports, to the extent that these areas are not already devoted to incompatible uses.

The Airport Influence Area (AIA) for Travis AFB encompasses the entirety of Solano County; therefore, the Rio Vista AIA is within the AIA of Travis AFB. Specifically, the AIA for Rio Vista Airport is entirely within Compatibility Zone D of the Travis AFB AIA. In cases where the AIAs of two airports overlap, both compatibility plans apply. Figure 5.9-1, *Rio Vista Municipal Airport and Travis Air Force Base Airport Influence Areas,* shows the AIAs for both airports.

Travis Air Force Base

Travis AFB occupies approximately 7,100 acres of land, with two 11,000-foot runways oriented along the northeast-southwest diagonal away from existing housing developments. The Area of Influence is made up of Compatibility Zones A, B1, B2, C, and D. Rio Vista Municipal Airport and its immediate surroundings are located within Compatibility Zone D of Travis AFB's Land Use Compatibility Plan, which requires the following:

- ALUC review for all new objects greater than 200 feet aboveground level in height;
- ALUC review that entails a Solar Glare Hazard Analysis Tool glint and glare study for all new or expanded commercial-scale solar facilities.
- ALUC review involving appropriate line-of-sight standards for all proposed wind turbine facilities.
- Apart from these restrictions, there are no density or intensity limits, although large stadiums and similar uses should be avoided.

It is understood that the Rio Vista Municipal Airport features additional restrictions for development because of its location within the Travis AFB compatibility zones. While tall noncompliant structures would not be permitted within the existing and proposed (if adopted) Rio Vista Airport compatibility zones, all future development projects in the area would be required to adhere to both the less restrictive Travis AFB compatibility zones within Rio Vista and the Rio Vista Airport safety zones, of which a range of restrictions exist. Review would occur through the same agency, the Solano County ALUC. As a

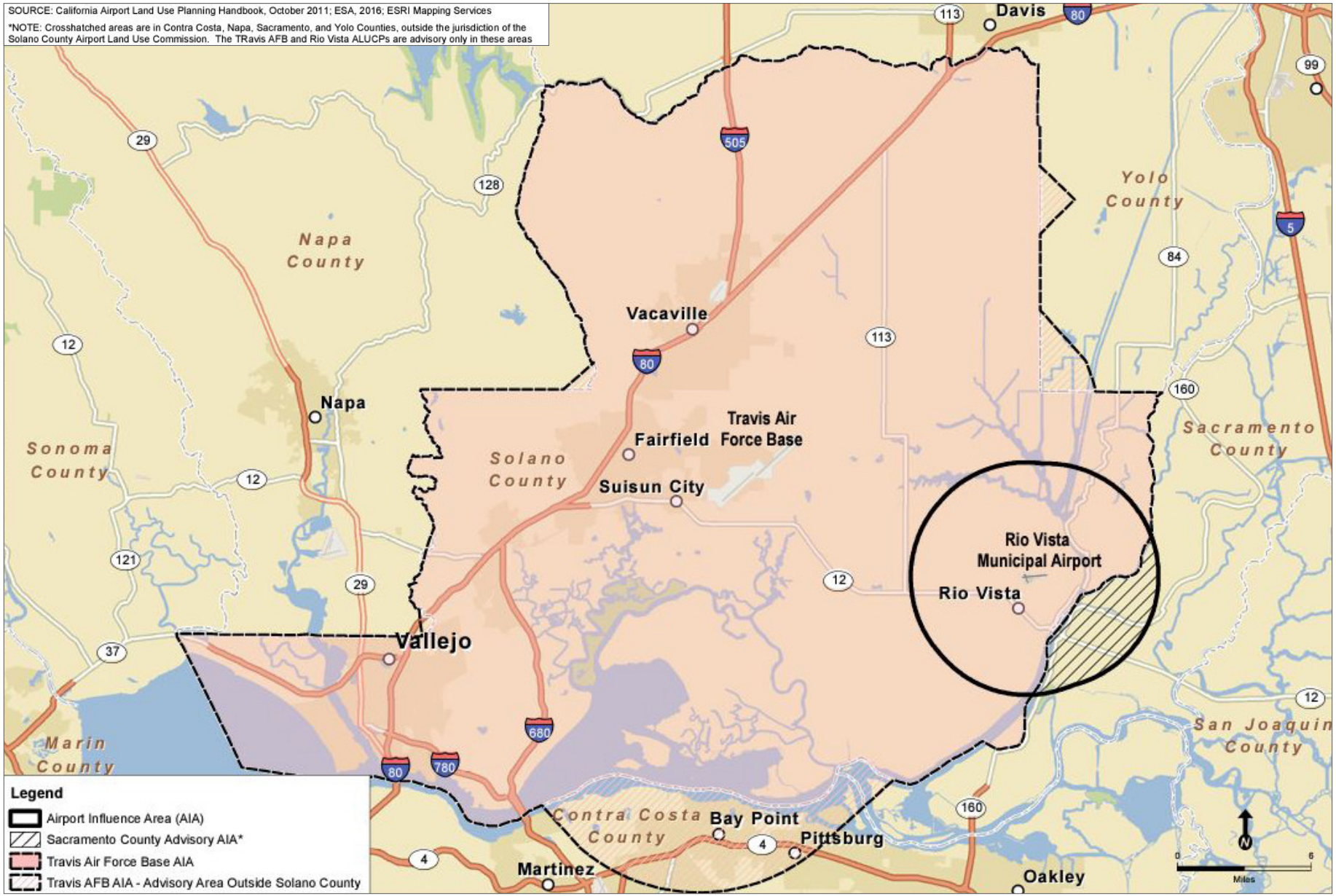
result, while there is some interaction between the Airport and the Travis Air Force Base LUCP compatibility zones, there are no conflicts with the requirements already established in the Rio Vista ALUCP.

Rio Vista Municipal Airport

The Rio Vista Municipal Airport is on the northern boundary of the City of Rio Vista and covers 273 acres of land. The Rio Vista Airport Influence Area (AIA) consists of portions of Solano County and the City of Rio Vista that surround the airport, and encompasses Safety Zones 1 through 6. Figure 5.9-2, *Rio Vista Airport Municipal Airport Safety Zones,* shows the location of the Rio Vista Airport as well as the safety zones for the airport.

Safety Zones

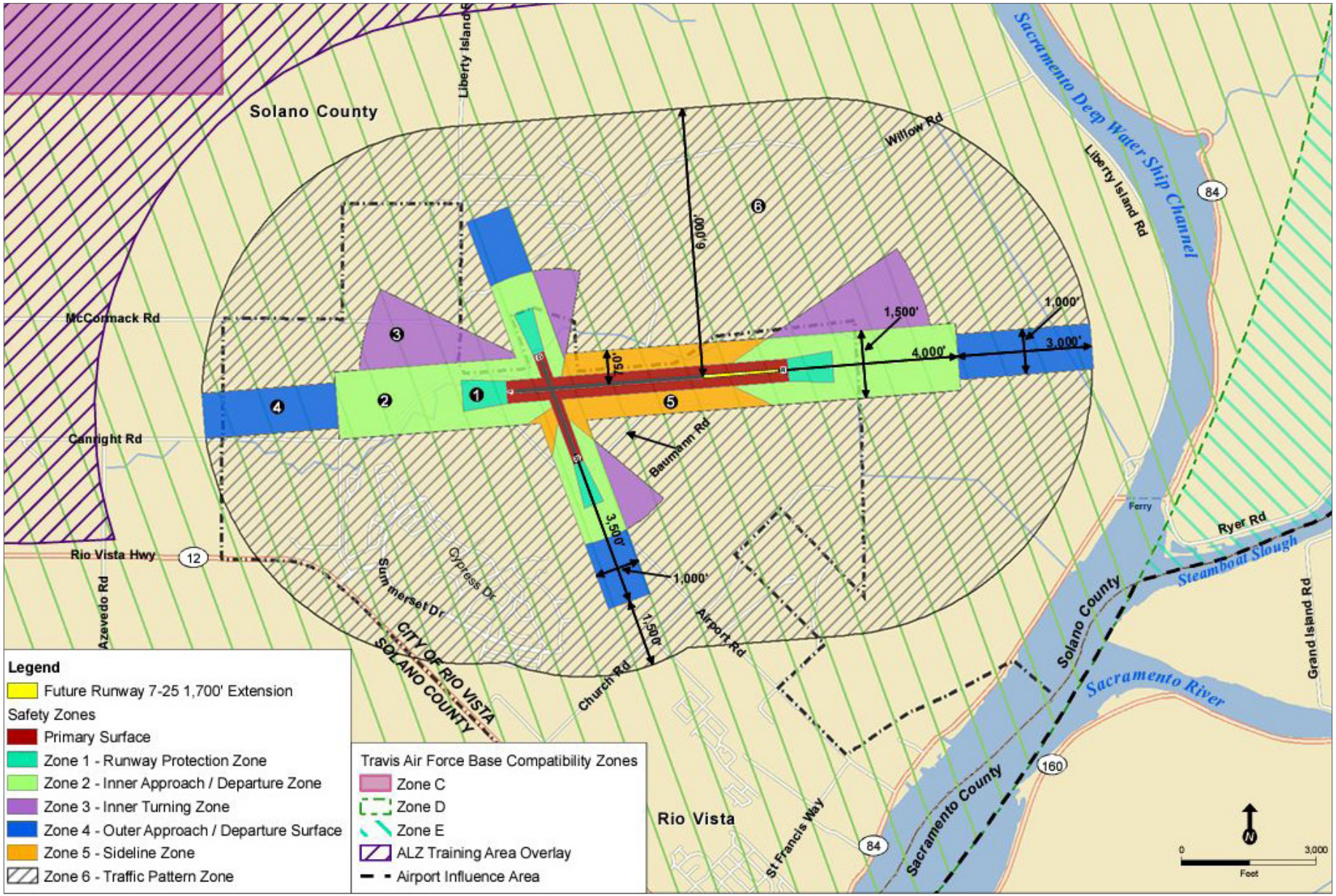
- **Safety Zone 1 – Runway Protection Zone** is located just beyond the runways in each direction, within the runway primary surface and clear zones. The dimensions of this zone are specifically defined in accordance with 14 CFR Part 77 criteria.
- **Safety Zone 2 – Inner Approach and Departure Zone** is intended for areas involving aircraft flying at an altitude between 200 and 400 feet above the runways. This area is delineated as being 1,500 feet wide (using the center of the runway) and extending 4,000 feet past the runways.
- **Safety Zone 3 – Inner Turning Zone** extends 30 degrees to the sides of the runways, running 5,000 feet from the center of the runways.
- **Safety Zone 4 – Outer Approach / Departure Surface** is 1,000 feet wide and extends an additional 3,000 feet from Zone 2.
- **Safety Zone 5 – Sideline Zone** extends 750 feet on each side of the runways.
- **Safety Zone 6 – Traffic Pattern Zone** includes all remaining locations beneath any of the Rio Vista Airport airspace protection surfaces delineated in accordance with the 14 CFR Part 77 guidelines as well as areas that are or will be subject to frequent aircraft overflight.



Source: ESA.

Figure 5.9-1

Rio Vista Municipal Airport and Travis Air Force Base Airport Influence Areas



Source: ESA.

Figure 5.9-2

Travis Air Force Base and Rio Vista Airport Compatibility Zones

SOURCE: California Airport Land Use Planning Handbook, October 2011; Mead & Hunt, 2015; Travis AFB, 2014; ESA, 2017; ESRI Mapping Services

Fire Hazards

CAL FIRE establishes Fire Hazard Severity Zones (FHSZ), designating each as moderate, high, or very high severity. Incorporated areas such as Rio Vista are considered local responsibility areas, within which CAL FIRE only designates moderate, high, and very high FHSZs (Government Code 51178).. As shown in Figure 5.17-1, *Fire Hazard Severity Zones,* moderate and high FHSZs are located on vacant land west of Liberty Island Road and north of Highway 12, in the northwestern portion of the city.. Additionally, the City of Rio Vista contains areas designated as a wildland-urban interface (WUI; see Figure 5.17-1, *Wildland-Urban Interface Zones*). More recently, wildfires have been encroaching into more urban areas, that is, the WUI, threatening homes, businesses, and essential infrastructure. As stated in Section 5.17.1.2, *Existing Conditions*, in Section 5.17, *Wildfire,* wildfire remains a serious hazard in the WUI, including undeveloped areas and on large-lot home sites with extensive areas of unirrigated vegetation since these areas of the city consist of natural vegetation which are extremely flammable during late summer and fall. Fire protection in Rio Vista is provided by the City of Rio Vista Fire Department.

5.9.2 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:

H-1 Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

H-2 Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

H-3 Emit hazardous emissions or handle hazardous or acutely hazardous materials, substance, or waste within one-quarter mile of an existing or proposed school.

H-4 Be located on a site which is included on a list of hazardous materials compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment.

H-5 For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, result in a safety hazard or excessive noise for people residing or working in the project area.

H-6 Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

H-7 Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.

5.9.3 Proposed General Plan Goals and Policies

The following goals and policies from the proposed General Plan Update are applicable to hazards and hazardous materials.

Safety Element

- **Goal SE-1: To avoid loss of life and minimize damage to property from natural and human-caused hazards.**
  - **Policy SE-1:** The most recent version of the Solano County Multi-Jurisdictional Hazard Mitigation Plan, City of Rio Vista Annex, certified by FEMA, is hereby incorporated into this Safety Element by reference, as permitted by California Government Code Section 65302.6.
  - **Policy SE-2:** The City will strive to ensure that emergency preparation and response materials are available to all residents in multiple languages and in formats appropriate for people with access and functional needs.
  - **Policy SE-3:** Coordinate with emergency responders to maintain potential evacuation routes, including roadway improvements as needed.
  - **Policy SE-5:** Site critical and lifeline facilities, including police and fire stations, hazardous material storage facilities, bridges, and large public assembly halls, outside of hazardous, including flood hazard zones, sea level rise hazard areas, seismic and geologic hazard areas, and adjacent to hazardous materials facilities.
  - **Policy SE-6:** Plan for adequate firefighting infrastructure, including water supply and pressure, road and building clearance for firefighting vehicles, and clear and legible street signage throughout the community.
  - **Policy SE-7:** Minimize the potential for loss of life and property resulting from wildfire through community outreach and the development review process.

- **Policy SE-8:** Prohibit the location of new hazardous waste storage facilities or land uses that use hazardous materials in areas subject to flooding during 100-year and 200-year storm events.
- **Policy SE-9:** When reviewing any entitlements for residential uses on lands that contain natural gas wells or facilities, require a well/facility maintenance plan and a detailed safety plan that includes emergency response procedures.

Noise Element

- **Goal SN-1:** Ensure that community members and businesses are not adversely impacted by unwanted or excessive noise levels.
  - **Policy SN-7:** Projects located within the CNEL 55 dB contour of the Rio Vista Municipal Airport, as depicted in the Airport Land Use Compatibility Plan (ALUCP), shall be reviewed for noise sensitivity and consistency with City and ALUCP noise standards.

5.9.4 Environmental Impacts

Impact 5.9-1: Implementation of the proposed project, including construction and operation activities, could involve the transport, use, and/or disposal of hazardous materials; however, compliance with existing local, State, and federal regulations would ensure impacts are minimized. [Thresholds H-1, H-2, and H-3]

Construction

Potentially hazardous materials used during construction include substances such as paints, sealants, solvents, adhesives, cleaners, and diesel fuel. There is potential for these materials to spill or to create hazardous conditions. However, the materials used would not be in such quantities or stored in such a manner as to pose a significant safety hazard. In the event of a potential release and cleanup of hazardous materials in the construction process, the Solano County Environmental Health Services Division's Environmental Cleanup Program (ECP) would provide oversight of environmental investigations and cleanup of contaminated sites. Project construction workers would be trained in safe handling, and hazardous materials use, pursuant to Cal/OSHA requirements.

To prevent hazardous conditions, existing local, state, and federal laws—such as those listed under Section 5.9.1.2, *Regulatory Background*—are to be enforced at construction sites, as well as during the transport and disposal of hazardous materials. For example, compliance with existing regulations would ensure that construction workers and the

public are not exposed to any risks related to hazardous materials during construction activities. Cal/OSHA has regulations concerning the use of hazardous materials, including requirements for safety training, exposure warnings, availability of safety equipment, and preparation of emergency action/prevention plans. For example, all spills or leakage of petroleum products during construction activities are required to be immediately contained, the hazardous material identified, and the material remediated in compliance with applicable state and local regulations for the cleanup and disposal of that contaminant. All contaminated waste encountered would be required to be collected and disposed of at an appropriately licensed disposal or treatment facility. Furthermore, strict adherence to all emergency response plan requirements set forth by the Rio Vista Fire Department would be required throughout the duration of project construction. Therefore, impacts would be less than significant.

Operations

The proposed project would allow for the development of a variety of land uses, including industrial, residential, commercial, office, civic, and open space uses. Industrial uses and some commercial uses utilize greater amounts of hazardous materials than other uses, such as residential uses and schools. Operation of future residential and some commercial uses that would be accommodated would involve the use of small quantities of hazardous materials for cleaning and maintenance purposes, such as paints, household cleaners, fertilizers, and pesticides. Operation of future industrial and some types of commercial uses would involve use of larger amounts of hazardous materials, such as fuel/diesel, and commercial grade chemicals, solvents, cleaners, etc. These types of industrial and commercial uses, and therefore, specific types of hazardous materials to be used, are not yet known.

The use, storage, transport, and disposal of hazardous materials by future residents and commercial and industrial tenants/owners would be required to comply with existing regulations of several agencies, including the California Department of Toxic Substances Control, US Environmental Protection Agency, California Division of Occupational Safety and Health, California Department of Transportation, and Rio Vista Fire Department. Regulations that would apply to the uses that involve transporting, using, or disposing of hazardous materials include RCRA, which provides the “cradle to grave” regulation of hazardous wastes; CERCLA, which regulates closed and abandoned hazardous waste sites; the Hazardous Materials Transportation Act, which governs hazardous materials transportation on U.S. roadways; International Fire Code (IFC), which creates procedures and mechanisms to ensure the safe handling and storage of hazardous materials; CCR Title 22, which regulates the generation, transportation, treatment, storage and disposal

of hazardous waste; and CCR Title 27, which regulates the treatment, storage, and disposal of solid wastes. For development in California, Government Code Section 65850.2 requires that no final certificate of occupancy or its substantial equivalent be issued unless there is verification that the owner or authorized agent has met, or is meeting, the applicable requirements of the Health and Safety Code, Sections 25500 through 25520.

Compliance with applicable laws and regulations governing the use, storage, transport, and disposal of hazardous materials would ensure that all potentially hazardous materials are used and handled in an appropriate manner and would minimize the potential for safety impacts. Additionally, future residential and nonresidential uses under the proposed project would be constructed and operated with strict adherence to all emergency response plan requirements set forth by the Solano County Environmental Health Division and the Rio Vista Fire Department.

CalEPA has designated the Solano County Environmental Health Division as the CUPA, responsible for managing the following programs in the county:

- Underground Storage Tank Program
- Aboveground Petroleum Storage Act Requirements
- Hazardous Waste Generator and Onsite Hazardous Waste Treatment Programs
- Hazardous Materials Release Response Plans and Inventories (Business Plan)
- California Accidental Release Prevention
- Hazardous Material Management Plans

Additionally, policies in the Proposed General Plan would minimize risks from the use or presence of hazardous materials. For example, Policy SE-8 prohibits the location of new hazardous waste storage facilities or land uses that use hazardous materials in areas subject to flooding during 100-year and 200-year storm events. Policy SE-9 requires a well/facility maintenance plan and a detailed safety plan that includes emergency response procedures when reviewing any entitlements for residential uses on lands that contain natural gas wells or facilities. Therefore, impacts would be less than significant.

Demolition

Future development projects under the proposed project may involve demolition of existing buildings and structures associated with a specific development site. Some building materials used in the mid- and late-1900s are considered hazardous to the environment and harmful to people. For example, while asbestos was generally not used in building materials by 1980, it was still occasionally used until the late 1980s. Lead-

based paint was banned for residential use in 1978 and phased out for commercial structures in 1993.

Typical hazardous materials of concern for existing older structures in the city include asbestos, lead, mold, PCBs, and radon.

For buildings constructed before the 1950s, it is likely that some may contain ACMs and LBP, as well as other building materials containing lead (e.g., ceramic tile and insulation). Demolition of these buildings could cause encapsulated ACM (if present) to become friable (i.e*.,* easily crumbled or pulverized); once airborne, they are considered a carcinogen. Demolition could also cause the release of lead into the air. The USEPA has classified lead and inorganic lead compounds as "probable human carcinogens," and such releases could pose significant risks to persons living and working in and around a proposed development site (USEPA 2004).

The presence of visible water damage, damp materials, visible mold, or mold odor in buildings increases the potential risks of respiratory disease of occupants. According to the California Department of Public Health, known health risks include the development of asthma, allergies, and respiratory infections, the triggering of asthma attacks, and increased wheezing, coughing, difficulty breathing, and other symptoms.

PCBs are synthetic chemicals that were manufactured for use in various industrial and commercial applications—including oil in electrical and hydraulic equipment, and plasticizers in paints, plastics, and rubber products—because of their non-flammability, chemical stability, high boiling point, and electrical insulation properties. When released into the environment, PCBs persist for many years and bioaccumulate in organisms. The USEPA has classified PCBs as probable human carcinogens. In 1979, the USEPA banned the use of PCBs in most new electrical equipment and began a program to phase out certain existing PCB-containing equipment.

State agencies, in conjunction with the federal USEPA and OSHA, regulate removal, abatement, and transport procedures for asbestos-containing materials. Releases of asbestos from industrial, demolition, or construction activities are prohibited by these regulations; medical evaluation and monitoring are required for employees performing activities that could expose them to asbestos. The regulations include warnings and practices that must be followed to reduce the risk for asbestos emissions and exposure. Finally, federal, state, and local agencies must be notified prior to the onset of demolition or construction activities with the potential to release asbestos. Requirements for limiting asbestos emissions from building demolition and renovation activities are specified in South Coast AQMD Rule 1403 *(Asbestos Emissions from Demolition/Renovation*

Activities). California Government Code Sections 1529 and 1532.1 provide for exposure limits, exposure monitoring, respiratory protection and good working practice by workers exposed to lead and ACM. Therefore, impacts would be less than significant.

Accidental Release

The use, storage, and transport of hazardous materials and hazardous wastes in compliance with the laws and regulations mentioned above would minimize the potential for releases of hazardous materials that could pose substantial hazards to the public or the environment and would entail prompt containment and cleanup of spills. Residential uses, some civic uses such as schools and parks, and some commercial uses utilize only small amounts of hazardous materials—such as cleansers, paints, fertilizers, and pesticides—and mostly or entirely for cleaning and maintenance purposes. Use of such small amounts of hazardous materials would not pose substantial hazards to the public or the environment through accidental releases. Businesses handling reporting quantities of hazardous or extremely hazardous materials would maintain business plans including: procedures in the event of a hazardous materials release, procedures for immediate notification of all appropriate agencies and personnel, identification of local emergency medical assistance, contact information for company emergency coordinators, a listing and location of emergency equipment at the business, an evacuation plan, and a training program for business personnel.

CalARP aims to be proactive and therefore requires businesses to prepare risk management plans, which are detailed engineering analyses of the potential accident factors present at a business and the mitigation measures that can be implemented to reduce this accident potential. The Solano County Environmental Health Division is the CUPA designated as the administering agency for CalARP. Therefore, impacts would be less than significant.

Level of Significance Before Mitigation: Impact 5.9-1 would be less than significant.

Mitigation Measures

No mitigation measures are required.

Impact 5.9-2: Implementation of the proposed project could facilitate development of a site which is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5, but would not create a significant hazard to the public or the environment. [Threshold H-4]

As identified in Table 5.9-1, *Hazardous Materials Sites in the City of Rio Vista*, a search of the online EnviroStor and GeoTracker databases on June 17, 2024, identified 49 hazardous materials sites within the city (SWRCB 2023; DTSC 2023a). Of the 49 sites, seven are designated as "active," "open," or "require further review," and the remaining 42 sites are designated as "closed," "completed – case closed," "no action required," or "no further action."

Although there are 49 hazardous waste sites in the city, development on other sites in the city may result in hazardous materials impacts. However, properties contaminated by hazardous substances are regulated at the local, state, and federal level and are subject to compliance with stringent laws and regulations for investigations and remediation. For example, compliance with the CERCLA, RCRA, CCR Title 22, and related requirements would remedy all potential impacts caused by hazardous substance contamination. Additionally, there are policies in the Proposed General Plan that would ensure impacts as a result of hazardous materials would be reduced. For example, Policy SE-5 requires that hazardous material storage facilities be sited outside of hazardous areas, including flood hazard zones, sea level rise hazard areas, seismic and geologic hazard areas. Policy SE-8 prohibits the location of new hazardous waste storage facilities or land uses that use hazardous materials in areas subject to flooding during 100-year and 200-year storm events. Therefore, with compliance with existing laws and regulations, buildout of the proposed project would result in a less than significant impact.

Level of Significance Before Mitigation: Impact 5.9-2 would be less than significant.

Mitigation Measures

No mitigation measures are required.

Impact 5.9-3: Development under the proposed project would not result in a safety hazard or excessive noise for people residing or working within two miles of an airport. [Threshold H-5]

Airport operations and their accompanying safety hazards require careful land use planning on adjacent and nearby lands to protect the residential and business communities from the potential hazards that could be created by airport operations.

Pursuant to Section 21096 of the Public Resources Code, the lead agency must consider whether the project would result in a safety hazard for persons using the airport or for persons residing or working in a project area.

The County ALUC is the agency in Solano County empowered by state law to prepare the ALUCP for airports and heliports in the county. The County ALUC ensures the orderly development of airports and the adoption of land use measures to minimize the public's exposure to excessive noise and safety hazards within areas around public airports, to the extent that these areas are not already devoted to incompatible uses.

The Solano County ALUC has adopted plans, the policies of which apply to all existing airports in the county, including Travis AFB and the Rio Vista Municipal Airport, and to any new airport or heliport (except private-use facilities) that may be proposed in the future.

The City is within the AIA of the Rio Vista Municipal Airport and Travis AFB. The AIA for Rio Vista Airport is located entirely within Compatibility Zone D of the Travis AFB AIA. In this case, both compatibility plans apply since there is overlap of AIAs. In accordance with Compatibility Zone D of Travis AFB's Land Use Compatibility Plan, future development would be subject to review for all new objects greater than 200 feet above ground level in height; review that entails a Solar Glare Hazard Analysis Tool glint and glare study for all new or expanded commercial-scale solar facilities; review involving appropriate line-of-sight standards for all proposed wind turbine facilities. Apart from these restrictions, there are no density or intensity limits.

The Rio Vista Municipal Airport is located on the northeastern boundary of the city and its AIA and Safety Zones include the northern portion of the city, as shown in Figure 5.9-1, *Rio Vista Municipal Airport and Travis Air Force Base Airport Influence Areas,* and Figure 5.9-2, *Rio Vista Airport Municipal Airport Safety Zones*. Rio Vista Airport's 2018 Airport Land Use Compatibility Plan provides development standards for projects within the AIA and safety zones, including use and height restrictions, that ensure future development is compatible with airport operations. The Solano County ALUC is responsible for reviewing development proposals to ensure their consistency with the ALUCP. The review of development proposals typically involves discretionary approvals or those that could significantly impact land use. Routine or permitted projects that automatically conform to established standards generally undergo a less extensive review process.

Pursuant to Section 21096 of the Public Resources Code, during future environmental review, the City must consider whether the project will result in a safety hazard or noise problem for persons using the airport or for persons residing or working in the project area. Development in the vicinity of airports would be subject to discretionary review as

well as review by the County ALUC. In addition to the provisions of the ALUCP, the FAA and Caltrans Division of Aeronautics provide guidance for land use safety near airports. With adherence to these guidelines, high concentrations of people will not be exposed to potential airplane accidents near the airport while airplanes are departing and arriving.

There are also guidelines in the Rio Vista ALUCP that prohibit the placement of housing, schools, and other sensitive land uses near airports in part because of the noise pollution caused by airplanes (see also Section 5.12, *Noise*, of this Draft EIR). In total, the airport features six safety zones, numbered 1 through 6. Compatibility criteria (e.g., density and intensity requirements) relevant to each safety zone are described in detail in each section. These details are summarized in Table 1 in Chapter 3 of the Rio Vista ALUCP. Chapter 5 of the Rio Vista ALUCP also provides additional specific general, noise, safety, aircraft protection, and overflight policies and development standards that apply to each safety zone. These guidelines and policies ensure that future development does not cause airport-related safety hazards or is far enough from airport activities so that noise from the airport does not significantly affect residents and workers nearby.

The proposed project also includes policies within the Noise Element that would help to ensure that people would not be adversely impacted by unwanted or excessive noise levels, such as Policy SN-7 which states that projects located within the CNEL 55 dB contour of the Rio Vista Municipal Airport shall be reviewed for noise sensitivity and consistency with City and ALUCP noise standards. With adherence to applicable procedures and requirements described above, future development projects under the proposed project would not be exposed to airport-related hazards and impacts would be less than significant.

Level of Significance Before Mitigation: Impact 5.9-3 would be less than significant.

Mitigation Measures

No mitigation measures are required.

Impact 5.9-4: Development under the proposed project could affect the implementation of an emergency responder or evacuation plan. [Threshold H-6]

Regional access to and from Rio Vista is limited to State Route (SR-) 12 and SR-84. SR-12 bisects the city from east to west, serving as the principal connector between I-80 in Fairfield and I-5 in Stockton. SR-84, also referred to as River Road, parallels the Sacramento River from north to south and connects to SR-12.

Several major roadways and transit routes within and adjacent to the city are crossed by one or more disaster prone areas—including liquefaction areas, landslide susceptibility areas, wildland-urban interface areas, flood zones, sea level rise inundation areas, dam inundation zones, and other hazards. Any of these disasters can cause damage to transportation infrastructure, preventing or impeding access by emergency responders and evacuation by residents. In addition, future development under the proposed project would result in construction activities that could temporarily affect roadways as a result of lane closures or narrowing for roadway and/or utility improvements. This could affect emergency response times or evacuation routes. By increasing the residential and daytime population in Rio Vista, traffic congestion may increase in some areas as well. Therefore, in the event of an accident or natural disaster, evacuation plans and routes could be adversely affected by the increased traffic.

To address such impacts, the City has worked with the County of Solano to adopt and continually update the MJHMP. The MJHMP reduces injury, loss of life, property damage, and loss of services from natural disasters and provides a comprehensive analysis of the natural and human-caused hazards that threaten the county, with a focus on mitigation. This allows the City to remain eligible to receive additional federal and State funding to assist with emergency response and recovery, as permitted by the federal Disaster Mitigation Act of 2000 and California Government Code Sections 8685.9 and 65302.6. In addition, the County implements the EOP to address emergency response and wildfire mitigation planning.

Rio Vista has also implemented Government Code Section 65302 which requires that the safety element of a general plan address evacuation routes. During an emergency, the Rio Vista Fire Department would provide emergency services within the city. Future development under the proposed project would be required to comply with applicable fire and building codes to meet minimum standards for fire safety. In addition, the Rio Vista Safety Element includes information identifying residential developments in hazard areas that do not have at least two emergency evacuation routes, per Senate Bill 99 (2018). All evacuation routes in Rio Vista face a potential disruption from a flooding or earthquake event, which may block roadways, damage the roadway surface, or collapse bridges. In the event of widespread disruption to local evacuation routes, remaining evacuation routes may become congested, slowing down evacuation of the community or specific neighborhoods.

Mutual and automatic aid agreements are also maintained with numerous surrounding local, state, and federal agencies to allow for appropriate backup services in case of an emergency, disaster, or other similar event. Additionally, the Safety Element contains

policies that support emergency preparedness and response efforts. Policy SE-2 strives to ensure that emergency preparation and response materials are available to all residents in multiple languages and in formats appropriate for people with access and functional needs. Policy SE-3 seeks to coordinate with emergency responders to maintain potential evacuation routes, including roadway improvements as needed. These policies would ensure adequate communication in the event of an emergency. Therefore, compliance with applicable regulations, and implementation of emergency and evacuation plans as well as the policies in the General Plan would reduce impacts to less than significant.

Level of Significance Before Mitigation: Impact 5.9-4 would be less than significant.

Mitigation Measures

No mitigation measures are required.

Impact 5.9-5: The project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. [Threshold H-7]

Wildland fires are uncontrolled fires typically in areas of little to no development, but these fires can spread quickly to the urban/wildland interface where development meets expanses of vegetative fuels. Rio Vista is interface area where a proactive approach to preventing the start and spread of wildland fire is vital to protecting lives and property. As shown on Figure 5.17-1, *Wildland-Urban Interface Zones,* the city contains areas within a WUI. Additionally, there is some risk of landslides and flooding, after the occurrence of wildfire.

Although wildfire risks are present in the city, adherence to applicable building practices and the Proposed Safety Element policies would reduce impacts, such as Policy SE-6, which plans for adequate firefighting infrastructure, including water supply and pressure, road and building clearance for firefighting vehicles, and clear and legible street signage throughout the community, as well as Policy SE-7, which minimizes the potential for loss of life and property resulting from wildfire through community outreach and the development review process. Additionally, development under the proposed project would be subject to compliance with the most recent California Building Code and California Fire Code. The California Fire Code (Part 9 of Title 24 of the California Code of Regulations) includes Section 4905.2, Construction Methods and Requirements within Established Limits. The California Fire Code Chapter 49 cites specific requirements for wildland-urban interface areas that include, but are not limited to, providing defensible space and hazardous vegetation and fuel management.

The proposed project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. The proposed project, in combination with state laws and regulations, as well as General Plan policies, would reduce hazards regarding fire risks to a less than significant level.

Level of Significance Before Mitigation: Impact 5.9-5 would be less than significant.

5.9.5 Cumulative Impacts

The geographic scope of analysis for cumulative hazards and hazardous materials impacts encompasses the entirety of the City of Rio Vista. While some impacts relative to hazardous materials are generally site-specific and depend on the nature and extent of the hazardous materials release, other impacts, including the transport of hazardous materials across regional transportation systems and wildfire impacts, have the potential to impact areas outside of the city.

Hazardous Materials

Construction activities for all projects in the County, including within incorporated jurisdictions, would be subject to the same regulatory requirements discussed for the project for compliance with existing hazardous materials regulations, including the management of hazardous materials and spill response within the respective jurisdictions. Cumulative projects that transport, use, store, or dispose of hazardous materials would be required to comply with the same regulations as the proposed project. Entities that use hazardous materials would be required to prepare and implement Hazardous Materials Business Plans that would describe procedures for the safe and legal transportation, storage, use, and disposal of hazardous materials. Based upon these considerations, the cumulative effect of the proposed project's implementation would be less than significant.

Emergency Response and Evacuation

As with the City, other jurisdictions would implement the measures and strategies in applicable EOPs and hazard mitigation plans which would ensure that development would not restrict or interfere with the flow of emergency vehicles or evacuation and would therefore not create a cumulatively considerable effect. While additional traffic volumes are expected under the planning horizon of the Proposed General Plan, the MJHMP and the Safety Element policies would ensure adequate emergency response and evacuation. Additionally, the City would be required to periodically update its emergency response and evacuation plan(s) as required under Government Code 65302.15 (AB 747). This periodic reevaluation would address these changed conditions and would adjust the

evacuation plans accordingly. Based upon these considerations, the cumulative effect of the proposed project's implementation would be less than significant.

Fire Hazards

Cumulative impacts with respect to wildfire are addressed in Section 5.17, *Wildfire*.

5.9.6 References

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5. Environmental Analysis
HAZARDS AND HAZARDOUS MATERIALS

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5.10 HYDROLOGY AND WATER QUALITY

This section of the Draft Environmental Impact Report (EIR) evaluates the potential effects of the Rio Vista General Plan Update (proposed project) related to hydrology and water quality conditions. Hydrology deals with the distribution and movement of water, both on land and underground, as well as the impact of human activity on water conditions. Water quality refers to the chemical, physical, and biological characteristics of water based on water quality standards. Surface water includes lakes, rivers, streams, and creeks; groundwater is under the earth's surface. A summary of the relevant regulatory framework and existing conditions is followed by a discussion of potential impacts and cumulative impacts related to implementation of the proposed General Plan Update.

5.10.1 Environmental Setting

5.10.1.1 REGULATORY BACKGROUND

Federal

Clean Water Act

The United States Environmental Protection Agency (USEPA) is the lead federal agency responsible for water quality management and the Clean Water Act (CWA) is the principal statute governing water quality. It establishes the basic structure for regulating discharges of pollutants into the waters of the United States and gives the USEPA authority to implement pollution control programs. In California, the authority is delegated to the State Water Resources Control Board (SWRCB) and Regional Water Quality Control Boards (RWQCBs).

The CWA regulates direct and indirect discharge of pollutants, sets water quality standards for all contaminants in surface waters, and makes it unlawful for any person to discharge any pollutant from a point source into navigable waters unless a permit is obtained under its provisions. The CWA mandates permits for wastewater and stormwater discharges; requires states to establish site-specific water quality standards; and regulates other activities that affect water quality, such as dredging and the filling of wetlands. The CWA also provides loans for the construction of wastewater treatment plants as well as nonpoint source pollution control and estuary protection projects through the Clean Water State Revolving Fund.

Permits to dredge or fill waters of the United States are administered by the United States Army Corps of Engineers (USACE) under Section 404 of the CWA. “Waters of the United States” are defined as territorial seas and traditional navigable waters, perennial and intermittent tributaries to those waters, lakes, ponds, and impoundments of jurisdictional waters, and wetlands that have a surface connection with and are adjacent to jurisdictional waters. The regulatory branch of the USACE is responsible for implementing and enforcing Section 404 of the CWA and issuing permits. Any activity that discharges fill material and/or requires excavation in waters of the United States must obtain a Section 404 permit. Before issuing the permit, the USACE requires that an analysis be conducted to demonstrate that the proposed project is the least environmentally damaging alternative. Also, the USACE must comply with the National Environmental Policy Act (NEPA) before it can issue an individual Section 404 permit.

Under Section 401 of the CWA, every applicant for a Section 404 permit that may result in a discharge to a water body must first obtain State Water Quality Certification that the proposed activity will comply with State water quality standards. Certifications are issued in conjunction with USACE Section 404 permits for dredge-and-fill discharges. In addition, an application for Individual Water Quality Certification and/or Waste Discharge Requirements must be submitted for any activity that would result in the placement of dredged or fill material in waters of the State that are not jurisdictional to the USACE, such as isolated wetlands, to ensure that the proposed activity complies with State water quality standards. In California, the authority to grant water quality certification or waive the requirement is delegated by the SWRCB to its nine RWQCBs.

Under federal law, the USEPA has published water quality regulations under Volume 40 of the Code of Federal Regulations (CFR). Section 303 of the CWA requires states to adopt water quality standards for all surface waters of the United States. As defined by the CWA, water quality standards consist of two elements: (1) designated beneficial uses of the water body in question and (2) criteria that protect the designated uses. Section 304(a) requires the USEPA to publish advisory water quality criteria that accurately reflect the latest scientific knowledge on the kind and extent of all effects on health and welfare that may be expected from the presence of pollutants in water. Where multiple uses exist, water quality standards must protect the most sensitive use. In California, the USEPA has delegated authority to the SWRCB and its RWQCBs to identify beneficial uses and adopt applicable water quality objectives.

When water quality does not meet CWA standards and compromises designated beneficial uses of a receiving water body, Section 303(d) of the CWA requires that a water body be identified and listed as “impaired.” Once a water body has been designated as

impaired, a Total Maximum Daily Load (TMDL) must be developed for the impairing pollutant(s). A TMDL is an estimate of the total load of pollutants from point, nonpoint, and natural sources that a water body may receive without exceeding applicable water quality standards, with a factor of safety included. Once established, the TMDL allocates the loads among current and future pollutant sources to the water body.

National Pollutant Discharge Elimination System

The National Pollutant Discharge Elimination System (NPDES) permit program was established by the CWA to regulate municipal and industrial discharges to surface waters of the United States, including discharges from municipal separate storm sewer systems (MS4). Federal NPDES permit regulations have been established for broad categories of discharges, including point-source municipal waste discharges and nonpoint-source stormwater runoff. NPDES permits generally identify effluent and receiving water limits on allowable concentrations and/or mass emissions of pollutants in the discharge; prohibitions on discharges not specifically allowed under the permit; and provisions that describe required actions by the discharger, including industrial pretreatment, pollution prevention, self-monitoring, and other activities. Under the NPDES Program, all facilities that discharge pollutants into waters of the United States are required to obtain a NPDES permit. Requirements for stormwater discharges are also regulated under the NPDES permit program. In California, the NPDES permit program is administered by the SWRCB through the nine RWQCBs.

Under the MS4 Permit, the co-permittees use their planning authorities to include appropriate source control, site design, and stormwater treatment measures in new development and redevelopment projects to address both soluble and insoluble stormwater runoff pollutant discharges and prevent increases in runoff flows from new development and redevelopment projects. This goal is accomplished primarily through the implementation of low-impact development techniques. In addition, all priority projects must comply with the hydromodification requirements specified in the MS4 permit unless exempt. These requirements include implementing stormwater control measures such that post-project runoff flow rates and durations must not exceed pre-project runoff flow rates and durations by more than 10 percent for the 2-year runoff event up to the 10-year runoff event.

Federal Urban Flooding Awareness Act

Under the Urban Flooding Awareness Act of 2015, the Federal Emergency Management Agency (FEMA) and the National Academy of Sciences will conduct a study on urban flooding. It defines “urban flooding” as the inundation of property in a built environment,

particularly in more densely populated areas, caused by rain falling on increased amounts of impervious surface and overwhelming the capacity of drainage systems. The bill directs FEMA and the National Academy of Sciences to evaluate the latest research, laws, regulations, policies, best practices, procedures, and institutional knowledge regarding urban flooding. The findings from this assessment will direct future federal policies on identifying, preventing, and mitigating urban flooding.

National Flood Insurance Program

FEMA administers the National Flood Insurance Program (NFIP) to provide subsidized flood insurance to communities that comply with FEMA regulations limiting development in floodplains. FEMA also issues Flood Insurance Rate Maps (FIRMs) that identify which land areas are subject to flooding. These maps provide flood information and identify flood hazard zones in the community. The design standard for flood protection is established by FEMA. FEMA's minimum level of flood protection for new development is the 100-year flood event, also described as a flood that has a 1-in-100 chance of occurring in any given year.

As required by the FEMA regulations, all development constructed within the 100-year floodplain (as delineated on the FIRM) must be elevated so that the lowest floor is at or above the base flood elevation level. The term "development" is defined by FEMA as any human-made change to improved or unimproved real estate, including, but not limited to, buildings, other structures, mining, dredging, filling, grading, paving, excavation or drilling operations, and storage of equipment or materials. Per these regulations, if development in these areas occurs, a hydrologic and hydraulic analysis must be performed prior to the start of development and must demonstrate that the development does not cause any rise in base flood elevation levels, because no rise is permitted within regulatory floodways. Upon completion of any development that changes existing Special Flood Hazard Area boundaries, the NFIP directs all participating communities to submit the appropriate hydrologic and hydraulic data to FEMA for a FIRM revision, as soon as practicable, but not later than six months after such data becomes available.

Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act provides the basic authority for the United States Fish and Wildlife Service (USFWS) to evaluate impacts to fish and wildlife from proposed water resource development projects. This act requires that all federal agencies consult with the USFWS, the National Marine Fisheries Service, and state wildlife agencies (i.e., the California Department of Fish and Wildlife or CDFW) for activities that affect, control, or modify waters of any stream or bodies of water. Under this act, the USFWS has

responsibility for reviewing and commenting on all water resources projects. For example, it would provide consultation to the USACE prior to issuance of a Section 404 permit.

If a project may result in the "incidental take" of a listed species, an incidental take permit is required. An incidental take permit allows a developer to proceed with an activity that is legal in all other respects but that results in the "incidental taking" of a listed species. A habitat conservation plan must also accompany an application for an incidental take permit. The purpose of a habitat conservation plan is to ensure that the effects of the permitted action on listed species are adequately minimized and mitigated.

State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Water Code Sections 13000 et seq.) is the basic water quality control law for California. This act established the SWRCB and divided the state into nine regional basins, each under the jurisdiction of an RWQCB. The SWRCB is the primary State agency responsible for the protection of California's water quality and groundwater supplies. The RWQCBs carry out the regulation, protection, and administration of water quality in each region. Each regional board is required to adopt a water quality control plan or basin plan that recognizes and reflects the regional differences in existing water quality, the beneficial uses of the region's ground and surface water, and local water quality conditions and problems. The City of Rio Vista is within the jurisdiction of the Central Valley RWQCB (Region 5).

The Porter-Cologne Act also authorizes the SWRCB and RWQCBs to issue and enforce waste discharge requirements, NPDES permits, Section 401 water quality certifications, or other approvals. Other State agencies with jurisdiction over water quality regulation in California include the California Department of Water Resources, the SWRCB's Division of Drinking Water, the CDFW, and the Department of Toxic Substances Control.

State Water Resources Control Board

Regional authority for planning, permitting, and enforcement is delegated to the nine RWQCBs. Regional boundaries are based on watersheds and water quality requirements which are based on the unique differences in climate, topography, geology, and hydrology for each watershed. Each RWQCB makes water quality decisions for its region, including setting standards, issuing waste discharge requirements, determining compliance with these requirements, and taking appropriate enforcement actions. The regional boards are required to formulate and adopt water quality control plans for all areas in the region and

establish water quality objectives in the plans. The City of Rio Vista is within the jurisdiction of the Central Valley RWQCB (Region 5). The RWQCB regulates surface water and groundwater quality in the watersheds within their jurisdiction.

SWRCB General Construction Permit

Construction activities that disturb one or more acres of land that could impact hydrologic resources must comply with the requirements of the newly reissued SWRCB Construction General Permit (Order WQ 2022-0057-DWQ), which became effective on September 1, 2023. Under the terms of the permit, applicants must file Permit Registration Documents (PRD) with the SWRCB prior to the start of construction. The PRDs include a Notice of Intent, risk assessment, site map, Stormwater Pollution Prevention Plan (SWPPP), annual fee, and a signed certification statement. The PRDs are submitted electronically to the SWRCB via the Stormwater Multiple Application and Report Tracking System (SMARTS) website.

Applicants must also demonstrate conformance with applicable best management practices (BMPs) and prepare a SWPPP containing a site map that shows the construction site perimeter, existing and proposed buildings, lots, roadways, stormwater collection and discharge points, general topography both before and after construction, and drainage patterns across the project site. The SWPPP must list BMPs that will be implemented to prevent soil erosion and discharge of other construction-related pollutants that could contaminate nearby water resources. BMPs included in the SWPPP may include measures such as the following.

1. Providing permeable surfaces where feasible to encourage percolation.
2. Retaining and treating stormwater on-site using catch basins and filtering wet basins.
3. Minimizing the contact of construction materials, equipment, and maintenance supplies with stormwater.
4. Reducing erosion through soil stabilization, watering for dust control, installing perimeter silt fences, placing rice straw bales, and installing sediment basins. To minimize potential impacts on wildlife, no monofilament plastic mesh or line will be used for erosion control.

5. Maintaining water quality by using infiltration systems, detention systems, retention systems, constructed wetland systems, filtration systems, biofiltration/bioretention systems, grass buffer strips, ponding areas, organic mulch layers, planting soil beds, sand beds, and vegetated systems such as swales and grass filter strips that are designed to convey and treat either fallow flow (swales) or sheetflow (filter strips) runoff.

Additionally, the SWPPP must contain a visual monitoring program, a sampling program to ensure compliance with water quality standards, and on-site collection of samples and inspection of BMPs during a qualifying precipitation event.

SWRCB Board General Industrial Permit

The Statewide General Permit for Stormwater Discharges Associated with Industrial Activities, Order No. 2014-0057-DWQ and amended by 2015-0122-DWQ (2018), implements the federally required stormwater regulations in California for stormwater associated with industrial activities that discharge to waters of the United States. This regulation covers facilities that are required by federal regulations or by the RWQCBs to obtain an NPDES permit. Dischargers are required to eliminate non-stormwater discharges, develop SWPPPs that include BMPs, conduct monitoring of stormwater runoff, and submit all compliance documents via the SWRCB's SMARTS program.

SWRCB Trash Amendments

On April 7, 2015, the SWRCB adopted an amendment to the Water Quality Control Plan for Ocean Waters of California to control trash and Part 1, *Trash Provisions*, of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California. They are collectively referred to as "the Trash Amendments." The Trash Amendments apply to all surface waters of California and include a land-use-based compliance approach to focus trash controls on areas with high trash-generation rates. Areas such as high-density residential, industrial, commercial, mixed urban, and public transportation stations are considered priority land uses. There are two compliance tracks for Phase I and Phase II MS4 permittees:

- **Track 1.** Permittees must install, operate, and maintain a network of certified full capture systems in storm drains that capture runoff from priority land uses.
- **Track 2.** Permittees must implement a plan with a combination of full capture systems, multi-benefit projects, institutional controls, and/or other treatment methods that have the same effectiveness as Track 1 methods.

The Trash Amendments provide a framework for permittees to implement their provisions. Full compliance must occur within 10 years of the permit, and permittees must also meet interim milestones such as average load reductions of 10 percent per year. The amendment mandates that the City needs to install certified full trash capture systems in all City-applicable storm drain infrastructure by December 2, 2030 (SWRCB 2025).

California Department of Fish and Wildlife

The CDFW protects streams, water bodies, and riparian corridors through the streambed alteration agreement process under Sections 1600 to 1616 of the California Fish and Game Code. The Fish and Game Code stipulates that it is "unlawful to substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream or lake" without notifying the CDFW, incorporating necessary mitigation, and obtaining a streambed alteration agreement. CDFW's jurisdiction extends to the top of banks and often includes the outer edge of riparian vegetation.

Sustainable Groundwater Management Act of 2014

In the midst of a major drought in 2014, a three-bill legislative package consisting of Assembly Bill (AB) 1739, Senate Bill (SB) 1168, and SB 1319, collectively known as the Sustainable Groundwater Management Act (SGMA), was signed into law on September 16, 2014 (DWR 2025a). The Governor's signing message states "a central feature of these bills is the recognition that groundwater management in California is best accomplished locally." Under SGMA, in groundwater basins that are designated as medium and high priority, local public agencies and groundwater sustainability agencies (GSAs) must assess conditions in their local groundwater basins and then prepare groundwater sustainability plans (GSPs).

California Water Code Section 13751: Water Wells

Section 13751 of the Water Code requires a Well Completion Report from each person who digs, bores, or drills a water well, cathodic protection well, groundwater monitoring well, or geothermal heat exchange well or abandons or modifies an existing well. The report must be filed with the California Department of Water Resources (DWR) within 60 days of the date that construction, alteration, abandonment, or destruction of a well is completed (DWR 2025b). Completed reports are sent to and maintained at the DWR regional office that serves the area where the well is located.

Water Conservation in Landscaping Act of 2006

The Water Conservation in Landscaping Act includes the State of California's Model Water Efficient Landscape Ordinance (MWELO), which requires cities and counties to adopt landscape water conservation ordinances. The MWELO was revised in July 2015 via Executive Order B-29-15 to address the ongoing drought and build resiliency for future droughts. State law requires all land use agencies, which includes cities and counties, to adopt a WELO that is at least as efficient as the MWELO prepared by DWR.

The 2015 revisions to the MWELO improve water conservation in the landscaping sector by promoting efficient landscapes in new developments and retrofitted landscapes. The revisions increase water efficiency by requiring more efficient irrigation systems, incentives for grey water usage, improvements in on-site stormwater capture, and limiting the portion of landscapes that can be covered in high-water-use plants and turf. New development projects that include landscape areas of 500 square feet or more are subject to MWELO. This applies to residential, commercial, industrial, and institutional projects that require a permit, plan check, or design review. The previous landscape size threshold for new development projects ranged from 2,500 to 5,000 square feet. The size threshold for rehabilitated landscapes has not changed and remains at 2,500 square feet. The City of Rio Vista has adopted the MWELO, as codified in Chapter 17.68, State model water efficient landscaping ordinance adopted by reference, in the City's Municipal Code.

Regional

Central Valley RWQCB

Rio Vista is in the jurisdiction of the Central Valley RWQCB. The Central Valley RWQCB is responsible for the protection of beneficial uses of water resources. Designation of beneficial uses defines the resources, services, and qualities of the aquatic system that are the ultimate goals of protecting and achieving high water quality. The Central Valley RWQCB addresses regionwide water quality issues through the creation and triennial update of the "Water Quality Control Plan for the Sacramento River and San Joaquin River Basins" (Region 5 Basin Plan), which was most recently amended in February 2019 (CVRWQCB 2019).

The Water Quality Control Plan (Basin Plan) for the Sacramento River and San Joaquin River Basins is the Central Valley RWQCB's master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater. It also includes programs of implementation to achieve water quality objectives. The Basin Plan establishes water

quality objectives for total dissolved solids (TDS), mineral constituents, and turbidity on a watershed-by-watershed basis in the region, while objectives for total and fecal coliform bacteria, nutrients (total nitrogen and total phosphorus), pH, dissolved oxygen, and un-ionized ammonia are set on a region-wide basis.

The City is subject to the waste discharge requirements for the MS4 Permit (Order No. R5-2016-0040, adopted in 2016, and NPDES Permit No. CAS0085324) and issued by the Central Valley RWQCB.

NPDES General Municipal Stormwater Permit

CWA Section 402 mandates programmatic permits for municipalities to address stormwater discharges, which are regulated under the NPDES General Permit for Municipal Separate Storm Sewer Systems (MS4) (MS4 Permit). The MS4 Permit issued by the Central Valley RWQCB lists the City of Rio Vista as one of the permittees (Order No. R5-2016-0040, adopted in 2016, and NPDES Permit No. CAS0085324). The Central Valley RWQCB's authority under the MS4 permit extends to all properties in the City of Rio Vista.

Phase I MS4 regulations cover municipalities with populations greater than 100,000, certain industrial processes, or construction activities disturbing an area of 5 acres or more. Phase II (Small MS4) regulations require municipalities with populations smaller than 100,000 and construction activities disturbing 1 or more acres of land area to develop a stormwater management plan for its jurisdiction. Generally, Phase I MS4s are covered by individual permits and Phase II MS4s are covered by a general permit. Each regulated MS4 is required to develop and implement a stormwater management plan to reduce the contamination of stormwater runoff and prohibit illicit discharges.

The State Water Board is advancing low-impact development (LID) in California as a means of complying with municipal stormwater permits. LID incorporates site design, including the use of vegetated swales and retention basins and minimizing impermeable surfaces, to manage stormwater to maintain a site's predevelopment runoff rates and volumes.

Waste Discharge Requirements for Dewatering and Other Low Threat Discharges to Surface Waters

CWA Section 402 also includes waste discharge requirements (WDRs) for dewatering activities. "Dewatering" refers to the removal and discharge of water, including groundwater, from a site. Although small amounts of construction-related dewatering are covered under the Construction General Permit, the Central Valley Water Board has

regulations specific to dewatering activities that typically involve reporting and monitoring requirements.

If dewatering is required as part of a proposed project, then the project applicant must comply with the Central Valley Water Board dewatering requirements. The Construction General Permit covers uncontaminated dewatering activities, which are considered in the permit to be authorized non-stormwater discharges. As part of the Construction General Permit, all dewatering discharges are required to be filtered or treated, using appropriate technology, from sedimentation basins. Authorized non-stormwater dewatering discharges may require a permit because some RWQCBs have adopted general permits for dewatering discharges. The Central Valley Water Board has adopted an NPDES Low Threat Discharge and Dewatering General Permit. Therefore, a project applicant or the project applicant's contractor would also need to obtain coverage under this permit, which will require the dewatering discharge be treated prior to discharge to any local waterway.

If dewatering activities lead to discharges to the storm drain system or other water bodies, water treatment measures may be designed and implemented as necessary so that water quality objectives are met prior to discharge to waters of the State. As a performance standard, these Waste Discharge Requirements for Dewatering and Other Low Threat Discharges to Surface Waters CWA Section 402 also includes waste discharge requirements (WDRs) for dewatering activities. "Dewatering" refers to the removal and discharge of water, including groundwater, from a site. Although small amounts of construction-related dewatering are covered under the Construction General Permit, the Central Valley Water Board has regulations specific to dewatering activities that typically involve reporting and monitoring requirements. If dewatering is required as part of a proposed project, then the project applicant must comply with the Central Valley Water Board dewatering requirements. The Construction General Permit covers uncontaminated dewatering activities, which are considered in the permit to be authorized non-stormwater discharges. As part of the Construction General Permit, all dewatering discharges are required to be filtered or treated, using appropriate technology, from sedimentation basins. Authorized non-stormwater dewatering discharges may require a permit because some RWQCBs have adopted general permits for dewatering discharges. The Central Valley Water Board has adopted an NPDES Low Threat Discharge and Dewatering General Permit. Therefore, a project applicant or the project applicant's contractor would also need to obtain coverage under this permit, which will require the dewatering discharge be treated prior to discharge to any local waterway. If dewatering activities lead to discharges to the storm drain system or other water bodies, water

treatment measures may be designed and implemented as necessary so that water quality objectives are met prior to discharge to waters of the State.

Solano County Office of Emergency Services

The County Office of Emergency Services (County OES) provides for the development, establishment, and maintenance of programs and procedures to help protect the lives and property of Solano County residents from the effects of natural or human-caused disasters, including floods from dam or levee failures. The County OES works with the County and individual City departments with disaster exercises and evacuation preparations.

Additionally, the County OES conducts emergency preparedness training and awareness presentations for citizens and various organizations so that they will better understand what they should do before, during, and after a disaster or major emergency, including flooding from failure of a levee or dam.

Solano County Multi-Jurisdictional Hazard Mitigation Plan

In collaboration with the City of Rio Vista and other local agencies and special districts, the County of Solano prepared the 2022 Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) in accordance with the federal Disaster Mitigation Act of 2000 and the Federal Emergency Management Agency's (FEMA) hazard mitigation assistance guidance (Solano County 2022). The MJHMP is a countywide plan that identifies hazards, reviews and assesses past disaster occurrences, estimates the probability of future occurrences, and sets goals to reduce or eliminate long-term risk to people and property from natural and human-made hazards.

The mitigation actions in the MJHMP include both short-term and long-term strategies and involve planning, policy changes, programs, projects, and other activities. These mitigation actions are identified based on assessments of hazards, vulnerabilities, and risks and the participation of a wide range of stakeholders and the public in the planning process. Local governments are required to develop a hazard mitigation plan as a condition for receiving certain types of emergency disaster assistance and funding. The Local Hazard Mitigation Plan must be updated and adopted by FEMA and the County every five years. The 2022 MJHMP was approved by FEMA in December 2021 and adopted by the City Council in March 2022.

Solano Sub-basin Groundwater Sustainability Plan

As a requirement of SGMA, high- and medium-priority basins must create and implement groundwater sustainability plans. Because the Solano Subbasin is designated a medium-priority basin, a GSP was prepared in 2022 and approved by DWR in January 2024 (Solano County Water Agency 2025). The GSP was the product of significant collaboration amongst various water management entities in the Subbasin, including the five GSAs comprising the Solano Subbasin GSA Collaborative (Solano Collaborative 2022). These GSAs include the Solano GSA, City of Vacaville GSA, Sacramento County GSA, Solano Irrigation District GSA, and the Northern Delta GSA. The City of Rio Vista is served by the Solano GSA. The Solano GSA is a Joint-Powers Agency representing the City of Rio Vista, City of Dixon, Solano County, Dixon Resource Conservation District (RCD), Solano RCD, Maine Prairie Water District, and Reclamation District (RD) 2068 and associated members from the Solano Farm Bureau, Solano County Agricultural Advisory Committee, and California Water Service.

The purpose of the GSP is to provide a detailed road map for how the Solano Subbasin will achieve and maintain long-term sustainability. The GSP development process primarily included:

- Defining groundwater conditions, identifying data gaps and levels of uncertainty, and developing tools to improve data collection.
- Developing water budgets, sustainable yield estimates, and defining sustainable management criteria, including measurable objectives, minimum thresholds, and undesirable results.
- Establishing projects and management actions to achieve and maintain sustainability and avoid undesirable results.

Local

City of Rio Vista 2020 Urban Water Management Plan

The City of Rio Vista 2020 UWMP addresses the management of urban water demands and the efficient use of water. The UWMP protects water resources for members of the Rio Vista community and contributes to the protection of water resources on a statewide level. The UWMP establishes that the management of urban water demand and efficient use of urban water supplies shall be a guiding criterion in public decisions and requires that urban water suppliers develop water management plans to actively pursue the efficient use of available water supplies (Rio Vista 2022).

City of Rio Vista Municipal Code

Section 13.04.190 – Wasting Water – Procedures and Penalties

The City, in order to eliminate waste of water and reduce the high per-capita consumption of water, declares that it is unlawful for any person or entity to waste water. This section includes procedures and penalties to enforce this regulation, such as if waste persists without correction after notice, it will lead to service disconnection and a misdemeanor, punishable by a fine of $25 to $500 or six months in county jail, if determined by the police department.

Section 15.16.120 – Floodways

Located within areas of special flood hazard established in Section 15.16.060(B) are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of floodwaters which carry debris, potential projectiles, and erosion potential, the following provisions apply: Prohibit encroachments, including fill, new construction, substantial improvements, and other development unless certification by a registered professional engineer or architect is provided demonstrating that encroachments shall not result in any increase in flood levels during the occurrence of the base flood discharge.

Chapter 13.20 – Stormwater Management

The stormwater management ordinance is intended to protect and promote the health, safety, and general welfare of the citizens of the city by controlling non-stormwater discharges. The purpose of the ordinance is to assist in the protection and enhancement of the water quality of watercourses, water bodies, and wetlands in a manner pursuant to and consistent with the Federal Water Pollution Control Act (CWA, 33 USC, Section 1251 et seq.), Porter-Cologne Act (California Water Code Section 13000 et seq.), the NPDES, and the California General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4).

Chapter 13.24 – Grading, Erosion, and Sediment Control

The grading ordinance is enacted for the purpose of regulating grading on property within the city limits to safeguard life, limb, health, property and the public welfare, to avoid pollution of watercourses with nutrients, sediments, or other materials generated or caused by surface water runoff; in a manner pursuant to and consistent with the federal Water Pollution Control Act (CWA, 33 USC, Section 1251 et seq.), Porter-Cologne Act (California Water Code Section 13000 et seq.), NPDES, and the California General Permit

for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4).

Chapter 15.16 – Flood Hazard Protection

The purpose of the flood hazard protection ordinance is to promote public health, safety and general welfare, and to minimize public and private losses due to flood conditions in specific areas. This chapter outlines methods and provisions for managing flood-related risks and protecting both property and natural flood mitigation systems. These provisions form a comprehensive approach to flood management and risk mitigation.

Chapter 17.34 – Floodplain District

The floodway or F-W district is designed to be applied to lands that lie within sloughs and to adjacent areas which are periodically inundated, or which will be inundated by a design flood. The "design flood" shall be specifically defined for each particular development. The purpose of the district is to provide open space to protect natural water courses, drainageways, and floodways that are necessary to safeguard the health, safety, and welfare of the people who will live in the new neighborhoods to the northwest of the city.

Chapter 17.68 – Water Conservation and Landscaping

The City has adopted the California State Model Water-Efficient Landscaping Ordinance (AB 1881) and any subsequent amendments as its law. The chapter also establishes regulations for landscaping to conserve water, such as no lawn/garden watering or other outdoor water use will be allowed between 9:00 a.m. and 7:00 p.m. on any day; users with odd-numbered street addresses shall use outdoor water only on Sundays, Wednesdays, and Fridays; and users with even-numbered street addresses shall use outdoor water only on Saturdays, Tuesdays, and Thursdays.

City of Rio Vista 2001 General Plan

The existing General Plan contains the following policies related to hydrology and water quality (Rio Vista 2001).

Housing Element

Policy 6.8.A: The City shall promote energy and water conservation designs and features in residential developments.

Resource Conservation and Management Element

- Policy 10.5.I: The City shall ensure that groundwater resources are protected from contamination and overdraft.

- Policy 10.5.K: The City shall maintain its ability to meet its water supply requirements.
- Policy 10.5.M: The City shall encourage activities that maintain and improve drinking water quality.

Public Facilities and Services Element

- Policy 12.5.A: The City shall provide reliable and secure water sources for current and future residents.
- Policy 12.5.B: The City shall provide adequate water treatment capacity and infrastructure.
- Policy 12.8.A: The City shall develop and implement water conservation standards.

5.10.1.2 EXISTING CONDITIONS

Climate and Precipitation

Rio Vista has a Mediterranean climate, with rain in the winters and hot, dry summers, and Diablo winds occur throughout the year. Rio Vista's climate is typical of the northern Central Valley, just inland of the Bay Area. On average, annual high temperatures in Rio Vista range from 56 degrees Fahrenheit (°F) in December and January to 91°F in July. Low temperatures range from 41°F in December and January to 59°F in July and August (Weather Spark 2025). The city receives an average of approximately 15.5 inches of precipitation annually (Cal-Adapt 2025). Most precipitation falls during the winter months, with rare occurrences of summer storms.

Regional and Local Hydrology

Rio Vista is in the Sacramento Valley subregion of the Sacramento River Watershed. The Sacramento Valley subregion encompasses approximately 5,500 square miles. The Sacramento Valley represents that portion of the Sacramento River Hydrologic Region starting at Shasta Lake and Redding in the north and extending south to Sacramento and the Delta. The hydrology of the lower Sacramento River starts at Shasta Dam, which was completed in 1944 and created the largest reservoir in the Central Valley Project system with a storage capacity of 4.5 million acre-feet. Additionally, since 1964, more than 1 million acre-feet of flow from the Trinity River has been exported each year to the Sacramento River Basin. This water is diverted from Trinity Reservoir through Lewiston and Whiskeytown Reservoirs, and into the Sacramento River upstream of Redding. Shasta Dam operations have altered the timing of peak flow and base flow in the Sacramento River. Prior to Shasta Dam, monthly flows in the river reflected runoff patterns associated with winter precipitation and spring snowmelt, with peak flows generally

occurring in February, March, and April. Now, flows downstream of the dam are regulated and typically are lower in the winter season (when releases from the dam are reduced for flood protection) and higher in the summer (when water is being released for downstream irrigation needs).

Typical summer season flows in the Sacramento River are about 8,000 cubic feet per second (cfs) at Red Bluff and 12,000 cfs at Verona just north of Sacramento. The Sacramento Valley can be broadly characterized as a flow-through system, in that most of the water not consumed for irrigation or other purposes eventually returns to the river via various tributaries or percolates to groundwater that recharges local aquifers. Winter flood flows in the valley still occur and are a major management issue. From Butte City downstream, flooding in the Sacramento River is controlled by an elaborate system of levees and bypasses. When river flows reach a certain height, water spills into the Colusa, Sutter, and Yolo Bypass channels to minimize risk of flooding to adjacent agricultural lands and major urban centers (including the City of Sacramento).

The principal waterway in the Rio Vista area is the Sacramento River, which borders the city to the east. The city does not use surface water as a water source. Rio Vista does not import or export surface water supplies currently, and it expects to rely on groundwater. However, other water supply options are available to the city if needed in the future or in an emergency. Future water sources may include additional wells, recycled water, the Sacramento River, and purchased water from the North Bay Aqueduct (NBA). For the City to utilize NBA for supplemental water, an agreement would be required with the Solano County Water Agency (SCWA), which controls the NBA water in Solano County. If the City were to acquire rights to NBA water, it is likely the City would exchange such rights to that water for additional Sacramento River water if needed.

Solano Sub-basin

The City of Rio Vista draws its water supply from the Solano sub-basin (5-021.66) at the southeastern limit of the Sacramento Valley Groundwater Basin (5-021). The Solano sub-basin is bounded by the Sacramento River to the east, Putah Creek on the north, and the North Mokelumne and San Joaquin rivers on the south and southeast. The western edge of the basin is defined by the hydrologic divide between the Sacramento River and the San Francisco Bay drainages. The Suisun-Fairfield groundwater basin lies immediately to the west of the Solano sub-basin. The Solano sub-basin also contains at least two distinct freshwater-bearing zones: an upper alluvial layer, ranging from 60-130 feet thick; and the thicker Tehama formation, which provides most of the groundwater used in the area. Additional saline water-bearing formations underlie the Tehama formation. Primary

waterways in and bordering the basin include the Sacramento, Mokelumne, and San Joaquin Rivers, the Sacramento River Deep Water Ship Channel, and Putah Creek.

Groundwater

Groundwater from the Solano sub-basin has been the sole source of water supply for the city since 1893. Rio Vista does not import or export surface water supplies currently, and it expects to rely on groundwater through 2045. There are a total of 10 groundwater wells in the City of Rio Vista; however, only six are currently active with two storage tanks in service. The City of Rio Vista water distribution system consists of pipes ranging from 4 to 16 inches in diameter. The wells, tanks, treatment facilities, and over 40 miles of distribution pipelines are operated and maintained by certified operators (Rio Vista 2022). Table 5.10-1, *Summary of Groundwater Wells*, provides a summary of the existing wells including capacity, installation date, and depths of the existing wells.

Table 5.10-1 Summary of Groundwater Wells

Well Number	Installation Date	Power (hp)	Max Capacity (gpm)	Depth (ft)	Notes
7*	1953	25	500	424	No transducer, chorine injector in the pump system, or sanitary seal was installed
8*	1955	40	300	492	The sanitary seal was installed to a depth of 75 ft
9	1963	75	400	910	No transducer, chorine injector in the pump system, benzene concentrations above maximum contaminant level, used to meet summer peaks and fire flows, the sanitary seal was installed to a depth of 75 ft
10	1985	200	1,400	520	The Transducer inoperable, the chlorine injector system, portable generator for wells 9 and 10 are stored here
11	1995	100	1,200	370	8,500-gallon hydropneumatic tank, chlorine injector, emergency generator
12*	1995	100	200	452	8,700-gallon hydropneumatic tank, chlorine injector, emergency generator
13	2003	150	1,000	385	---
14	2005	50	800	485	Restricted for blending with Well 11 due to high levels of arsenic.
15	2008	125	1,200	560	---
16*	2017	--	1,000*	--	Arsenic treatment is required.

Source: Rio Vista 2022.
*Not in service

Water Quality

The city's water supply is disinfected using chlorine in the form of sodium hypochlorite at an average chlorine residual of 0.5-1.5 parts per million. The City's groundwater wells are the only source of supply available at present. More than 500 samples are drawn from numerous wells and locations throughout the water distribution system. Samples are also taken from the wellhead before chlorination. All sampling locations and requirements are determined and approved by DWR. Results from the approved testing laboratory are sent electronically to the State. These tests verify that the City's water supply continues to meet water quality standards established by State and federal regulatory agencies. The City of Rio Vista 2020 Consumer Confidence Report conforms to the federal regulation that requires each community water system to provide customers with annual information about the quality of the drinking water. This includes details about sources and quality, regulations that protect public health, programs that protect the water quality of our supply sources, and the treatment that ensures our drinking water meets all federal and State standards (Rio Vista 2022).

DWR does not consider the basin to be in overdraft. Additionally, the City has conducted, through a contract with ENGEO, a multi-year effort to monitor and report on the water levels, water quality, and overall functioning of the city's existing groundwater wells. Data from this monitoring indicates that groundwater levels are not in decline in the Rio Vista area and that well productivity is high and stable (Rio Vista 2022).

Flood Zones

FEMA Flood Zones

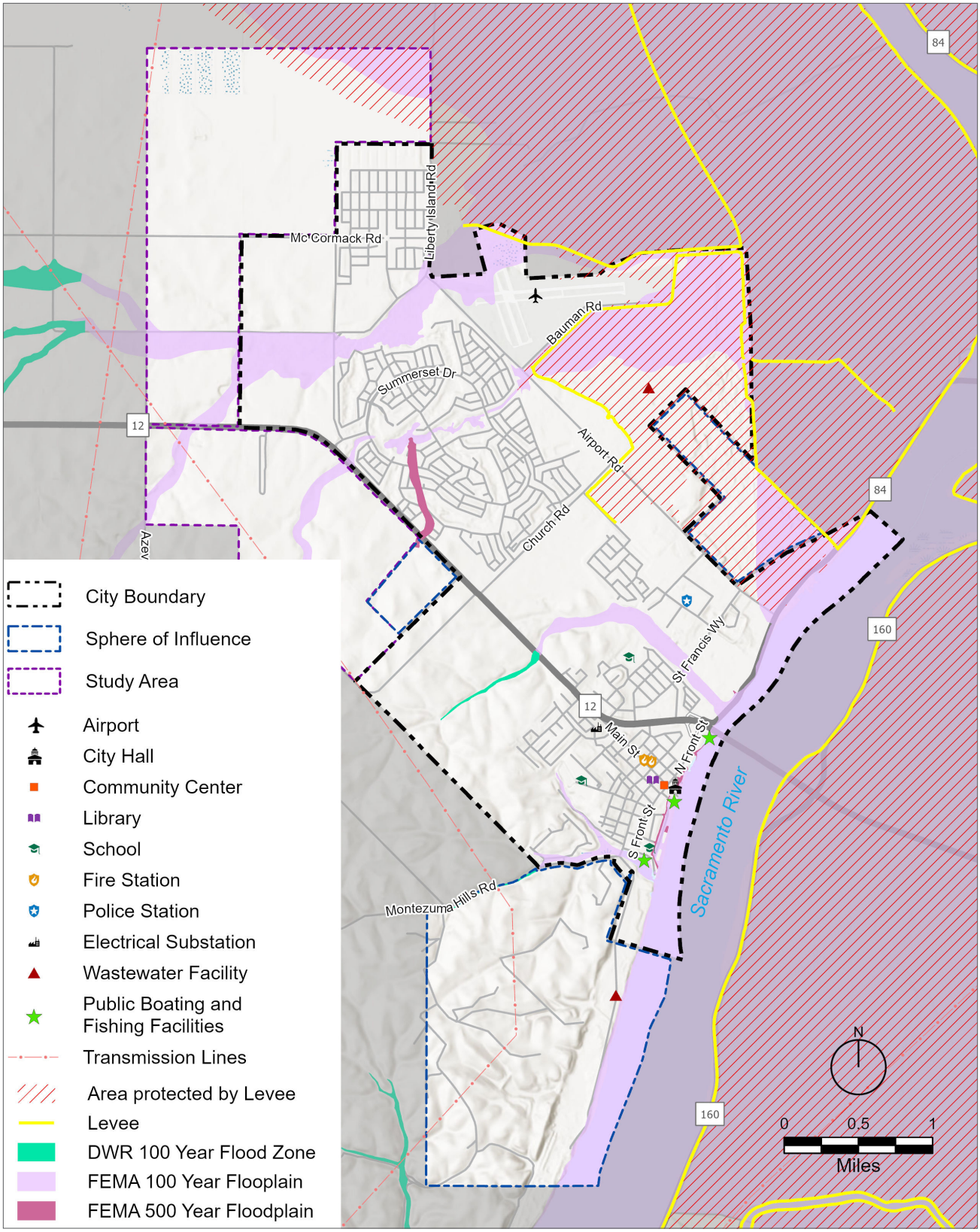
FEMA identifies floodplain zones to assist cities with mitigating flooding hazards through land use planning. FEMA also outlines specific regulations for any construction within a 100-year floodplain. The 100-year floodplain is defined as an area that has a 1 percent chance of being inundated in any given year. FEMA also prepares maps for 500-year floods that indicate a risk of 0.2 percent of flooding in any given year.

In some locations, FEMA also provides measurements of base flood elevations for the 100-year flood, which is the expected height that flood waters are likely to reach during a 100-year event. Base flood elevation is reported in feet above sea level. Depth of flooding is determined by subtracting the land's height above sea level from the base flood elevation. Areas within the 100-year flood hazard area that are financed by federally backed mortgages are subject to mandatory federal insurance requirements and building standards to reduce flood damage.

Areas at an elevated risk of flooding are generally divided into 100-, 200-, and 500-year flood zones. Most land in the city limits lies outside the 100-year flood zone and is partially protected by levees along the north side of the city. The 100- and 500-year floodplains in Rio Vista include areas along the shoreline of the Sacramento River as well as inland areas surrounding residential development. Public boating and fishing facilities along the shoreline lie within the 100- and 500-year floodplains. The northern portion of the city is in the 200-year flood zone, which also encompasses residential development and the wastewater facility. The 100-, 200-, and 500-year floodplains encompass the Rio Vista Golf Club. Figure 5.10-1, *FEMA and DWR Awareness Flood Hazard Zones*, shows the 100- and 500-year FEMA and DWR Awareness flood zones, and Figure 5.10-2, *USACE Flood Hazard Zones*, shows the U.S. Army Corp of Engineers (USACE) flood zones in and around Rio Vista.

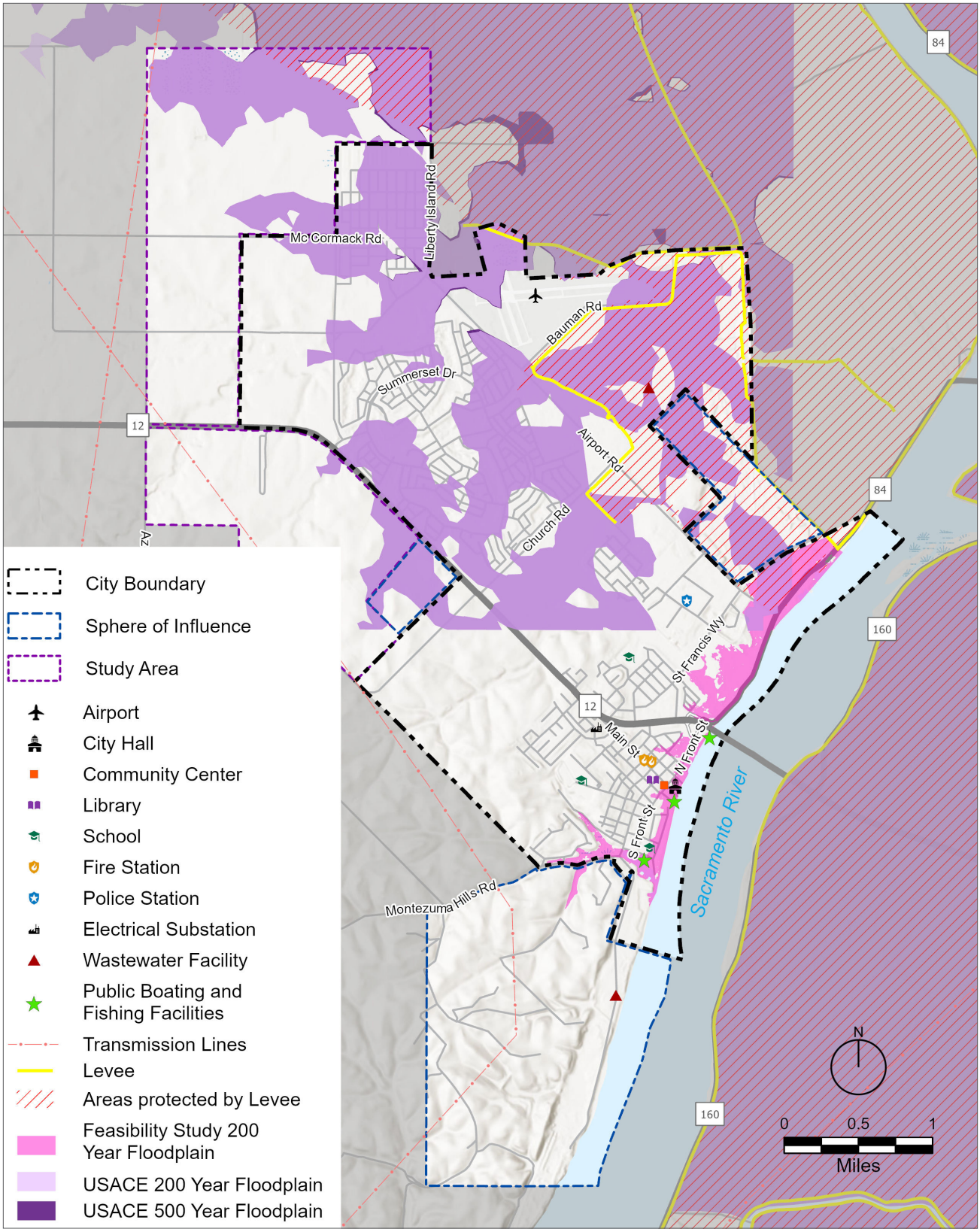
The 100- and 500-year floodplains in Rio Vista include the areas along the shoreline of the Sacramento River as well as inland areas that surround residential development. The 200-year floodplain encompasses a small portion of the Rio Vista Golf Club. The City of Rio Vista experiences chronic inland flooding in several places due to proximity to the Sacramento River shoreline. The historic core of the community, including areas around city hall, the Rio Vista Community Center, and fishing pier and roadways and infrastructure supporting these locations are vulnerable to the impacts of flooding due to inadequate storm drain capacity. The primary areas of concern in Rio Vista are the Edgewater Drive neighborhood that fronts the Sacramento River, the neighborhood off Tuscany Way, the Delta Marina area, and northeastern industrial area of the city. During heavy rainfall, large volumes of water will backflow from the Delta Marina, just south of Edgewater Drive, requiring sandbags to be placed at the south end of the cul-de-sac on Edgewater Drive.

The city has also been subject to flooding along the Sacramento River on numerous occasions in the past. The construction of major flood-control facilities and water diversion projects in the upper Sacramento River basin has moderated the high river flows and reduced flooding in Rio Vista. Though the Sacramento River is the primary source of flooding, other areas in the city are subject to flooding due to inadequate drainage during heavy rainstorms. One of these areas is Church Road at Airport Road. This roadway intersection often is flooded during periods of moderate to heavy rainfall, with water overtopping the roadway up to several inches. Much of the problem can be attributed to undersized culverts that are not properly aligned with the drainage ditches; this allows stormwater flows to bottleneck and flood the intersection.



Source: NLD 2022, BAM 2021, City of Rio Vista, Solano County 2021, PlaceWorks, 2023.

Figure 5.10-1
FEMA and DWR Awareness Flood Hazard Zones



Source: NLD 2022, BAM 2021, City of Rio Vista, Solano County 2021, PlaceWorks, 2023, Wood Rodgers, 2023.

Figure 5.10-2
USACE Flood Hazard Zones

Dam Inundation Zones

A dam failure is an uncontrolled release of water from a reservoir through a dam because of structural failures or deficiencies in the dam, usually associated with intense rainfall or prolonged flooding. Dam failures can range from minor to catastrophic and can potentially harm human life and property downstream from the failure. In addition, ecosystems and habitats can be destroyed because of waters flooding them. Although dam failures are very rare, these events are not unprecedented. There are four major causes of dam failures:

- **Overtopping:** These failures occur when a reservoir fills too high with water, especially in times of heavy rainfall, leaving water to rush over the top of the dam. Other causes of this type of failure include settling of the crest of the dam or spillway blockage.
- **Foundation defects:** These failures occur as a result of settling in the foundation of the dam, instability of slopes surrounding the dam, uplift pressures, and seepage around the foundation. All these failures result in structural instability and potential dam failure.
- **Piping and seepage failures:** These failures occur as a result of internal erosion caused by seepage and erosion along hydraulic structures such as the spillways. Erosion may also be caused by animal burrows and cracks in the dam structure.
- **Conduit and valve failure:** These failures occur as a result of problems with valves and conduits.

Many dam failures are the secondary result of other natural disasters, such as earthquakes, landslides, extreme storms, or heavy snowmelt. Other causes include equipment malfunction, structural damage, and sabotage.

Dams are constructed with safety features known as “spillways” that allow water to overtop the dam if the reservoir fills too quickly. Spillway overflow events, often referred to as “design failures,” result in increased discharges downstream and increased flooding potential. In a dam failure scenario, the greatest threat to life and property typically occurs in the areas immediately below the dam since flood depths and discharges generally decrease as the flood wave moves downstream. The primary danger associated with dam failure is the high-velocity flooding downstream of the dam and limited warning times for evacuation.

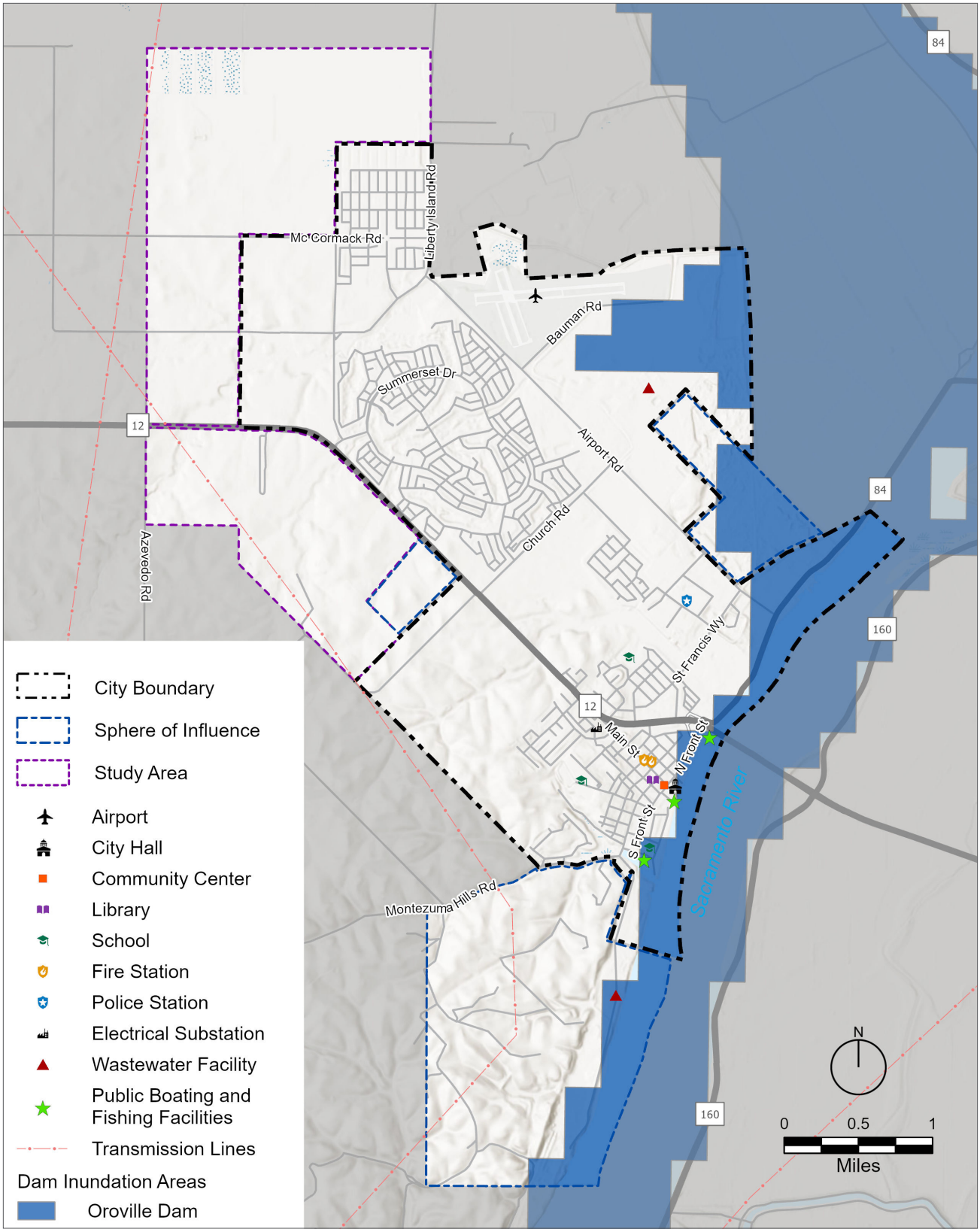
As mandated by the National Dam Inspection Act, the USACE has the authority and responsibility for conducting inspections of all federally managed dams. The purpose of these inspections is to check the structural integrity of the dam and associated appurtenant structures, ensuring protection of human life and property. Periodic inspections disclose conditions that might disrupt operation or dam safety. DWR provides oversight of the design, construction, and maintenance of over 1,200 jurisdictional-sized dams in California. The Oroville Dam, which is under the jurisdiction of DWR, is inspected on an annual basis to ensure it is safe, performing as intended, and is not developing issues.

Figure 5.10-3, *Dam Inundation*, illustrates areas in the city that would be affected by inundation if any of the dams in the Sacramento River watershed failed. In the event of a dam failure, land in the northeastern portion of the city, adjacent to the Rio Vista Municipal Airport, as well as the Rio Vista shoreline would likely flood.

Tsunamis and Seiches

A tsunami is a series of traveling ocean waves generated by a rare, catastrophic event, including earthquakes, submarine landslides, and submarine or shoreline volcanic eruptions. Tsunamis can travel over the ocean surface at speeds of 400 to 500 miles per hour or more, and wave heights at the shore can range from a few inches to 50 feet. Factors influencing the size and speed of a tsunami include the source and magnitude of the triggering event, as well as off-shore and on-shore topography. As tsunamis reach the shoreline, they may manifest as a fast-rising tide, a cresting wave, or a bore (i.e., a large turbulent wall-like wave). According to the California Tsunami Hazard Area Maps, the City of Rio Vista is not within a tsunami hazard area (CDC 2025).

A seiche is an oscillation wave generated in a closed or partially closed body of water, which can be compared to the back-and-forth sloshing in a bathtub. Seiches can be caused by winds, changes in atmospheric pressure, underwater earthquakes, tsunamis, or landslides into the water body. Bodies of water such as bays, harbors, reservoirs, ponds, and swimming pools can experience seiche waves up to several feet in height during a strong earthquake. However, for a seiche to occur in the Sacramento River, the wave frequency of a tsunami would have to match the resonance frequency of the Bay. The typical frequency of a tsunami is 10 minutes to an hour, and the resonance frequency of San Pablo and San Francisco Bay is somewhere between 1 and 10 hours. Therefore, tsunamis have frequencies too short to resonate within San Pablo Bay and San Francisco Bay and a seiche is unlikely.



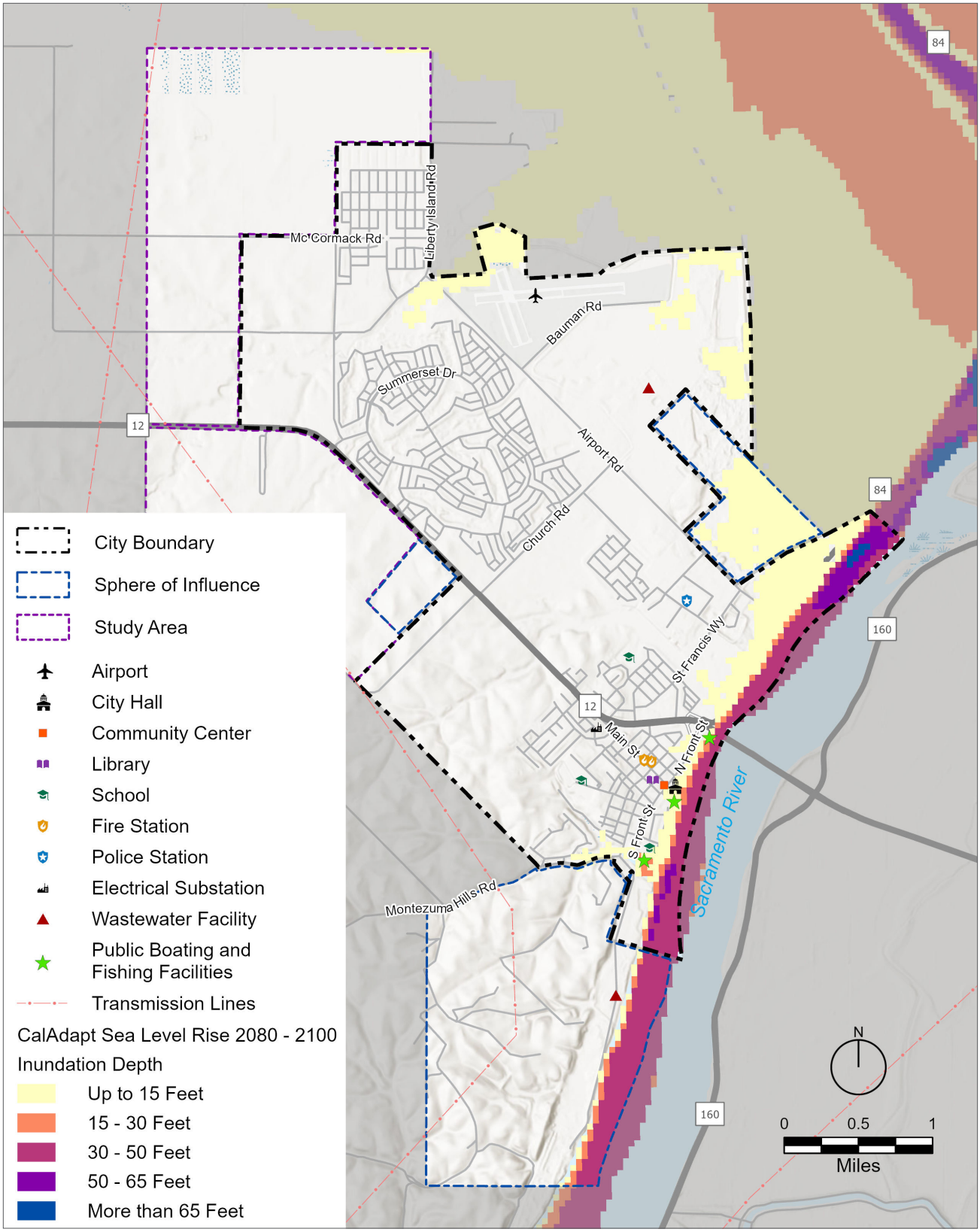
Source: California DWR 2021, City of Rio Vista, Solano County 2021, PlaceWorks, 2023.

Figure 5.10-3
Dam Inundation

Sea Level Rise

Sea level rise is an increase in the ocean's surface height relative to the land in a particular location. The two major causes of sea level rise are thermal expansion caused by warming of the ocean (since water expands as it warms) and increased melting of land-based ice, such as glaciers and ice sheets. Sea level rise is a gradual process, taking place over years or decades, affecting coastal communities and those along the San Francisco Bay as well as into the Sacramento/San Joaquin Delta region. Sea level rise has the potential to inundate homes, businesses, and infrastructure near shorelines and to cause erosion of shorelines over time. The sea level in the San Francisco Bay Area rose during the twentieth century at a rate of 2.0 millimeters per year, and projections suggest that it will rise at a higher rate during the twenty-first century. This is comparable to a global average during the twentieth century of 1.4 millimeters per year—a pace that has not been exceeded in any century since at least 2,800 years ago (San Francisco Bay Keeper 2022). Rising seas increase the risk of flooding, storm surge inundation, erosion and shoreline retreat, and wetland loss. The cities and infrastructure that line many shorelines are already vulnerable to damage from storms, which will likely increase as the sea level continues to rise and inundate areas further inland.

Along the Sacramento River shoreline, sea levels are projected to rise approximately 24 inches by 2050 and 84 inches by 2100 (Ocean Protection Council 2018). However, it is possible that sea levels could rise faster than these projections. Sea level rise projections for the late century (2080 to 2100) in Rio Vista are shown in Figure 5.10-4. Sea levels may increase enough by 2100 to permanently flood low-lying areas in the southern part of Rio Vista along the shoreline, including the Delta Marina and Rio Vista Pier, residential areas, and downtown Rio Vista. Rising sea levels can also cause the shoreline to flood more frequently and severely during storms or King Tide events. Because Sacramento River and Delta levels are higher during normal conditions due to sea level rise, shoreline floods can reach farther onto land. For example, a storm that has a one in five chance of occurring in a given year (known as a five-year storm) can create a temporary increase in sea levels of approximately 24 inches. This means that if sea levels rise by 24 inches during normal conditions, a 5-year storm event would create a temporary sea level rise of around 48 inches.



Source: Cal-Adapt 2021, City of Rio Vista, Solano County 2021, PlaceWorks, 2023.

Figure 5.10-4
Sea Level Rise Projections: 2080 to 2100

5.10.2 Thresholds of Significance

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:

HYD-1 Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.

HYD-2 Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.

HYD-3 Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i) Result in a substantial erosion or siltation on- or off-site.

ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.

iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

iv) Impede or redirect flood flows.

HYD-4 In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.

HYD-5 Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

5.10.3 Proposed General Plan Goals and Policies

The following goals, policies, and programs from the proposed General Plan Update are applicable to hydrology and water quality.

Open Space and Conservation Element

- **Policy OSC-4:** Protect open space areas of natural resource and scenic value, including wetlands, riparian corridors, floodplains, woodlands, and hillsides.

- **Policy OSC-5:** Encourage landowners and developers to preserve the integrity of existing terrain and natural vegetation in environmentally-sensitive areas, such as drainage corridors, native riparian habitats, wetlands, and prominent hilltops.
- **Policy OSC-6:** The City shall require that new development be designed and constructed to preserve the following types of areas and features as open space:
  - Scenic and trail corridors
  - Streams and riparian vegetation
  - Wetlands
  - Drainage corridors
  - Significant stands of vegetation
  - Wildlife corridors
  - Views of the Sacramento River

Public Facilities and Services Element

- **Policy PFS-4** Decommission the Beach Wastewater Treat Plant facility and complete all improvements necessary for the Northwest Wastewater Treatment Plant to serve the entire City through at least 2045.
- **Policy PFS-5** Require on-site stormwater management system (i.e., “green infrastructure”) design and Low Impact Development (LID) techniques, per the City to improve runoff water quality and decrease runoff volume.

Safety Element

- **Policy SE-4:** Ensure City infrastructure in 100-year, 200-year, and 500-year floodplains conform to existing 100-year and 200-year floodplain elevation standards and can adapt to increased flooding.
- **Policy SE-5:** Site critical and lifeline facilities, including police and fire stations, hazardous material storage facilities, bridges, and large public assembly halls, outside of hazardous, including flood hazard zones, sea level rise hazard areas, seismic and geologic hazard areas, and adjacent to hazardous materials facilities.
- **Policy SE-8:** Prohibit the location of new hazardous waste storage facilities or land uses that use hazardous materials in areas subject to flooding during 100-year and 200-year storm events.

5.10.4 Environmental Impacts

Impact 5.10-1: Implementation of the proposed project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. [Threshold HYD-1]

Construction Impacts

Construction consistent with the proposed project would involve soil disturbance, construction, and operation of land uses that could generate pollutants affecting stormwater. Clearing, grading, excavation, and construction activities have the potential to impact water quality through soil erosion and increasing the amount of silt and debris carried in runoff. Additionally, the use of construction materials, such as fuels, solvents, and paints may present a risk to surface water quality. Finally, the refueling and parking of construction vehicles and other equipment on-site during construction may result in oil, grease, or related pollutant leaks and spills that may discharge into the storm drain system.

To minimize these potential impacts, future development that involves the disturbance of one acre or more of land would require compliance with the Construction General Permit (CGP) Order WQ 2022-0057-DWQ, which includes the preparation and implementation of a SWPPP. A SWPPP requires the incorporation of BMPs to control sediment, erosion, and hazardous materials contamination of runoff during construction and prevent contaminants from reaching receiving water bodies. Examples of erosion and sediment-control BMPs are silt fences, sediment basins, dust suppressants, covering stockpiles, soil stabilization for construction entrances/exits, outlet tire wash and project scheduling to reduce soil disturbance. The CGP also requires that prior to the start of construction activities, the project applicant must file PRDs with the SWRCB, which includes a Notice of Intent, risk assessment, site map, annual fee, signed certification statement, and SWPPP. The construction contractor is required to maintain a copy of the SWPPP at the site and implement all construction BMPs identified in the SWPPP during construction activities. Prior to the issuance of a grading permit, the project applicant is required to provide proof of filing of the PRDs with the SWRCB. Submittal of the PRDs and implementation of the SWPPP throughout the construction phase of development pursuant to the proposed General Plan Update would address anticipated and expected pollutants of concern from construction activities.

Construction dewatering in areas of shallow groundwater may be required during excavation for some construction projects. In the event groundwater is encountered during construction, dewatering would be conducted locally, and according to the dewatering permit from the Central Valley Water Board. For future construction projects that disturb less than one acre of land, project applicants would still be required to implement an effective combination of erosion and sediment-control BMPs. As a result, water quality impacts associated with construction activities would be less than significant.

Operational Impacts

Potential future development and activities under the proposed project may result in long-term impacts to the quality of stormwater and urban runoff, subsequently impacting downstream water quality. Future development can potentially create new sources for runoff contamination through changing land uses. Consequently, future development in the city may have the potential to increase the post-construction pollutant loadings of certain constituent pollutants associated with the proposed land uses and their associated features, such as landscaping.

New development projects constructed under the proposed project that disturb one acre or more of land, and construction on smaller sites that are part of a larger project, would be required to comply with the National Pollution Discharge Elimination System (NPDES) General Permit for Discharges of Stormwater Associated with Construction Activities issued by the SWRCB. The Construction General Permit requires the development and implementation of a SWPPP. The SWPPP must contain a site map(s) that shows the construction site perimeter; existing and proposed buildings; lots; roadways; stormwater collection and discharge points; general topography, both before and after construction; and drainage patterns across the project area. The SWPPP must list BMPs that the discharger will use to protect stormwater runoff and the placement of those BMPs. Additionally, the SWPPP must contain a visual monitoring program; a chemical monitoring program for “non-visible” pollutants, to be implemented if there is a failure of BMPs; and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment.

BMPs to prevent or reduce potential erosion control could include mulch covering, temporary seeding, soil stabilizers, binders, fiber rolls, temporary vegetation, and permanent seeding. BMPs to control sediment that may be introduced into runoff could include silt fences, straw wattles, and sediment basins. BMPs for controlling run-on and runoff include control berms and swales that direct runoff away from sensitive areas.

Source control BMPs that prevent pollutants from entering runoff could include establishment of vehicle fueling and maintenance areas and material storage areas that are either covered or are designed to control runoff.

In addition, Policy PFS-5 requires on-site stormwater management system design and LID techniques, per the City to improve runoff water quality and decrease runoff volume. Furthermore, Municipal Code Chapter 13.20, *Storm Water Management*, intends to protect and promote the health, safety, and general welfare of the citizens of the city by controlling non-stormwater discharges. The City is authorized to issue permits, restricting or limiting the nature and/or volume of any discharge to the stormwater system. As a condition of project approval, the City may also require dischargers to develop and implement pollution prevention and BMPs for the reduction of pollutants in stormwater released from their premises or operations. These requirements may be a condition of a stormwater discharge permit or may be required without a permit being issued to the discharger.

As part of the statewide mandate to reduce trash within receiving waters, the City is required to adhere to the requirements of the California Trash Amendments. The requirements include the installation of trash full capture systems by 2030. A full capture system is defined as a treatment control, or series of treatment controls, including a multi-benefit project or a LID control that traps all particles that are 5 millimeters or greater and has a design treatment capacity of (1) at least the peak-flow rate from a one-year, one-hour storm event, or (2) appropriately sized to carry at least the same flows as the corresponding storm drain. Systems may be catch-basin inserts or other insert systems or high-flow capacity trash full capture systems that are designed to treat trash from large drainage areas.

Implementation of the proposed General Plan Update policies, such as Policy PFS-5, which requires on-site stormwater management system design and LID techniques to improve runoff water quality and decrease runoff volume, in conjunction with adherence to Municipal Code Chapter 13.20, as well as regional, state, and federal regulations, would ensure that potential future development under the proposed project would not violate any water quality standards or waste discharge requirements for both construction and operational phases, and impacts would be less than significant.

Level of Significance Before Mitigation: Impact 5.10-1 would be less than significant.

Mitigation Measures

No mitigation measures are required.

Impact 5.10-2: Implementation of the proposed project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin. [Threshold HYD-2]

Implementation of the proposed project would result in a significant environmental impact if it would substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level. Potential future development under the proposed General Plan Update could result in an increase in impervious surfaces, thus reducing groundwater recharge.

Groundwater Use

A more detailed description and analysis of the City's overall water supply and demand is provided in Section 5.19, *Utilities and Service Systems*. The Solano Subbasin is designated by DWR as a medium-priority groundwater basin and is not in critical overdraft. Solano Subbasin GSA Collaborative is made up of five GSAs for the subbasin and the GSP for the subbasin was approved by DWR in January 2024.

Groundwater from the Solano Subbasin has been the sole source of water supply for the city since 1893. The City of Rio Vista draws its water supply from the Solano Subbasin (5-021.66) at the southeastern limit of the Sacramento Valley Groundwater Basin (5-021). Rio Vista does not import or export surface water supplies currently, and it expects to rely on groundwater through 2045.

Based on the Solano Integrated Hydrologic Model, it is unlikely that any beneficial users of surface water would be significantly and unreasonably adversely affected by groundwater management under any of the projected future conditions evaluated, including under climate change. Similarly, changes in subsurface flows under the projected scenarios are small and will not impede the ability of adjacent subbasins to achieve or maintain sustainability. Therefore, the sustainable yield is estimated to total about 190,000 acre-feet per year (AFY) for the combined sustainable yield of the primary aquifers, which is equal to the volume of groundwater extracted annually in the subbasin under the projected model scenario with future land use and 2070 climate change conditions. It is unlikely that any beneficial users of surface water would be significantly and unreasonably adversely affected by groundwater management under any of the projected future conditions evaluated, including under climate change (Solano Collaborative 2022).

Similarly, changes in subsurface flows under the projected scenarios are small and will not impede the ability of adjacent subbasins to achieve or maintain sustainability. Therefore, the sustainable yield is estimated to total about 190,000 AFY (for the combined sustainable yield of the primary aquifers), which is equal to the volume of groundwater extracted annually in the subbasin under the projected model scenario with future land use and 2070 climate change conditions.

With buildout of the proposed project, the City anticipates an increase in the water demand of approximately 1,333 AFY (see Section 5.19, *Utilities and Service Systems*, for calculation details). According to Rio Vista's 2020 Urban Water Management Plan (UWMP), the City has 10 groundwater wells and currently only 6 actively supply water to the City's distribution system (Rio Vista 2022). Rio Vista does not import or export surface water supplies currently, and it expects to rely on groundwater through 2045. Furthermore, groundwater is the source of only a small portion of water for other water users and suppliers in this Solano Subbasin. Other water users in the Solano Subbasin that currently rely on groundwater for some portion of their supply have other sources to rely on, including the NBA. It is likely that the Solano County Water Agency (SCWA) member agencies will be able to meet planned demands from these sources and thereby decrease reliance on groundwater. Thus, overall groundwater use in the basin is not anticipated to see a significant increase (Rio Vista 2022).

If monitoring indicates an increase in groundwater withdrawal is beginning to cause groundwater level declines, conjunctive use planning will enable the area's water suppliers, including the City, to limit groundwater withdrawal to sustainable levels. Groundwater management efforts, adequate overall regional supplies, and the ability of the SCWA agencies to exchange and purchase additional surface water supplies will enable proactive management of groundwater supplies through 2045 (Rio Vista 2022).

The City's 2020 Urban Water Management Plan demonstrates adequate capacity to accommodate the demand through 2045 through a resilient portfolio that includes recycled water and conservation programs. Overall long-term trends in groundwater levels are stable in the Solano Subbasin, with some declining levels evident in localized areas in the northwestern part of the subbasin. Furthermore, there is no evidence that groundwater levels are chronically declining in the Solano Subbasin, and they are not expected to do so in the future (Rio Vista 2022).

Future development with buildout of the proposed project would also be required to implement the water-efficient requirements specified in the CALGreen and California Plumbing Codes and the MWELO requirements for water-efficient landscaping. Future projects that meet the criteria under California Water Code Section 10912 would be required to prepare a Water Supply Assessment that demonstrates that project water demands would not exceed water supplies. In addition, residential, commercial, and industrial water usage can be expected to decrease in the future as a result of continued implementation of water conservation practices.

Groundwater Recharge

Although future development pursuant to the proposed project would increase the amount of impervious surfaces and could potentially impact groundwater recharge, these projects would be required to implement BMPs and LID measures in accordance with the MS4 Permit. Examples of BMPs that minimize the impact of impervious surfaces include permeable pavement, drainage to landscaped areas and bioretention areas, and the collection of rooftop runoff in rain barrels or cisterns. These measures also increase the potential for groundwater recharge. In addition, the GSP prepared for the Solano Subbasin includes groundwater management strategies and multi-benefit recharge projects that would promote groundwater recharge (Solano Collaborative 2022).

Compliance with the City's requirements for new construction, water-efficient landscaping, and the proposed General Plan Update policies, such as Policy OSC-5, which encourages landowners and developers to preserve the integrity of existing terrain and natural vegetation in environmentally-sensitive areas, such as drainage corridors, native riparian habitats, and wetlands, as well as Policy OSC-6, which requires that new development be designed and constructed to preserve streams and riparian vegetation, wetlands, and drainage corridors, would protect future groundwater resources. Therefore, the proposed project would not significantly interfere with groundwater recharge and would not substantially deplete groundwater supplies, and impacts would be less than significant.

Mitigation: Impact 5.10-2 would be less than significant.

Mitigation Measures

No mitigation measures are required.

Impact 5.10-3: Implementation of the proposed project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: i) result in substantial erosion or siltation on- or off-site; ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or iv) impede or redirect flood flows. [Threshold HYD-3]

New development or redevelopment within the city and changes in land use could result in an increase in impervious surfaces. This, in turn, could result in an increase in stormwater runoff, higher peak discharges to storm drains, the potential to cause nuisance flooding in areas without adequate drainage facilities, and the potential to cause erosion or siltation in streams. Increases in tributary flows can exacerbate creek bank erosion or cause destabilizing channel incision.

Erosion and Siltation

All potential future development pursuant to the proposed project would be required to implement construction-phase BMPs as well as post-construction site design, source control measures, and treatment controls in accordance with the requirements of the CGP, the Rio Vista Municipal Code Chapter 13.24, and MS4 Permit. Typical construction BMPs include silt fences, fiber rolls, catch basin inlet protection, water trucks, street sweeping, and stabilization of truck entrance/exits. Each new development or redevelopment project that disturbs one or more acres of land would be required to prepare and submit a SWPPP to the SWRCB that describes the measures to control erosion and sedimentation due to construction activities.

Once potential future development projects have been constructed, there are C.3 requirements in the MS4 Permit for new development or redevelopment projects that must be implemented and include site design measures, source control measures, LID, and stormwater treatment measures that address stormwater runoff and would reduce the potential for erosion and siltation. LID measures include the use of permeable pavements, directing runoff to pervious areas, and the construction of bioretention areas. Adherence to the streambed alteration agreement process under Sections 1600 to 1616 of the California Fish and Game Code would further reduce erosion and siltation impacts that may occur due to streambed alterations. Compliance with these regional and local

regulatory requirements will ensure that erosion and siltation impact from new development and redevelopment projects would be less than significant.

Flooding On- or Off-Site

New development and/or redevelopment and changes in land uses could result in an increase in impervious surfaces, which in turn could result in an increase in stormwater runoff, higher peak discharges to drainage channels, and the potential to cause nuisance flooding in areas without adequate drainage facilities. All potential future development under the proposed project must comply with the requirements of the MS4 Permit. Regulated projects must implement BMPs, including LID BMPs and site design BMPs, which effectively minimize imperviousness, retain or detain stormwater on-site, decrease surface water flows, and slow runoff rates. Projects that may impact downstream channels and creeks must also adhere to the hydromodification requirements of the MS4 Permit. Adherence to these regulatory requirements would minimize the amount of stormwater runoff from new development and redevelopment in the city. Therefore, potential future development under the proposed project would not result in flooding on- or off-site, and impacts would be less than significant.

Stormwater Drainage System Capacity

As stated in the previous impact discussions, an increase in impervious surfaces with new development or redevelopment could result in increases in stormwater runoff, which in turn could exceed the capacity of existing or planned stormwater drainage systems.

Potential future development that disturbs one acre or more of land, and construction on smaller sites that are part of a larger project, would be required to comply with the MS4 Permit issued by the SWRCB. The Construction General Permit requires the development and implementation of a SWPPP. The SWPPP must contain a site map(s) that shows the construction site perimeter; existing and proposed buildings; lots; roadways; stormwater collection and discharge points; general topography, both before and after construction; and drainage patterns across the project area. The SWPPP must list BMPs that the discharger will use to protect stormwater runoff and the placement of those BMPs. Additionally, the SWPPP must contain a visual monitoring program; a chemical monitoring program for “non-visible” pollutants, to be implemented if there is a failure of BMPs; and a sediment monitoring plan if the site discharges directly to a water body on the 303(d) list for sediment.

This would minimize the amount of stormwater runoff from new development and redevelopment sites in the city. Also, as part of the permitting process, future development would be subject to Municipal Code Chapter 13.20, *Storm Water Management*. The City is authorized to issue permits, restricting or limiting the nature and/or volume of any discharge to the stormwater system. As a condition of project approval, the City may also require dischargers to develop and implement pollution prevention and best management practices for the reduction of pollutants in stormwater released from their premises or operations. These requirements may be a condition of a stormwater discharge permit or may be required without a permit being issued to the discharger.

With implementation of these provisions for new development and redevelopment projects, the proposed project would not result in significant increases in runoff that would exceed the capacity of existing or planned storm drain facilities, and the impact is less than significant.

Redirecting Flood Flows

The discussion regarding on- and off-site flooding is also applicable to the analysis of impeding or redirecting flood flows. Since new development projects are required to comply with the MS4 Permit requirements and retain stormwater on-site via the use of bioretention facilities or other stormwater treatment measures, any flood flows would also be retained temporarily on-site, which would minimize the potential for flooding impacts. Impact 5.10-4 discusses the potential for impeding or redirecting flood flows with development in areas within the 100-year floodplain. Based on these discussions, impacts related to impeding or redirecting flood flows would be less than significant.

With compliance with the MS4 Permit, the City's stormwater requirements, and proposed project goals and policies, such as Policy PFS-5, which requires on-site stormwater management system design and LID techniques, per the City to improve runoff water quality and decrease runoff volume, potential future development under the proposed project would not result in substantial erosion or siltation and would not substantially increase the rate of surface runoff which would result in flooding, impede or redirect flood flows, or exceed the capacity of the drainage system. LID practices include bioretention facilities or rain gardens, grass swales and channels, vegetated rooftops, rain barrels, and permeable pavements. Impacts would be less than significant.

Level of Significance Before Mitigation: Impact 5.10-3 would be less than significant.

Mitigation Measures

No mitigation measures are required.

Impact 5.10-4: Implementation of the proposed project would not risk release of pollutants due to project inundation if in a flood hazard, tsunami, or seiche zone. [Threshold HYD-4]

Flood Hazard Zones

Buildout pursuant to the proposed project could involve development of some projects in FEMA 100-year flood zones. As shown on Figure 5.10-1, the 100- and 500-year floodplains in Rio Vista include areas along the shoreline of the Sacramento River as well as inland areas surrounding residential development. Public boating and fishing facilities along the shoreline lie within the 100- and 500-year floodplains. As shown on Figure 5.10-2, the northern portion of the city is in the 200-year flood zone, which also encompasses residential development and the wastewater facility.

Future development within the 100-, 200-, and 500-year flood zones would be subject to the floodplain requirements in Rio Vista Municipal Code Chapter 15.16, *Flood Hazard Protection*, which outlines methods and provisions for managing flood-related risks and protecting both property and natural flood mitigation systems. Furthermore, a development permit shall be obtained prior to construction or development within any area of special flood hazards. Compliance with FEMA's National Flood Insurance Program requirements and Rio Vista Municipal Code requirements would reduce potential flood hazards and ensure that pollutants are not released during flood inundation.

Dam Inundation Zones

As shown in Figure 5.10-3, in the event of a dam failure, land in the northeastern portion of the city, adjacent to the Rio Vista Municipal Airport, as well as the Rio Vista shoreline would likely flood. The potential for a dam failure event in Rio Vista is likely to remain a risk in future years, although the odds of such events are expected to remain very low. In addition, dam owners are required to maintain emergency action plans (EAPs) that include procedures for damage assessment and emergency warnings. An EAP identifies potential emergency conditions at a dam and specifies preplanned actions to help minimize property damage and loss of life should those conditions occur. EAPs contain procedures and information that instruct dam owners to issue early warning and notification messages to downstream emergency management authorities, such as the

City's Emergency Services Department. Because the likelihood of catastrophic dam failure is very low, impacts related to the release of pollutants due to dam inundation are considered less than significant.

Tsunamis and Seiches

According to the California Tsunami Hazard Area Maps, the City of Rio Vista is not within a tsunami hazard area (CDC 2025). Bodies of water such as bays, harbors, reservoirs, ponds, and swimming pools can experience seiche waves up to several feet in height during a strong earthquake. However, for a seiche to occur in the Sacramento River, the wave frequency of a tsunami would have to match the resonance frequency of the bay.

The typical frequency of a tsunami is 10 minutes to an hour, and the resonance frequency of San Pablo and San Francisco Bay is somewhere between 1 to 10 hours. Therefore, tsunamis have frequencies too short to resonate within San Pablo Bay and San Francisco Bay and a seiche is unlikely. Therefore, there is no potential for the release of pollutants due to a tsunami.

The proposed General Plan Update policies would serve to minimize potential adverse impacts related to erosion, flood flows, and storm drain capacity, which in turn would address the potential for flooding, dam inundation, and seiches. Additionally, Chapter 15.16 of the Rio Vista Municipal Code outlines methods and provisions for managing flood-related risks and protecting both property and natural flood mitigation systems.

Sea-Level Rise

Similar to flood hazard zones, implementation of the proposed project could involve development of some projects in areas that will be inundated by sea level rise and associated coastal flooding. Along the Sacramento River shoreline, sea levels are projected to rise approximately 24 inches by 2050 and 84 inches by 2100 (Ocean Protection Council 2018). However, it is possible that sea levels could rise faster than these projections. As shown on Figure 5.10-4, sea levels may increase enough by 2100 to permanently flood low-lying areas in the southern part of Rio Vista along the shoreline, including the Delta Marina and Rio Vista Pier, residential areas, and downtown Rio Vista.

Sea level rise is also expected to raise groundwater levels, inundating areas with contaminated soils. A review of the leaking underground storage tank (LUST) list produced by the RWQCB and the Department of Toxic Substances Control (DTSC) EnviroStor database indicates 15 LUST cleanup sites with closed cases. Given that some contaminated sites in the city are located near the shoreline, rising groundwater

associated with sea level rise may cause the release of pollutants. Future risk from exposure to contaminated soil remains a concern due to past groundwater and soil contamination in the city and surrounding area. Sea level rise and associated groundwater rise are an effect of the environment on the project.

The California Supreme Court has determined that the evaluation of the significance of project impacts under CEQA should focus on the potential impacts of the proposed project on the environment, including whether the proposed project may exacerbate any existing environmental hazards. Sea level rise is an existing environmental hazard in Solano County. The discussion in this section explains the potential of the proposed project to exacerbate impacts from sea level rise. However, the effects of sea level rise on the proposed project are not subject to CEQA review following the *California Building Industry Association vs. Bay Area Air Quality Management District* (CBIA vs. BAAQMD) case. Therefore, this EIR does not make a finding regarding level of impact from sea level rise.

In conjunction with the implementation of the City's Municipal Code requirements, and activation of the County's emergency response system in the case of a dam failure, the potential impact that there would be a release of pollutants from flooding, sea level rise, dam inundation, or seiches would be less than significant.

Level of Significance Before Mitigation: Impact 5.10-4 would be less than significant.

Mitigation Measures

No mitigation measures are required.

Impact 5.10-5: The proposed project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. [Threshold HYD-5]

Adherence to the State CGP, the Rio Vista Municipal Code, and the NPDES Construction Permit would ensure that surface and groundwater quality are not adversely impacted during construction and operation of new development pursuant to the proposed project. As a result, site development would not obstruct or conflict with the implementation of the Central Valley RWQCB's Basin Plan.

The City's water supply comes solely from local groundwater. Groundwater from the Solano Subbasin has been the sole source of water supply for the city since 1893. The Solano Subbasin is designated by DWR as a medium-priority groundwater basin and is not in critical overdraft. Rio Vista does not import or export surface water supplies

currently, and it expects to rely on groundwater through 2045. Solano Subbasin GSA Collaborative is made up of five GSAs for the subbasin and the GSP for the subbasin was approved by DWR in January 2024.

With buildout of the proposed project, the City anticipates an increase in the groundwater pumping rate of approximately 1,333 AFY. When added to the existing groundwater pumping rate of 2,025 AFY, the future groundwater demand is less than the sustainable yield in the GSP of 190,000 AFY for the Central Valley RWQCB's Basin Plan. A pumping rate increase of up to 1,333 AFY is not anticipated to exceed the groundwater subbasin's sustainable yield. Other water users in the Solano Subbasin that currently rely on groundwater for some portion of their supply have other sources to rely on, including the NBA. It is likely that the Solano County Water Agency (SCWA) member agencies will be able to meet planned demands from these sources and thereby decrease reliance on groundwater. Thus, overall groundwater use in the basin is not anticipated to see a significant increase (Rio Vista 2022). Overall long-term trends in groundwater levels are stable in the Solano Subbasin, with some declining levels evident in localized areas in the northwestern part of the subbasin. Furthermore, there is no evidence that groundwater levels are chronically declining in the Solano Subbasin, and they are not expected to do so in the future (Rio Vista 2022).

If monitoring indicates an increase in groundwater withdrawal is beginning to cause groundwater level declines, conjunctive use planning will enable the area's water suppliers, including the City, to limit groundwater withdrawal to sustainable levels. Groundwater management efforts, adequate overall regional supplies, and the ability of the SCWA agencies to exchange and purchase additional surface water supplies will enable proactive management of groundwater supplies through 2045 (Rio Vista 2022). In addition, the GSP prepared for the Solano Subbasin includes groundwater management strategies and multi-benefit recharge projects that would promote groundwater recharge (Solano Collaborative 2022). Therefore, the proposed project would not obstruct or conflict with a groundwater management plan.

With adherence to the proposed General Plan Update policies such as Policy OSC-5, which encourages landowners and developers to preserve the integrity of existing terrain and natural vegetation in environmentally-sensitive areas, such as drainage corridors, native riparian habitats, and wetlands, as well as Policy OSC-6, which requires that new development be designed and constructed to preserve streams and riparian vegetation, wetlands, and drainage corridors, and continued compliance with State and City regulatory requirements, the proposed project would not obstruct or conflict with a water

quality control plan or groundwater management plan, and impacts would be less than significant.

Level of Significance Before Mitigation: Impact 5.10-5 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.10.5 Cumulative Impacts

The geographic context used for the cumulative assessment of hydrology, drainage, flooding, and water quality is the Sacramento River Watershed. New development in these watersheds could increase impervious areas, thus increasing runoff and flows into the storm drainage systems. However, future development would be required to comply with the MS4 Permit, implement BMPs that direct drainage to landscaped areas, and integrate bioretention facilities into the site design. Implementation of these BMPs on a regional basis would reduce cumulative impacts to hydrology and drainage to less than cumulatively considerable.

All cumulative projects would be required to comply with various federal, state, and local (City and county) water quality regulations that control construction-related and operational discharge of pollutants into stormwater. The water quality regulations implemented by the Central Valley RWQCB take a basin-wide approach and consider water quality impairment in a regional context. For example, the NPDES Construction Permit ties receiving water limitations and basin plan objectives to terms and conditions of the permit, and the MS4 Permit encompasses all the surrounding municipalities to manage stormwater systems and be collectively protective of water quality. Projects in these watersheds would implement structural and nonstructural source-control BMPs that reduce the potential for pollutants to enter runoff, and treatment-control BMPs that remove pollutants from stormwater. Therefore, cumulative water quality impacts would be less than significant after compliance with these permit requirements, and impacts would not be cumulatively considerable.

Projects in the watersheds may be constructed within 100-year flood zones or dam inundation zones. Projects within the 100-year flood zone would be mandated to purchase flood insurance through the National Flood Insurance Program. In addition, Solano County and other jurisdictions within these watersheds regulate development within flood zones in a similar manner to Rio Vista Municipal Code Chapter 15.16, *Flood*

Hazard Protection, and in compliance with FEMA standards to limit cumulative flood hazard impacts.

There have been no dam failures in Rio Vista or Solano County and the risk of a catastrophic dam failure causing flooding to downstream residents is very low. In addition, in the case of an imminent dam failure, the Solano County Emergency Operations Plan would be activated to ensure that residents and businesses are notified and if necessary evacuated in a timely manner. Therefore, cumulative impacts to hydrology, drainage, and flooding would be less than significant, and impacts of the proposed project would not be cumulatively considerable.

5.10.6 Level of Significance Before Mitigation

After implementing regulatory requirements and standard conditions of approval, all impacts would be less than significant.

5.10.7 Mitigation Measures

No mitigation measures are required.

5.10.8 Level of Significance After Mitigation

Impacts would be less than significant.

5.10.9 References

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5.11 LAND USE AND PLANNING

This chapter evaluates the potential environmental effects related to land use and planning associated with implementation of the Proposed General Plan.

5.11.1 Environmental Setting

5.11.1.1 REGULATORY BACKGROUND

This section summarizes key state and local regulations and programs related to land use in the City of Rio Vista. There are no federal regulations pertaining to land use that apply to the proposed project.

State

State Planning Law and California Complete Streets Act

State Planning Law (California Government Code Section 65300) requires every city in California to adopt a comprehensive, long-term general plan for physical development of a city and its sphere of influence. A general plan should consist of an integrated and internally consistent set of goals and policies that are grouped by topic into a set of elements and are guided by a citywide vision. State law requires that a general plan address eight required elements (Land Use, Circulation, Housing, Conservation, Open Space, Noise, Safety, and Environmental Justice[1]), but allows some discretion on the arrangement and content. Additionally, each of the specific and applicable requirements in state planning law should be examined to determine if there are environmental issues in the community that the general plan should address, including but not limited to hazards and flooding.

Additionally, on September 30, 2008, Assembly Bill (AB) 1358, the California Complete Streets Act, was signed into law, becoming effective January 1, 2011. AB 1358 places the planning, designing, and building of complete streets into the larger planning framework of the general plan by requiring jurisdictions to amend their circulation elements to plan for multimodal transportation networks.

1 Senate Bill 1000 (SB 1000) requires local governments to identify environmental justice communities (disadvantaged communities) in their jurisdictions and address environmental justice in their general plans in order to facilitate transparency and public engagement in local governments' planning and decision-making processes, reduce harmful pollutants and the associated health risks in environmental justice communities, and promote equitable access to health-inducing benefits.

Airport Land Use Compatibility

Pursuant to Section 21676 of the Public Utilities Code, prior to the amendment of a general plan or specific plan, or the adoption or approval of a zoning ordinance or building regulation within the planning boundary established by the airport land use commission, the local agency shall first refer the proposed action to the Airport Land Use Commission. If the commission determines that the proposed action is inconsistent with the commission's plan, the referring agency shall be notified. The local agency may, after a public hearing, propose to overrule the commission by a two-thirds vote of its governing body if it makes specific findings that the proposed action is consistent with the intent to minimize the public's exposure to excessive noise and safety hazards within areas around public airports.

Delta Protection Act of 1992

The Delta Protection Act, passed in 1992, created the Delta Protection Commission and declared that the Delta is a natural resource containing irreplaceable resources, and that it is the policy of the State to recognize, preserve, and protect those resources of the Delta.

Portions of the City of Rio Vista generally northeast of Airport Road are within the Primary Zone of the Delta. The Delta Protection Commission is required to review amendments to land use regulations in the Delta Primary Zone for consistency with the provisions of California Public Resources Code Section 29763.5.

Regional

Association of Bay Area Governments Sustainable Communities Strategy

The Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC), in coordination with the Bay Area Air District and the Bay Conservation and Development Commission, have been given the joint responsibility for creating the Sustainable Communities Strategy (SCS) for the nine-county Bay Area region. Each of the agencies involved in the SCS has a different role in regional governance. ABAG primarily deals with regional land use, housing, environmental quality, and economic development issues, while MTC is tasked with regional transportation planning, coordinating, and financing. The air district is responsible for regional air pollution regulation. The Bay Conservation and Development Commission is focused on preserving, enhancing, and ensuring the responsible use of the San Francisco Bay.

These agencies jointly created the SCS for the Bay Area, "Plan Bay Area." Plan Bay Area lays out a development scenario for the nine-county Bay Area region that works to align transportation and land use planning to reduce vehicle miles traveled (VMT) through modified land use patterns. The plan projects growth and development patterns through 2050 and was recently adopted in October 2021 (ABAG/MTC 2021).

The SCS is a land use strategy required to be included as part of the Bay Area's 25-year Regional Transportation Plan (RTP). By federal law, the RTP must be internally consistent. State law also requires that the updated eight-year regional housing need allocation prepared by ABAG is consistent with the SCS.

While the SCS does not directly govern land uses within Rio Vista, there are a number of benefits available to the City from being consistent with this plan, including: streamlining of CEQA pursuant to SB 375, the Sustainable Communities and Climate Protection Act of 2008, for applicable transit priority and residential or mixed-use projects, as well as high eligibility for transportation funding, provided that policies and land use patterns proposed in the General Plan align with the goals of the SCS.

Plan Bay Area 2050

Plan Bay Area lays out a development scenario for the nine-county Bay Area region that works to align transportation and land use planning to reduce VMT through modified land use patterns. The plan projects growth and development patterns through 2050 and was last adopted in October 2021 (ABAG/MTC 2021).

Delta Plan

The Delta Plan, adopted by the Delta Stewardship Council on May 16, 2013, is a comprehensive long-term management plan for the Sacramento-San Joaquin River Delta. The Delta Plan includes rules and recommendations that support the State's goals for the Delta to: (1) improve water supply; (2) protect and restore a vibrant and healthy Delta ecosystem; and (3) preserve, protect, and enhance the unique agricultural, cultural, and recreational characteristic of the Delta. The 14 regulatory policies in the Delta Plan are enforceable through regulatory authority in the Delta Reform Act, enacted as part of SB X7. The City of Rio Vista is a part of the Delta Community (DSC 2019).

Portions of the City of Rio Vista generally northeast of Airport Road are located within the Primary Zone of the Delta. This area includes some dry pasture lands, active sand and gravel quarries, State Department of Water Resources stockpiles of rock for repair

of levee banks, and riparian/wetland zones that have become established over the past 40 years that offer the potential for nature trails. These lands would remain undeveloped or only developed for uses directly related to agriculture (Rio Vista 2024). Any updates to land use designations in the Primary Zone must be determined to be consistent with the policies and regulations of the Delta Plan.

Travis Air Force Base Land Use Compatibility Plan

The Travis Air Force Base (AFB) Land Use Compatibility Plan (LUCP) includes policies designed to ensure future land uses in surrounding area will remain compatible with the realistically foreseeable, ultimate potential aircraft activity at the base. Travis AFB is in Fairfield, approximately 17 miles northwest of Rio Vista's city limits. The Solano County lies within the Airport Influence Area for the LUCP. The Travis AFB LUCP was most recently adopted by the Solano Airport Land Use Commission (ALUC) in October 2015. The earlier plan was called, Comprehensive Airport Land Use Plan: Travis Air Force Base, was adopted by the ALUC in 1990, and amended in 1994 (SCDRM 2015).

Local

Rio Vista Airport Land Use Compatibility

The Rio Vista Airport Land Use Compatibility Plan (ALUCP) updates land use compatibility policies applicable to future development in the vicinity of Rio Vista Airport. The policies included in this plan are designed to ensure that future land uses in the surrounding area will remain compatible with the foreseeable aircraft at the airport. Since the adoption of the 1988 Rio Vista ALUCP, goals and policies have been developed to better address noise, overflight safety, and airspace surrounding the airport (Rio Vista 2018).

Waterfront Specific Plan

The Waterfront Specific Plan establishes a planning framework for the redevelopment of approximately 15 acres of land in the heart of downtown Rio Vista. The Waterfront District seeks to build on the historic character of the community, enrich the downtown business environment, and provide a diverse system of public open space. The plan provides design guidelines for new development that reflect the unique character of the region. The City has incorporated a review process that requires its review and approval of building placement and layout, architecture, landscaping, parking, signage, and other proposed construction, impacting the function and visual appearance of the project (Rio Vista 2007).

City of Rio Vista Municipal Code

Title 17: Zoning

The City of Rio Vista Municipal code is the set of laws and ordinances adopted by the City Council. Title 17 (Zoning) of the municipal code regulates physical development in the community and enacts the goals and policies of the General Plan by classifying and regulating land uses. The zoning ordinance identifies different zoning designations, contains the development standards that apply to each, and discusses permitting requirements and document review.

City of Rio Vista 2001 General Plan

The following policies are in the existing General Plan regarding land use and planning.

Planning Constraints & Boundaries Element

- **Policy 3.1.A:** The planning area for 2020 shall coincide with the line shown on the official General Plan Land Use Map in the Land Use element and the Boundaries Map in this Element.
- **Policy 3.1.B:** Land uses within the Planning Area but outside the City's sphere of influence shall be consistent with the Solano County General Plan, specifically its policies related to agricultural land uses.
- **Policy 3.2.A**: Development projects shall be reviewed on case-by-case basis to ensure that adequate buffers are maintained between urban and agricultural lands, while giving developers flexibility in design at urban edge.
- **Policy 3.3.A:** The City shall adopt an urban growth boundary that limits annexations and future urban development to the area delineated for this General Plan to the year 2020.
- **Policy 3.3.B:** The City shall ensure that additional lands are needed to achieve a jobs/housing balance prior to annexation.
- **Policy 3.3.C:** Within the urban growth boundary, the City shall not consider requests for annexation unit the City reaches at least 50 percent of buildout. An expansion could be considered if the buildout of a particular use reaches 50 percent prior to buildout of other uses reaching 50 percent. (For example, if industrial land reaches 50 percent buildout prior to housing, then the need for additional industrial land could be considered. In
- **Policy 3.3.D:** As one of the key objectives of the urban growth boundary, the City shall require growth to move inward instead of out past the Brann Ranch along Highway 12.

- **Policy 3.3.E:** The necessary infrastructure shall be provided both within the urban growth boundary and to the particular site before development can occur.
- **Policy 3.4.B:** The City shall recommend that Solano and Sacramento Counties not permit changes in zoning to increase density in the areas of concern.
- **Policy 3.5.A:** The City shall not support growth into areas outside the City's urban growth boundary.
- **Policy 3.5.B:** The City shall actively oppose any requests for zoning change in unincorporated Solano County that would result in the conversion of productive agricultural land to urban uses in the areas of concern.
- **Policy 3.5.D:** The City shall seek to remove from its sphere of influence and the urban growth boundary any agricultural lands that are placed in an agricultural land trust.
- **Policy 3.8.A:** Development shall be compatible and consistent with the Airport Land Use Plan and designated airport restricted zones.

Land Use Element

- **Policy 4.1.E:** The City shall ensure a comprehensive, logical growth process as areas develop, particularly where significant changes in land use are being considered.
- **Policy 4.1.F:** The City shall not support residential, commercial, or industrial development in unincorporated areas until buildout is achieved within the city limits.
- **Policy 4.1.G:** The City shall, through its land use and facilities planning processes, coupled with its Capital Improvement Program, provide for a land use allocation that could permit construction of at least 11,000 dwelling units.
- **Policy 4.2.A:** Preserve, protect and improve the City's historic and existing neighborhoods. Allow for appropriate new and infill development and redevelopment in the districts contained in this sub-planning area. Ensure that all property improvements are sensitive to their surroundings and protect the public health, safety, and welfare.
- **Policy 4.2.E:** Sub-Planning Area 1 - Existing Developed City near the Sacramento River: The City shall continue to implement the Airport/Land Use Compatibility Plan and the Airport Master Plan; the Airport Master Plan shall be updated as necessary. The City shall continue to encourage compatible businesses to locate on the airport premises.

- **Policy 4.2.B:** Sub-Planning Area 2 – Esperson property, River Walk, and Homecoming: The homecoming subdivision shall be completed as approved. The Esperson and River Walk sites shall be developed as complete neighborhoods, with a mix of residential, commercial, and public land uses and residential densities that are consistent with this General Plan and their conceptual plans.
- **Policy 4.2.C:** Sub-Planning Area 3 – Industrial and Employment Service Commercial Lands North of Highway 12: The lands south of Airport Road and west of St. Francis Road shall be developed in a mix of limited industrial/ employment and related uses in a business park setting, with buffering and careful siting of uses adjacent to residential areas in Sub-Planning Areas 2. The lands east of St. Francis Road and north of Airport Road will include a larger range of "general" industrial and services uses. Lands along River Road will continue to develop in a mix of storage, warehouse, and industrial/employment uses. The City shall encourage redevelopment and/or replacement of poorly planned development or incompatible land uses.
- **Policy 4.2.D:** Sub-Planning Area 4 – Northwest Area Neighborhoods: The City shall continue to facilitate and encourage the development of these parcels as approved by recent development agreements. The City shall encourage the developers and owners of the Gibbs and Marks Ranches to adopt the Land Use Map and districts. Any new development agreement amendments or extensions on the Brann Ranch or the Marks/Gibbs Ranches shall be consistent with all elements of this General Plan.
- **Policy 4.2.E:** Sub-Planning Area 5 – Airport, Public, and Restricted Lands:
  - The City shall continue to implement the *Airport/Land Use Compatibility Plan* and the *Airport Master Plan;* the *Airport Master Plan* shall be updated as necessary. The City shall continue to encourage compatible businesses to locate on the airport premises.
  - The City shall construct the Northwest Area Waste Water Treatment Plan in the general location show in Figure 4-3 in the Land Use element and in Figure 12-4 in the Public Facilities and Services element.
  - The City shall strive to ensure consistency with the policies of the Delta Protection Commission on lands under their jurisdiction, while recognizing the specific authorization for the Airport, the Northwest Area Waste Water Treatment Plant and the industrial lands in Sub-Planning Area 3.

- **Policy 4.2.F:** Sub-Planning Area 6–Agricultural and Open Space Lands: The City shall strive to ensure that these lands remain in nonurban, predominantly agricultural and open space uses.
- **Policy 4.3.A:** The City shall adopt the designated land use categories, districts, and descriptions that control all development and uses of land in the City of Rio Vista planning area.
- **Policy 4.4.A:** The City shall establish a Neighborhood Core district shall accommodate community- and regional-serving commercial needs provide medium- to high-density residential uses, support designated transit facilities, encourage non-auto travel, and allow for ease of internal pedestrian access for multiple purposes and destinations.
- **Policy 4.4.B:** In the Neighborhood Service/Mixed Use district, the City shall accommodate neighborhood- and local-serving commercial, service, and residential uses in a less intensive development pattern than in the Neighborhood Core, while maintaining ease of pedestrian access and a range of compatible uses.
- **Policy 4.4.C:** The City shall ensure that development proposals accommodate low- to medium-density residential neighborhoods within walking or biking distance of Neighborhood Service/Mixed Use Development and Industrial/ Employment districts.

5.11.1.2 EXISTING CONDITIONS

There is approximately 4,288 acres of land within City limits. Lands that are not used for residential and commercial use are almost exclusively devoted to agricultural use and natural gas production. The city is made up of residential, commercial, industrial, recreation, and airport land uses. There are 5,351 housing units in the City of Rio Vista. Of these housing units, 4,788 are single detached, 222 are single attached, and 174 are mobile homes (DOF 2023). Despite growth in the region, the city remains a small, rural community. The Delta Protection Commission has jurisdiction over lands in and adjacent to the Rio Vista city limits. Planning in Rio Vista must be consistent with commission policies.

5.11.2 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:

LU-1 Physically divide an established community.

LU-2 Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

5.11.3 Proposed General Plan Goals and Policies

The following goals, policies, and actions from the proposed General Plan are applicable to land use and planning.

Land Use Plan Element

- **Goal LU-2:** To maintain and enhance Rio Vista while providing a safe, family-friendly small-town character.
- **Goal LU-3**: To provide new residential and non-residential uses, while maintaining and preserving natural open space and recreational areas.
  - **Policy LU-1:** Promote the development of compact, complete residential neighborhoods by encouraging the location of services and amenities within walking and biking distance of residences.
  - **Policy LU-2:** For larger developments and infill projects, encourage a range of housing types, varied lot sizes, and price levels within new neighborhoods to meet the needs of all segments of the community.
  - **Policy LU-3:** Encourage new residential development to incorporate design features that promote walking and connectivity between blocks and adjacent neighborhoods.
  - **Policy LU-6:** Encourage development in the North Waterfront District to be a mix of uses including residential, commercial, and public park space along the waterfront.
  - **Policy LU-7:** New blocks created in the North Waterfront district shall be of a size and scale consistent with the existing urban form of Downtown and as described in the Waterfront Specific Plan.
  - **Policy LU-12:** Protect, preserve and enhance significant historic buildings to preserve and enhance the identity and character of the community.

Mobility and Circulation Element

- **Goal CM-1:** A circulation and mobility system that prioritizes safety and supports and accommodates all modes of transportation.
- **Goal CM-2:** A network of roads and trails that balances local mobility needs of community members with the needs of regional circulation/commuters passing through Rio Vista.
- **Goal CM-3:** A citywide circulation system that is adequate and evolves to meet the needs of the community over time.
  - **Policy CM-3:** New development projects that require an amendment of the General Plan should strive not to increase base year citywide average VMT per capita, as measured by home-based VMT per resident and home-based VMT per employee or other applicable metric as determined by the city.
  - **Policy CM-4:** Maintain, and update as needed, a street classification system with design standards that are context-sensitive and enable safe, comfortable, and attractive access for pedestrians, bicyclists, motorists, and transit users of all ages and abilities. Street standards should:
    - Address the needs of different modes according to roadway classification.
    - Reduce the potential for conflicts and safety risks between modes.
    - Allow for adjustment by the City Engineer where needed, on a case-by-case basis.
  - **Policy CM-7:** Coordinate with Caltrans and STA on regional infrastructure projects to incorporate city projects to reduce planning and construction costs.
  - **Policy CM-9:** Encourage a Highway 12 bypass and new Rio Vista bridge and identify the appropriate location and design for the bypass/bridge.
  - **Policy CM-10:** Prioritize planning and construction of a Highway 12 bicycle and pedestrian grade-separated crossing over expansion of vehicular travel lanes on Highway 12.
  - **Policy CM-11:** Require new development projects achieve a reduction in either VMT per capita or VMT per employee, depending on the land use type, compared to baseline conditions for similar land use projects.
  - **Policy CM-14:** Provide a complete sidewalk and bicycle network throughout the city. Use discretionary funding sources and grant funding for the following priority projects:
    - Identify gap segments in sidewalks, bike lanes or bikeways, and other bicycle and pedestrian facilities where near-term development is not anticipated.

  - Prioritize construction of pedestrian and bicycle facilities in areas with a high potential for injury.
  - Prioritize completion of gaps in bicycle and pedestrian facilities near important destinations, such as schools, parks, and commercial areas.
- **Policy CM-15:** In new construction, provide mid-block pedestrian crossings and off-street pedestrian paths in areas with high pedestrian traffic to create more direct walking routes.

Open Space and Conservation Element

- **Goal OSC-4:** To preserve the rural landscape and to provide residents access to the hills, wetlands, and waterfronts along the Sacramento River.
- **Goal OSC-5:** To preserve and protect biological resources for their wildlife habitat, aesthetic, and recreational values.
  - **Policy OSC-2:** Create an integrated open space network within the City that links open space and natural habitat resources, recreation areas, schools, downtown, the waterfront, and residential neighborhoods.
  - **Policy OSC-3:** Require all new development to provide direct or alternative linkages to existing and planned open space systems.
  - **Policy OSC-4:** Protect open space areas of natural resource and scenic value, including wetlands, riparian corridors, floodplains, woodlands, and hillsides.
  - **Policy OSC-5:** Encourage landowners and developers to preserve the integrity of existing terrain and natural vegetation in environmentally-sensitive areas, such as drainage corridors, native riparian habitats, wetlands, and prominent hilltops.
  - **Policy OSC-6:** The City shall require that new development be designed and constructed to preserve the following types of areas and features as open space:
    - Scenic and trail corridors
    - Streams and riparian vegetation
    - Wetlands
    - Drainage corridors
    - Significant stands of vegetation
    - Wildlife corridors
    - Views of the Sacramento River

- **Policy OSC-9:** Require new development to mitigate wetland loss in both regulated and non-regulated wetlands to achieve "no net loss" through any combination of the following, in descending order of their desirability: (1) avoidance; (2) where avoidance is not possible, minimization of impacts on the resource; or (3) compensation that provides the opportunity to mitigate impacts on rare, threatened, and endangered species or the habitat that supports these species in wetland and riparian areas.
- **Policy OSC-13:** Promote energy conservation programs for all utility users and encourage active and passive solar energy design in building and site development. Promote more tree planting and landscaping in the City to reduce the heat island effect in the City and address climate change.

Safety Element

- **Goal SE-3:** To increase the resilience of the community to climate change.
  - **Policy SE-10:** Incorporate shade structures, installation of green space, public drinking water facilities, and heat-resilient building techniques into public and private projects, as feasible, to ensure that key public facilities, are adequately protected and residents and visitors can prepare for extreme heat.

Noise Element

- **Policy NE-7:** Projects located within the CNEL 55 dB contour of the Rio Vista Municipal Airport, as depicted in the Airport Land Use Compatibility Plan (ALUCP), shall be reviewed for noise sensitivity and consistency with City and ALUCP noise standards.

5.11.4 Environmental Impacts

Impact 5.11-1: Project implementation would not divide an established community. [Threshold LU-1]

Division of an established community commonly occurs because of development and construction of physical features that constitute a barrier to easy and frequent travel between two or more constituent parts of a community. For example, a large freeway structure with few crossings could effectively split a community. Likewise, geographic features could similarly affect the community, such as the development of a large residential project on the opposite side of a river from the existing community. Other barriers in the city may include incomplete trails, cul-de-sacs, or noise walls in an existing neighborhood that all require use of an automobile to get around.

The project does not propose project-specific development. The design direction for the proposed General Plan is to improve access and mobility for existing and future residents by providing vehicular connections and non-motorized transportation options. The land use pattern of proposed project would increase development density in established community cores. There is access throughout the city via major roadways such as Highway 12 and pedestrian pathways. Overall, the land uses in the proposed project are largely consistent with existing development patterns.

No aspect of the proposed project would divide existing communities in the city. In addition, the proposed project includes provisions that directly address land use connectivity, compatibility, and encroachment of new development on existing neighborhoods and land uses. Specifically, the proposed project includes policies aimed at improving connectivity and ensuring compatibility between land uses, such as Policy LU-3, which would encourage new residential development to incorporate design features that promote walking and connectivity between blocks and adjacent neighborhoods. Therefore, the proposed project would result in no impact regarding the division of an established community or land use compatibility issues.

Level of Significance Before Mitigation: Impact 5.11-1 would be less than significant.

Mitigation Measures

No mitigation measures are required.

Impact 5.11-2: Project implementation would not conflict with applicable plans adopted for the purpose of avoiding or mitigating an environmental effect. [Threshold LU-2]

While the proposed General Plan is the primary planning document for the City of Rio Vista and the proposed update is in part intended to ensure consistency between the General Plan and updated State laws, implementation of the proposed project has the potential to conflict with land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. For the purposes of this EIR, a land use plan is a policy or regulation that addresses how land is used. The following discusses the proposed project and its relationship to the land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect, as listed in Section 4.11.1.1, *Regulatory Framework*.

Plan Bay Area 2050

Plan Bay Area 2050 is a 30-year plan that charts a course for a Bay Area that is affordable, connected, diverse, healthy, and vibrant for all residents through 2050 and beyond (ABAG/MTC 2021). While Plan Bay Area 2050 does not override local land use control, it provides guidance to local jurisdictions, including Rio Vista, on how future development can be consistent with the State's GHG and VMT reduction goals. This includes constructing more infill development in downtowns and centers in close proximity to jobs and services. The Land Use Element of the proposed General Plan sets the foundation for future growth, change, and preservation in the city. In addition to the policies identified in Impact Discussion 5.11-1, the following proposed General Plan policies would serve to support the concepts in Plan Bay Area:

- **Policy CM-3:** New development projects that require an amendment of the General Plan should strive not to increase base year citywide average VMT per capita, as measured by home-based VMT per resident and home-based VMT per employee or other applicable metric as determined by the city.
- **Policy CM-4:** Maintain, and update as needed, a street classification system with design standards that are context-sensitive and enable safe, comfortable, and attractive access for pedestrians, bicyclists, motorists, and transit users of all ages and abilities. Street standards should:
  - Address the needs of different modes according to roadway classification.
  - Reduce the potential for conflicts and safety risks between modes.
  - Allow for adjustment by the City Engineer where needed, on a case-by-case basis.
- **Policy CM-7:** Coordinate with Caltrans and STA on regional infrastructure projects to incorporate city projects to reduce planning and construction costs.
- **Policy CM-11:** Require new development projects achieve a reduction in either VMT per capita or VMT per employee, depending on the land use type, compared to baseline conditions for similar land use projects.
- **Policy CM-14:** Provide a complete sidewalk and bicycle network throughout the city. Use discretionary funding sources and grant funding for the following priority projects:
  - Identify gap segments in sidewalks, bike lanes or bikeways, and other bicycle and pedestrian facilities where near-term development is not anticipated.
  - Prioritize construction of pedestrian and bicycle facilities in areas with a high potential for injury.

  - Prioritize completion of gaps in bicycle and pedestrian facilities near important destinations, such as schools, parks, and commercial areas.
- **Policy CM-15:** In new construction, provide mid-block pedestrian crossings and off-street pedestrian paths in areas with high pedestrian traffic to create more direct walking routes.

The proposed General Plan goals and policies listed above would support the goals of Plan Bay Area. Accordingly, the proposed project would not conflict with or be inconsistent with Plan Bay Area 2050, resulting in a less-than-significant impact.

Delta Plan

The Delta Plan is a comprehensive long-term management plan for the Sacramento-San Joaquin River Delta. It advances two coequal goals (DSC 2019):

- Provide a more reliable water supply for California.
- Protect, restore, and enhance the Delta ecosystem.

These goals must be met in a manner that protects and enhances the unique cultural, recreational, natural resource, and agricultural values of the Delta as an evolving place. The Delta Plan contains priority recommendations, which are nonregulatory but call-out actions essential to achieving the coequal goals (DSC 2019).

The proposed project includes goals and policies that support these goals of the Delta Plan. Policy OSC-4 conserves open-space resources—wetlands, riparian corridors, floodplains, woodlands, and scenic hillsides, while Policy OSC-9 requires “no-net-loss” mitigation for any wetland impacts, whether regulated or not. The update keeps all open-space lands intact and promotes long-term habitat stewardship and low-impact recreation (e.g., nature trails), measures expressly encouraged by the Delta Plan.

Roughly northeast of Airport Road, portions of Rio Vista fall within the Delta’s Primary Zone. These lands include dry pasture, active sand-and-gravel quarries, levee-repair rock stockpiles, and riparian/wetland habitat that has developed over the past 40 years. These lands would remain undeveloped or only developed for uses directly related to agriculture (Rio Vista 2024). Any future change to these land use designations must comply with Delta Plan regulations.

In addition, Delta Plan Policy DP P1 (“Locate New Urban Development Wisely”) limits new residential, commercial, and industrial uses to areas that were already designated for such development inside a city or its SOI (DSC 2019). The proposed update does

not expand Rio Vista's SOI and introduces no new urban uses outside the existing SOI or outside areas already planned for such uses. Therefore, the proposed project is consistent with the Delta Plan, resulting in a less-than-significant impact.

Travis Air Force Base Land Use Compatibility Plan

The Travis AFB LUCP includes policies design aim to ensure future land uses in areas surrounding the AFB will remain compatible with the realistically foreseeable, ultimate potential aircraft activity at the base. Travis AFB is in Fairfield, approximately 17 miles north-west of Rio Vista's city limits (SCDRM 2015). Pursuant to the California Public Utilities Code Section 21676, development of land and changes in land use around the Travis AFB must be consistent with the LUCP. In addition, the proposed project contains policies that would serve to minimize impacts from development in close proximity to airports, such as Policy NE-7, which requires that projects within the CNEL 55 dB contour of the Rio Vista Municipal Airport be reviewed for noise sensitivity and consistency with City and ALUCP noise standards.

Accordingly, the City will coordinate with agencies and jurisdictions regarding development in close proximity to the airports and ensure that future development is consistent with the LUCP. Future development within airport influence areas would also be subject to review by the ALUC for a determination of consistency with the LUCP. The ALUC, as authorized under the State Aeronautics Act (Public Utilities Code Section 21670 et seq.), is responsible for reviewing discretionary approvals, including development projects and zoning actions, to determine consistency with the LUCP. Future development within airport influence areas would be subject to this review to ensure land use compatibility with airport operations. Therefore, the proposed project would not conflict with or be inconsistent with the LUCP, resulting in a less-than-significant impact.

Rio Vista Airport Land Use Compatibility Plan

ALUCP policies are designed to ensure that future land uses in the surrounding area will remain compatible with the foreseeable aircraft at the Airport. The ALUCP applies to all lands on which the uses could be negatively affected by noise or safety impacts associated with present or future aircraft operations at Rio Vista Airport. Pursuant to the California Public Utilities Code Section 21676, development of land and changes in land use around the airport must be consistent with the ALUCP.

In addition, the following proposed General Plan policies would serve to minimize impacts from development in close proximity to airports, such as Policy NE-7, which establishes that projects within the CNEL 55 dB contour of the Rio Vista Municipal Airport, as depicted in the ALUCP, shall be reviewed for noise sensitivity and consistency with City and ALUCP noise standards.

Accordingly, the City will coordinate with agencies and jurisdictions regarding development in close proximity to the airports and ensure that future development is consistent with the ALUCP. Future development within airport influence areas would also be subject to review by the ALUC for a determination of consistency with the ALUCP. The ALUC, as authorized under the State Aeronautics Act (Public Utilities Code Section 21670 et seq.), is responsible for reviewing discretionary approvals, including development projects and zoning actions, to determine consistency with the ALUCP. Future development within airport influence areas would be subject to this review to ensure land use compatibility with airport operations. Therefore, the proposed project would not conflict with or be inconsistent with the ALUCP, resulting in a less-than-significant impact.

Summary

The General Plan is the primary planning document for the City of Rio Vista. The proposed project is intended in part to ensure consistency between the current General Plan and updated State laws. As described above, the proposed project would support applicable land use plans adopted for the purpose of avoiding or mitigating an environmental impact. The proposed project is the overriding planning document for the county, and it would replace the current General Plan. Therefore, the impact would be less than significant.

Level of Significance Before Mitigation: Impact 5.11-2 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.11.5 Cumulative Impacts

The cumulative setting is Solano County; land uses within the area are regulated by individual agencies through their respective adopted general plans and development codes. Jurisdictional boundaries limit implementation of regional mitigation by any one city, and therefore, coordination of development for road connectivity and adjacent development is important.

Future land and transportation development associated with the proposed project includes dwelling units, residents, employment, industry, and connectivity to important transportation and employment centers in the region. This DEIR evaluates projected development, along with future development in surrounding municipalities, which will result in impacts to the region. The overarching impact is one of traffic and the indirect impacts associated with more vehicles on roadways. As the region grows, the increase in traffic will result in more noise, air pollution, and greenhouse gas emissions. All cities within the county are required to address these issues in their respective general plans and development procedures. The City will work with the Metropolitan Transportation Commission and Association of Bay Area Governments to update the current RTP/SCS (Plan Bay Area 2050) on the four-year cycle. While implementation of the proposed project would increase development in the city and region, it would not combine with other development in the region to physically divide a community or result in inconsistencies with plans adopted to avoid or mitigate an environmental effect. Therefore, the proposed project's contribution to a cumulative effect would be less than significant.

5.11.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, all impacts would be less than significant.

5.11.7 Mitigation Measures

No mitigation measures are required.

5.11.8 Level of Significance After Mitigation

Impacts would be less than significant.

5.11.9 References

Association of Bay Area Governments and Metropolitan Transportation Commission (ABAG/MTC). 2007. Waterfront Specific Plan. https://www.riovistacity.com/sites/default/files/fileattachments/planning/page/5630/rio_vista-waterfront_specific_plan-2007.pdf.

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Delta Stewardship Council (DSC). 2019. Delta Plan. https://deltacouncil.ca.gov/pdf/delta-plan/2019-01-02-amended-executive-summary.pdf.

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5. Environmental Analysis
LAND USE AND PLANNING

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5.12 NOISE

This section evaluates the potential for implementation of the proposed project to result in noise impacts in the city. This section discusses the fundamentals of sound; examines federal, state, and local noise guidelines, policies, and standards; evaluates potential noise and vibration impacts associated with the proposed project; and provides feasible mitigation to reduce noise and vibration impacts at sensitive locations. The analysis in this section is based in part on the following information:

- *Noise and Vibration Assessment: City of Rio Vista General Plan Update*, ECORP Consulting, Inc., September 2024

A complete copy of this study, including noise monitoring and modeling data, are included in Appendix 5.12-1 of this DEIR.

5.12.1 Environmental Setting

5.12.1.1 NOISE AND VIBRATION FUNDAMENTALS

Noise can be generally defined as unwanted sound. Sound, traveling in the form of waves from a source, exerts a sound pressure level (referred to as sound level) that is measured in decibels (dB), which is the standard unit of sound amplitude measurement. The dB scale is a logarithmic scale that describes the physical intensity of the pressure vibrations that make up any sound, with 0 dB corresponding roughly to the threshold of human hearing and 120 to 140 dB corresponding to the threshold of pain. Pressure waves traveling through air exert a force registered by the human ear as sound.

Sound pressure fluctuations can be measured in units of hertz (Hz), which correspond to the frequency of a particular sound. Typically, sound does not consist of a single frequency, but rather a broad band of frequencies varying in levels of magnitude. When all the audible frequencies of a sound are measured, a sound spectrum is plotted consisting of a range of frequency spanning 20 to 20,000 Hz. The sound pressure level, therefore, constitutes the additive force exerted by a sound corresponding to the sound frequency/sound power level spectrum.

The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. Therefore, when assessing potential noise impacts, sound is measured using an electronic filter that de-emphasizes the frequencies below 1,000 Hz and above 5,000 Hz in a manner corresponding to the human ear’s decreased sensitivity to extremely low and extremely high frequencies. This method of frequency weighting is referred to

as A weighting and is expressed in units of A-weighted decibels (dBA). Frequency A-weighting follows an international standard methodology of frequency de-emphasis and is typically applied to community noise measurements.

Noise Exposure and Community Noise

Noise exposure is a measure of noise over a period of time. Noise level is a measure of noise at a given instant in time. Community noise varies continuously over a period of time with respect to the contributing sound sources of the community noise environment. Community noise is primarily the product of many distant noise sources, which constitute a relatively stable background noise exposure, with the individual contributors unidentifiable. The background noise level changes throughout a typical day, but does so gradually, corresponding with the addition and subtraction of distant noise sources such as traffic and atmospheric conditions. What makes community noise constantly variable throughout a day, besides the slowly changing background noise, is the addition of short duration single event noise sources (e.g., aircraft flyovers, motor vehicles, sirens), which are readily identifiable to the individual receptor. These successive additions of sound to the community noise environment vary the community noise level from instant to instant, requiring the measurement of noise exposure over a period of time to legitimately characterize a community noise environment and evaluate cumulative noise impacts. This time-varying characteristic of environmental noise is described using statistical noise descriptors.

Several rating scales have been developed to analyze the adverse effect of community noise on people. Because environmental noise fluctuates over time, these scales consider that the effect of noise on people the noise occurs. The noise descriptors most often encountered when dealing with traffic, community, and environmental noise include the average hourly noise level (in L_{eq}) and the average daily noise levels/community noise equivalent level (in L_{dn}/CNEL). The L_{eq} is a measure of ambient noise, while the L_{dn} and CNEL are measures of community noise. Each is applicable to this analysis and defined as follows:

- **Equivalent Noise Level (L_{eq})** is the average acoustic energy content of noise for a stated period of time. Thus, the Leq of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.
- **L_{max}** is the instantaneous maximum noise level for a specified period of time.

- **L_{min}** is the minimum, instantaneous noise level experienced during a given period of time.
- **Day-Night Average (Ldn)** is a 24-hour average L_{eq} with a 10-dBA "weighting" added to noise during the hours of 10:00 pm to 7:00 am to account for noise sensitivity in the nighttime. The logarithmic effect of these additions is that a 60 dBA 24-hour L_{eq} would result in a measurement of 66.4 dBA L_{dn}.
- **Community Noise Equivalent Level (CNEL)** is a 24-hour average L_{eq} with a 5-dBA weighting during the hours of 7:00 pm to 10:00 pm and a 10-dBA weighting added to noise during the hours of 10:00 pm to 7:00 am to account for noise sensitivity in the evening and nighttime, respectively.

Table 5.12-1 provides a list of other common acoustical descriptors.

Table 5.12-1 Common Acoustical Descriptors

Descriptor	Definition
Decibel, dB	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in micropascals (or 20 micronewtons per square meter), where 1 pascal is the pressure resulting from a force of 1 newton exerted over an area of 1 square meter. The sound pressure level is expressed in decibels as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e.g., 20 micropascals). Sound pressure level is the quantity that is directly measured by a sound level meter.
Frequency, Hertz (Hz)	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sounds are below 20 Hz and ultrasonic sounds are above 20,000 Hz.
L_{01}, L_{10}, L_{50}, L_{90}	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90 percent of the time during the measurement period.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive Noise	Noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends on its amplitude, duration, frequency, and time of occurrence; tonal or informational content; and the prevailing ambient noise level.

Sound Measurements

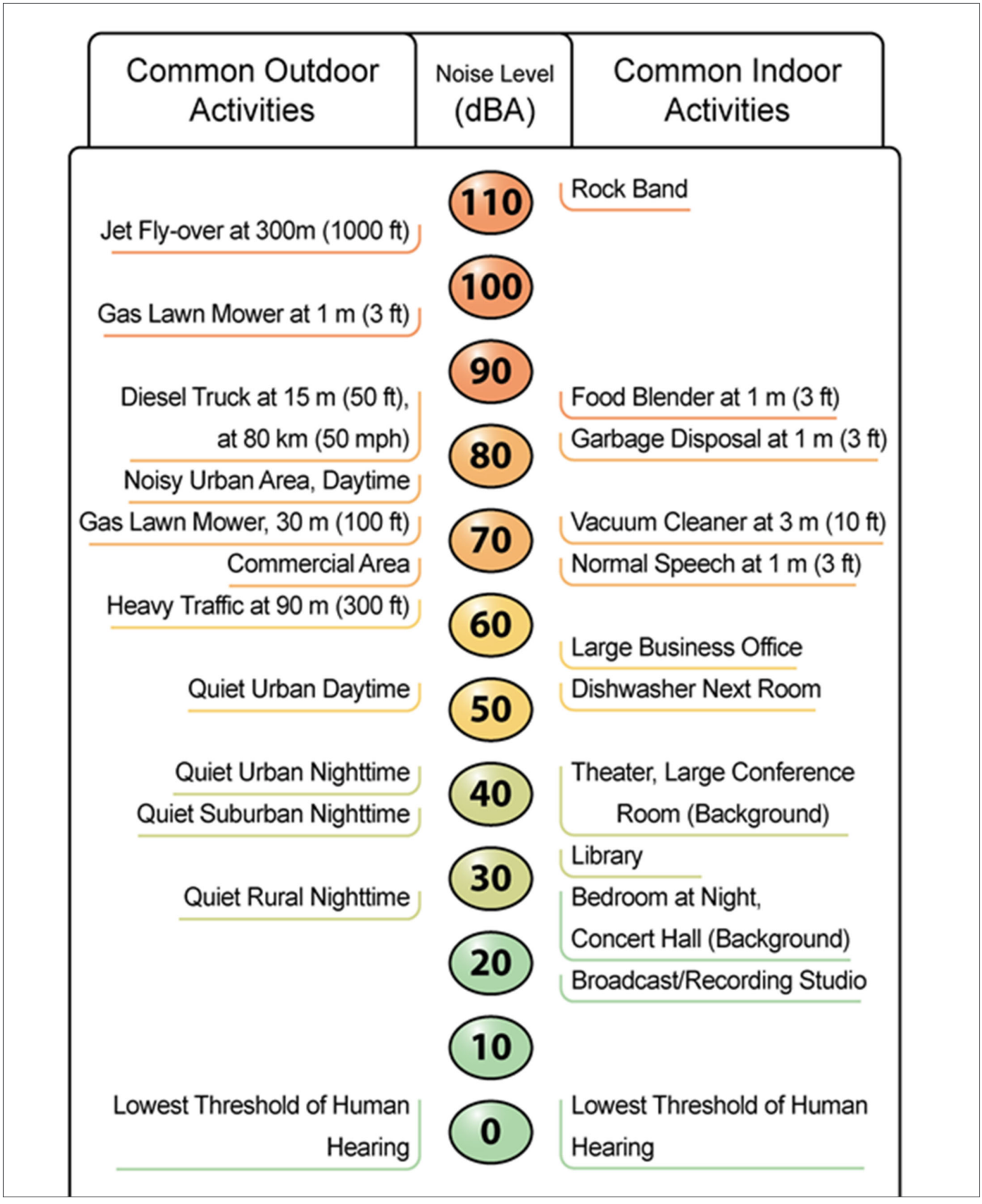
As previously described, sound pressure is measured through the A-weighted measure to correct for the relative frequency response of the human ear. That is, an A-weighted noise level de-emphasizes low and very high frequencies of sound similar to the human ear's de-emphasis of these frequencies.

Unlike linear units such as inches or pounds, decibels are measured on a logarithmic scale, representing points on a sharply rising curve. On a logarithmic scale, an increase of 10 dBA is 10 times more intense than 1 dBA, 20 dBA is 100 times more intense, and 30 dBA is 1,000 times more intense. A sound as soft as human breathing is about 10 times greater than 0 dBA. The decibel system of measuring sound gives a rough connection between the physical intensity of sound and its perceived loudness to the human ear. Ambient sounds generally range from 30 dBA (very quiet) to 100 dBA (very loud). When the standard logarithmic dB is A-weighted (dBA), an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70-dBA sound is half as loud as an 80-dBA sound and twice as loud as a 60-dBA sound. When two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be three dB higher than one source under the same conditions (Federal Transit Administration [FTA] 2018).

For example, a 65 dBA source of sound, such as a truck, when joined by another 65 dBA source, results in a sound amplitude of 68 dBA, not 130 dBA (i.e., doubling the source strength increases the sound pressure by three dBA). Under the decibel scale, three sources of equal loudness together would produce an increase of 5 dBA.

Typical noise levels associated with common noise sources are depicted on Figure 5.12-1, *Common Noise Levels*.

Time variation in noise exposure is typically expressed in terms of a steady-state energy level equal to the energy content of the time varying period (called Leq), or alternately, as a statistical description of the sound level that is exceeded over some fraction of a given observation period. For example, the L_{50} noise level represents the noise level that is exceeded 50 percent of the time. Half the time the noise level exceeds this level and half the time it is less than this level. This level also represents the level exceeded 30 minutes in an hour. Similarly, the L_2, L_8 and L_{25} values represent the noise levels that are exceeded 2, 8, and 25 percent of the time, or 1, 5, and 15 minutes per hour. These "L_n" values are typically used to demonstrate a stationary noise source's compliance with a city's noise ordinance, as discussed below. Other values typically noted during a noise survey are the L_{min} and L_{max}. These values represent the minimum and maximum root-mean-square noise levels obtained over the measurement period. The L_{dn} and CNEL descriptors give roughly the same 24-hour level, with the CNEL being only slightly more restrictive (i.e., higher).



Source: ECORP Consulting, Inc. California Department of Transportation (Caltrans) 2020.

Figure 5.12-1
Common Noise Levels

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.

Noise environments and consequences of human activities are usually well represented by median noise levels during the day or night or over a 24-hour period. Environmental noise levels are generally considered low when the CNEL or L_{dn} is below 60 dBA, moderate in the 60 to 70 dBA range, and high above 70 dBA. Examples of low daytime levels are isolated, natural settings with noise levels as low as 20 dBA and quiet, suburban, residential streets with noise levels around 40 dBA. Noise levels above 45 dBA at night can disrupt sleep. Examples of moderate-level noise environments are urban residential or semi-commercial areas (typically 55 to 60 dBA) and commercial locations (typically 60 dBA). People may consider louder environments adverse, but most will accept the higher levels associated with noisier urban residential or residential-commercial areas (60 to 75 dBA) or dense urban or industrial areas (65 to 80 dBA). Regarding increases in A-weighted noise levels (dBA), the following relationships should be noted in understanding this analysis:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived by humans.
- Outside of the laboratory, a 3 dBA change is considered a just-perceivable difference.
- A change in level of at least 5 dBA is required before any noticeable change in community response is expected. An increase of 5 dBA is typically considered substantial.
- A 10 dBA change is subjectively heard as an approximate doubling in loudness and would almost certainly cause an adverse change in community response.

Hearing Loss

While physical damage to the ear from an intense noise impulse is rare, a degradation of auditory acuity can occur even within a community noise environment. Hearing loss occurs mainly due to chronic exposure to excessive noise but may be due to a single

event such as an explosion. Natural hearing loss associated with aging may also be accelerated from chronic exposure to loud noise.

The Occupational Safety and Health Administration has a noise exposure standard that is set at the noise threshold where hearing loss may occur from long-term exposures. The maximum allowable level is 90 dBA, averaged over eight hours. If the noise is above 90 dBA, the allowable exposure time is correspondingly shorter.

Annoyance

Attitude surveys are used for measuring the annoyance felt in a community for noises intruding into homes or affecting outdoor activity areas. In these surveys, it was determined that causes for annoyance include interference with speech, radio and television, house vibrations, and interference with sleep and rest. Both the L_{dn} and CNEL as measures of noise have been found to provide a valid correlation of noise level and the percentage of people annoyed. People have been asked to judge the annoyance caused by aircraft noise and ground transportation noise. There continues to be disagreement about the relative annoyance of these different sources.

Psychological and Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects our entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions, and thereby affecting blood pressure, functions of the heart and the nervous system. In comparison, extended periods of noise exposure above 90 dBA could result in permanent hearing damage. When the noise level reaches 120 dBA, a tickling sensation occurs in the human ear even with short-term exposure. This level of noise is called the threshold of feeling. As the sound reaches 140 dBA, the tickling in the ear is replaced by pain. This is called the threshold of pain.

Noise Propagation and Attenuation

Noise can be generated by a number of sources, including mobile sources such as automobiles, trucks, and airplanes as well as stationary sources such as construction sites, machinery, and industrial operations. Sound spreads (propagates) uniformly outward in a spherical pattern, and the sound level decreases (attenuates) at a rate of approximately 6.0 dB (dBA) for each doubling of distance from a stationary or point source. Sound from a line source, such as a highway, propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels attenuate at a

rate of approximately 3.0 dBA for each doubling of distance from a line source, such as a roadway, depending on ground surface characteristics. No excess attenuation is assumed for hard surfaces like a parking lot or a body of water. Soft surfaces, such as soft dirt or grass, can absorb sound, so an excess ground-attenuation value of 1.5 dBA per doubling of distance is normally assumed. For line sources, an overall attenuation rate of 3.0 dB per doubling of distance is assumed (FHWA 2017a).

Noise levels may also be reduced by intervening structures; generally, a single row of detached buildings between the receptor and the noise source reduces the noise level by about 5 dBA (FHWA 2006), while a solid wall or berm generally reduces noise levels by 10 to 20 dBA (FHWA 2017b). However, noise barriers or enclosures specifically designed to reduce site-specific construction noise can provide a sound reduction of 35 dBA or greater (Western Lab 2021). To achieve the most potent noise reducing effect, a noise enclosure/barrier must physically fit in the available space, must completely break the “line of sight” between the noise source and the receptors, must be free of degrading holes or gaps, and must not be flanked by nearby reflective surfaces. Noise barriers must be sizable enough to cover the entire noise source and extend lengthwise and vertically as far as feasibly possible to be most effective. The limiting factor for a noise barrier is not the component of noise transmitted through the material, but rather the amount of noise flanking around and over the barrier. In general, barriers contribute to decreasing noise levels only when the structure breaks the "line of sight" between the source and the receiver.

The manner in which older homes in California were constructed generally provides a reduction of exterior-to-interior noise levels of about 20 to 25 dBA with closed windows (Caltrans 2002). The exterior-to-interior reduction of newer residential units is generally 30 dBA or more (HMMH 2006). Generally, in exterior noise environments ranging from 60 dBA L_{dn} to 65 dBA L_{dn}, interior noise levels can typically be maintained below 45 dBA, a typical residential interior noise standard, with the incorporation of an adequate forced air mechanical ventilation system in each residential building, and standard thermal-pane residential windows/doors with a minimum rating of Sound Transmission Class 28. In exterior noise environments of 65 dBA L_{dn} or greater, a combination of forced-air mechanical ventilation and sound-rated construction methods is often required to meet the interior noise level limit. Attaining the necessary noise reduction from exterior to interior spaces is readily achievable in noise environments less than 75 dBA L_{dn} with proper wall construction techniques following California Building Code methods, the selections of proper windows and doors, and the incorporation of forced air mechanical ventilation systems.

Vibration Fundamentals

Vibration is an oscillating motion in the earth. Like noise, vibration is transmitted in waves, but through the earth or solid objects. Unlike noise, vibration is typically of a frequency that is felt rather than heard. Sources of earth-borne vibrations include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) or humanmade causes (explosions, machinery, traffic, trains, construction equipment, etc.). Vibration sources may be continuous (e.g., factory machinery) or transient (e.g., explosions).

Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. As with noise, vibration can be described by both its amplitude and frequency. Amplitude can be characterized in three ways—displacement, velocity, and acceleration. Several different methods are typically used to quantify vibration amplitude. One is the peak particle velocity (PPV); another is the root mean square (RMS) velocity. The PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. The RMS velocity is defined as the average of the squared amplitude of the signal. The PPV and RMS vibration velocity amplitudes are used to evaluate human response to vibration.

PPV is generally accepted as the most appropriate descriptor for evaluating the potential for building damage. For human response; however, an average vibration amplitude is more appropriate because it takes time for the human body to respond to the excitation (the human body responds to an average vibration amplitude, not a peak amplitude). Because the average particle velocity over time is zero, the RMS amplitude is typically used to assess human response. The RMS value is the average of the amplitude squared over time, typically one second (FTA 2018).

Table 5.12-2, *Human Reaction and Damage to Buildings for Continuous or Frequent Intermittent Vibration,* displays the reactions of people and the effects on buildings produced by continuous vibration levels. The annoyance levels shown in the table should be interpreted with care since vibration may be annoying at much lower levels than those listed depending on the level of activity or the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Low-level vibrations frequently cause irritating secondary vibration, such as a slight rattling of windows, doors, or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is very little risk of actual structural damage. In high-noise environments, which are more prevalent where groundborne

vibration approaches perceptible levels, this rattling phenomenon may also be produced by loud airborne environmental noise inducing vibration in exterior doors and windows.

Table 5.12-2 Human Reaction and Damage to Buildings for Continuous or Frequent Intermittent Vibration

Peak Particle Velocity (inches/second)	Approximate Vibration Velocity Level (VdB)	Human Reaction	Effect on Buildings
0.006–0.019	64–74	Range of threshold of perception	Vibrations unlikely to cause damage of any type
0.08	87	Vibrations readily perceptible	Threshold at which there is a risk of architectural damage to extremely fragile historic buildings, ruins, ancient monuments
0.1	92	Level at which continuous vibrations may begin to annoy people, particularly those involved in vibration sensitive activities	Threshold at which there is a risk of architectural damage to fragile buildings. Virtually no risk of architectural damage to normal buildings
0.25	94	Vibrations may begin to annoy people in buildings	Threshold at which there is a risk of architectural damage to historic and some old buildings
0.3	96	Vibrations may begin to feel severe to people in buildings	Threshold at which there is a risk of architectural damage to older residential structures
0.5	103	Vibrations considered unpleasant by people subjected to continuous vibrations	Threshold at which there is a risk of architectural damage to new residential structures and Modern industrial/commercial buildings

Source: Caltrans 2020c.

Ground vibration can be a concern in instances where buildings shake and substantial rumblings occur. However, it is unusual for vibration from typical urban sources such as buses and heavy trucks to be perceptible. For instance, heavy-duty trucks generally generate groundborne vibration velocity levels of 0.006 PPV at 50 feet under typical circumstances, which, as identified in Table 5.12-2, is considered very unlikely to cause damage to buildings of any type. Common sources for groundborne vibration are planes, trains, and construction activities such as earth moving that requires the use of heavy-duty equipment.

The way in which vibration is transmitted through the earth is called propagation. As vibration waves propagate from a source, the energy is spread over an ever-increasing area such that the energy level striking a given point is reduced with the distance from the energy source. This geometric spreading loss is inversely proportional to the square

of the distance. Wave energy is also reduced with distance as a result of material damping in the form of internal friction, soil layering, and void spaces. The amount of attenuation provided by material damping varies with soil type and condition as well as the frequency of the wave.

5.12.1.2 REGULATORY BACKGROUND

To limit population exposure to physically and/or psychologically damaging as well as intrusive noise levels, the federal government, the State of California, and local governments have established standards and ordinances to control noise.

Federal

Federal Highway Administration

Proposed federal or federal-aided highway construction projects at a new location, or the physical alteration of an existing highway that significantly changes the horizontal or vertical alignment or increases the number of through-traffic lanes, require an assessment of noise and consideration of noise abatement per Code of Federal Regulations Title 23, Part 772, "Procedures for Abatement of Highway Traffic Noise and Construction Noise." The Federal Highway Administration (FHWA) has adopted noise abatement criteria for sensitive receivers—such as picnic areas, recreation areas, playgrounds, active sport areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals—when "worst-hour" noise levels approach or exceed 67 dBA L_{eq} (Caltrans 2020b).

U.S. Environmental Protection Agency

In addition to FHWA standards, the U.S. Environmental Protection Agency (EPA) has identified the relationship between noise levels and human response. The EPA determined that over a 24-hour period, an L_{eq} of 70 dBA will result in some hearing loss. Interference with activity and annoyance will not occur if exterior levels are maintained at an L_{eq} of 55 dBA and interior levels at or below 45 dBA. These levels are relevant to planning and design and useful for informational purposes, but they are not land use planning criteria because they do not consider economic cost, technical feasibility, or the needs of the community; therefore, they are not mandated.

The EPA also set 55 dBA L_{dn} as the basic goal for exterior residential noise intrusion. However, other federal agencies, in consideration of their own program requirements and goals, as well as the difficulty of actually achieving a goal of 55 dBA L_{dn}, have settled on the 65 dBA L_{dn} level as their standard. At 65 dBA L_{dn}, activity interference is

kept to a minimum and annoyance levels are still low. It is also a level that can realistically be achieved.

U.S. Department of Housing and Urban Development

The U.S. Department of Housing and Urban Development (HUD) has set the goal of 65 dBA L_{dn} as a desirable maximum exterior standard for residential units developed with HUD funding. (This level is also generally accepted in California.) Although HUD does not specify acceptable interior noise levels, standard construction of residential dwellings typically provides 20 dBA or more of attenuation with the windows closed. Based on this premise, the interior L_{dn} should not exceed 45 dBA.

Federal Interagency Committee on Noise

The Federal Interagency Committee on Noise (FICON) thresholds of significance assist in the evaluation of increased traffic noise. The 2000 FICON findings provide guidance as to the significance of changes in ambient noise levels due to transportation noise sources. FICON recommendations are based on studies that relate aircraft and traffic noise levels to the percentage of persons highly annoyed by the noise. FICON's measure of a substantial increase for transportation noise exposure is:

- If the existing ambient noise levels at existing and future noise-sensitive land uses (e.g., residential, etc.) are less than 60 dBA L_{dn} and the project creates a readily perceptible 5 dBA L_{dn} or greater noise level increase; or
- If the existing noise levels range from 60 to 65 dBA L_{dn} and the project creates a barely perceptible 3 dBA L_{dn} or greater noise level increase; or
- If the existing noise levels already exceed 65 dBA L_{dn} and the project creates a community noise level increase of greater than 1.5 dBA L_{dn}.

The rationale for these criteria is that as ambient noise levels increase, a smaller increase in noise resulting from a project would be noticeable.

Occupational Health and Safety Administration

A division of the US Department of Health and Human Services, the National Institute for Occupational Safety and Health (NIOSH) has established a construction-related noise level threshold as identified in the Criteria for a Recommended Standard: Occupational Noise Exposure prepared in 1998. NIOSH identifies a noise level threshold based on the duration of exposure to the source. The NIOSH construction-related noise level threshold starts at 85 dBA for 8 hours of exposure per day; for every 3 dBA increase, the exposure time is cut in half. This reduction results in noise level

thresholds of 88 dBA for 4 hours of exposure per day, 92 dBA for 1 hour of exposure per day, 96 dBA for 30 minutes of exposure per day, and up to 100 dBA for 15 minutes of exposure per day. The intention of these thresholds is to protect people from hearing losses resulting from occupational noise exposure.

Aircraft Noise Standards

The Federal Aviation Administration Advisory Circular Number 150 5020 2, entitled "Noise Assessment Guidelines for New Helicopters" recommends the use of a cumulative noise measure, the 24-hour equivalent sound level [$L_{eq}(24)$], so that the relative contributions of the heliport and other sound sources within the community may be compared. The $L_{eq}(24)$ is similar to the L_{dn} used in assessing the impacts of fixed wing aircraft. The helicopter $L_{eq}(24)$ values are obtained by logarithmically adding the single-event level (SEL) values over a 24-hour period.

Public Law 96 193 also directs the Federal Aviation Administration to identify land uses which are "normally compatible" with various levels of noise from aircraft operations. Because of the size and complexity of many major hub airports and their operations, Federal Aviation Regulation Part 150 identifies a large number of land uses and their attendant noise levels. These recommended noise levels are included in Table 5.12-3, *Federal Aviation Administration Normally Compatible Community Sound Levels*.

Table 5.12-3 Federal Aviation Administration Normally Compatible Community Sound Levels

Type of Area	L_{eq} (24)
Residential	
Suburban	57
Urban	67
City	72
Commercial	72
Industrial	77

Source: FAA 1983.

Notes: The Leq is the Equivalent Continuous Noise Level, which describes sound levels that vary over time, resulting in a single decibel value that takes into account the total sound energy over the period of time of interest.

State

State of California General Plan Guidelines

The State of California, through its General Plan Guidelines, discusses how ambient noise should influence land use and development decisions and includes a table of normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable uses at different noise levels. A conditionally acceptable designation

implies new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements for each land use and needed noise insulation features are incorporated in the design. By comparison, a normally acceptable designation indicates that standard construction can occur with no special noise reduction requirements. The General Plan Guidelines provide cities with recommended community noise and land use compatibility standards that can be adopted or modified at the local level based on conditions and types of land uses specific to that jurisdiction.

California Building Code

The State of California provides a minimum standard for building design through Title 24, Part 2, of the California Code of Regulations (CCR), commonly referred to as the "California Building Code." The code is updated every three years. It is generally adopted on a jurisdiction-by-jurisdiction basis, subject to further modification based on local conditions. The City of Rio Vista Building Regulations are in Title 15 of the City's municipal code.

The State of California's noise insulation standards for non-residential uses are codified in the 24 CCR Part 11, California Green Building Standards Code (CALGreen). CALGreen noise standards are applied to new or renovation construction projects in California to control interior noise levels resulting from exterior noise sources. Future individual projects may use either the prescriptive method (Section 5.507.4.1) or the performance method (5.507.4.2) to show compliance. Under the prescriptive method, a project must demonstrate transmission loss ratings for the wall and roof-ceiling assemblies and exterior windows when located within a noise environment of 65 dBA CNEL or higher. Under the performance method, a project must demonstrate that interior noise levels do not exceed 50 dBA L_{eq}(1hr).

Airport Noise Standards

CCR Title 21, Section 5012, establishes 65 dBA CNEL as the acceptable level of aircraft noise for persons living in the vicinity of airports. Noise-sensitive land uses are generally incompatible in locations where the aircraft exterior noise level exceeds 65 dBA CNEL, unless an aviation easement for aircraft noise has been acquired by the airport proprietor. Assembly Bill 2776 requires any person who intends to sell or lease residential properties in an "airport influence area" to disclose that fact to the person buying the property.

Regional Regulations

Solano County Airport Land Use Commission

The Solano County Airport Land Use Commission's (ALUC) Rio Vista Airport Land Use Compatibility Plan (ALUCP) (adopted in 2018) addresses land use compatibility associated with the Rio Vista Municipal Airport and surrounding lands. The Solano County ALUC is responsible for promoting land use compatibility around the Rio Vista Municipal Airport in order to minimize public exposure to excessive noise and safety hazards, and the ALUCP identifies noise compatibility zones in the form of airport noise contour graphics that are intended to prevent development that is incompatible with airport operations.

To the greatest extent feasible, it is the objective of the Solano County ALUC to minimize new residential development within areas significantly impacted by noise from aircraft operations at Rio Vista Municipal Airport. According to the ALUCP, new residential development is deemed normally unacceptable in areas exposed to noise levels between 55 and 64 dBA CNEL. Residential land uses in these areas must be insulated to achieve an indoor noise level of 45 dBA CNEL or lower. Above 65 dBA CNEL, new residential uses are prohibited. The acceptability of nonresidential development in noise-impacted areas is dependent on the noise sensitivity of the specific use and the extent to which the usage can be shielded from aircraft noise (Solano County ALUC 2018).

Local

City of Rio Vista General Plan

The proposed City of Rio Vista 2045 General Plan Update goals and policies that are relevant to noise are primarily in the Noise Element. As part of the proposed General Plan Update, some existing General Plan goals and policies would be amended, substantially changed, or deleted and new policies added. Applicable goals and policies are identified and assessed for their effectiveness and potential to result in an adverse physical impact later in this chapter under Section 5.12.4, *Environmental Impacts.*

City of Rio Vista Municipal Code

The City's municipal code includes various directives pertaining to noise. The municipal code is organized by title, chapter, and section. Provisions related to noise and vibration impacts are in Chapter 17.52, Noise Standards. Section 17.52.050, Noise Limits,

establishes permissible sound levels by land use category, as shown in Table 5.12-4, *Noise Limits*.

Table 5.12-4 Noise Limits

Zoning Districts	Time Period	Maximum Allowable Noise Level (dBA)
Residential: One/Two Family (R-1, R-E-1, R-2)	7:00 a.m. – 10:00 p.m.	75
	10:00 p.m. – 7:00 a.m.	60
Residential: Multiple; Public Space (R-3, R-4, P-L)	7:00 a.m. – 10:00 p.m.	75
	10:00 p.m. – 7:00 a.m.	60
Light Commercial (C-1, C-2, C-2-A)	7:00 a.m. – 10:00 p.m.	75
	10:00 p.m. – 7:00 a.m.	60
Commercial (C-3-I, C-H, D-W, A-B, F-W, O-A-R)	7:00 a.m. – 10:00 p.m.	75
	10:00 p.m. – 7:00 a.m.	60
Industrial (I-P-I, M-G, I-R, D-R, B-P)	7:00 a.m. – 10:00 p.m.	85
	10:00 p.m. – 7:00 a.m.	65

Source: Rio Vista Municipal Code, Section 17.52.050 (2021).

Additionally, Section 17.52.060, Specific Noise Source Exemptions, incentivizes construction activities to occur during the less noise-sensitive daytime hours in order to protect the inhabitants of the city against construction noise. Specifically, Section 17.52.060 exempts private construction projects located one-quarter of a mile or less from an inhabited dwelling from City noise standards provided that construction occurs between the hours of 7:00 a.m. and 7:00 p.m. on weekdays and between 8:00 a.m. and 7:00 p.m. on Saturdays and Sundays.

5.12.1.3 EXISTING CONDITIONS

Noise-Sensitive Land Uses

Some land uses are considered more sensitive to noise levels than others due to the duration and nature of time people spend at these uses. In general, residences are considered most sensitive to noise as people spend extended periods of time in them, including the nighttime hours. Therefore, noise impacts affecting rest and relaxation, sleep, and communication are highest at residential uses. Schools, hotels, hospitals, nursing homes, and recreational uses are also considered to be more sensitive to noise, as activities at these land uses involve rest, recovery, relaxation, and concentration, and increased noise levels tend to disrupt such activities. Places such as churches, libraries, and cemeteries, where people tend to pray, study, and/or contemplate, are also sensitive to noise but, due to the limited time people spend at these uses, impacts are

usually tolerable. Commercial and industrial uses are considered the least noise sensitive.

Existing Noise Environment

Noise sources are typically categorized as mobile or stationary. Most mobile sources are transportation related from vehicles operating on roadways, fixed railways, and aircraft and airport operations. Stationary noise sources typically include machinery; fabrication; heating, ventilation, and air conditioning systems; compressors and generators; and landscape maintenance equipment. Stationary noise sources generated by light industrial and commercial activities can result in noise-related land use conflicts when these operations (e.g., loading docks or equipment operations) are adjacent to residential land uses.

The greatest source of noise throughout Rio Vista is vehicle traffic on Highway 12 and the city's major arterial streets (Highway 84 is another substantial source of noise yet predominantly traverses a portion of the city devoid of noise-sensitive receptors). Another noise source in Rio Vista is the aircraft operations associated with the Rio Vista Municipal Airport. High levels of noise on airport land as well as in surrounding neighborhoods can result when aircraft take off and land. Other major noise sources are fixed and on-site mobile equipment at commercial and industrial uses; parks with active sports fields; playgrounds; athletic and music events; mechanical equipment like heating, ventilation, and air conditioning systems; loading docks and other delivery-related activities, and businesses like car washes, auto and auto body repair, animal board and care, the fire station, outdoor dining, and drive-throughs, where proximity to sensitive land uses can create noise nuisance concerns. Natural gas wells and transmission facilities (pipelines and compressors) are located within and around Rio Vista. The compressors are automatically activated from time to time and create high levels of noise while they are operating. In some cases, natural gas wells are in residential neighborhoods and have the potential to create noise impacts near residential development.

Existing Community Noise

In order to quantify existing ambient noise levels within the city, ECORP Consulting, Inc. conducted three long-term (24-hour) noise measurements spanning various locations throughout Rio Vista in order to record the ambient noise levels throughout the city when no specific or unusual activity or events are occurring. The sound level meter used for noise monitoring is a Larson Davis SoundExpert LxT precision sound level meter, which satisfies the American National Standards Institute for general

environmental noise measurement instrumentation. Prior to the measurements, the SoundExpert LxT sound level meter was calibrated according to manufacturer specifications with a Larson Davis CAL200 Class I calibrator. The measurement locations, described below, are shown on Figure 5.12-2, *Noise Measurement Locations Map*, and the results are reported in Table 5.12-5, *Existing (Baseline) Noise Measurements*.

- **Location 1** is on Airport Road across from the Airport Road Self Storage facility, approximately 42 feet from the centerline of the roadway. A 24-hour noise measurement began on October 16, 2023, at 11:46 a.m. The noise environment is characterized by transportation noise from vehicles on Airport Road. The ambient recorded noise level was 66.1 dBA CNEL.
- **Location 2** is directly adjacent to the Second Street and Main Street intersection. A 24-hour noise measurement began on October 17, 2023, at 12:05 p.m. The noise environment is characterized by transportation noise from vehicles on adjacent roadways as well as pedestrian activity (e.g., people talking). The ambient recorded noise level was 64.6 dBA CNEL.
- **Location 3** is at Drouin Drive Park, approximately 200 feet from the park entrance. A 24-hour noise measurement began on November 30, 2023, at 2:48 p.m. The noise environment is characterized by neighborhood noise (people talking, dogs barking, car doors opening and closing, etc.). The ambient recorded noise level was 59.7 dBA CNEL.



Source: Esri, 2023.

Figure 5.12-2
Noise Measurement Locations Map

Table 5.12-5 Existing (Baseline) Noise Measurements

Location Number	Location Description	L_{dn} dBA	L_{eq} dBA	L_{min} dBA	L_{max} dBA	Time
Long Term Measurements						
1	Airport Road, adjacent to the Airport Road Self Storage, approximately 42 feet from the center of the roadway	**65.9**	63.4	28.2	87.8	October 16, 2023, at 11:46 a.m. – October 17, 2023, at 11:46 a.m.
2	Second Street and Main Street Intersection, approximately two blocks north of City Hall	**64.3**	62.0	35.6	102.0	October 17, 2023, at 12:05 p.m. – October 18, 2023, at 12.05 p.m.
3	In Drouin Drive Park, approximately 200 feet from the park entrance	**59.6**	70.0	40.4	103.0	November 30, 2023, at 2:48 p.m. – December 1, 2023, at 2:48 p.m.

Notes: Measurements were taken with a Larson Davis SoundExpert LxT precision sound level meter, which satisfies the American National Standards Institute for general environmental noise measurement instrumentation. Prior to the measurements, the SoundExpert LxT sound level meter was calibrated according to manufacturer specifications with a Larson Davis CAL200 Class I Calibrator. See Appendix 5.12-1 for noise measurement outputs.

As shown in Table 5.12-5, the ambient recorded noise levels range over the course of the four long-term noise measurements was 59.6 to 65.9 dBA L_{dn}.

Existing Traffic Noise

Traffic noise levels depend primarily on the speed of the traffic and the volume of trucks. The primary source of noise from automobiles is high-frequency tire noise, which increases with speed. Trucks and older automobiles produce engine and exhaust noise, and trucks can also generate wind noise. Tire noise from cars is produced at ground level (i.e., where the tire contacts the road), whereas truck noise can be generated at a height of 10 to 15 feet above the road, depending on the height of the exhaust pipe(s) and engine. As a result, sound walls are not as effective at reducing truck noise unless they are very tall.

The greatest source of noise throughout Rio Vista is vehicle traffic on Highway 12 and the city's major arterial streets (Highway 84 is another substantial source of noise yet mostly traverses a portion of the city devoid of noise-sensitive receptors). Existing roadway noise levels were calculated for roadway segments throughout Rio Vista. This task was accomplished using the FHWA Highway Traffic Noise Prediction Model (FHWA-RD-77-108) (see Appendix 5.12-1 for detailed traffic noise modeling outputs) and traffic volumes from Fehr & Peers Transportation Consultants (2024). The model calculates the average noise level at specific locations based on traffic volumes,

average speeds, roadway geometry, and site environmental conditions. The average vehicle noise rates (energy rates) used in the FHWA model have been modified to reflect average vehicle noise rates identified for California by the California Department of Transportation (Caltrans). The Caltrans data show that California automobile noise is 0.8 to 1.0 dBA higher than national levels and that medium and heavy truck noise is 0.3 to 3.0 dBA lower than national levels. The average daily noise levels along these roadway segments are presented in Table 5.12-6, *Existing Roadway Noise Levels*.

Table 5.12-6 Existing Roadway Noise Levels

Roadway Segment	L_{dn} at 50 Feet	Distance to L_{dn} Contour (feet)[1, 2]			
		70 dBA	65 dBA	60 dBA	55 dBA
State Route 12					
East of Front Street	**65.8**	-	60	188	+200
Between Front Stret and Drouin Drive	**65.9**	-	61	193	+200
Between Drouin Drive and Amerada Road	**68.2**	38	82	177	+300
Between Amerada Road and Summerset Road	**69.3**	45	97	210	+300
West of Summerset Road	**69.4**	46	98	212	+300
Front Street					
Between State Route 84 and Main Street	**57.3**	**-**	-	-	86
Between Main Street and Hamilton Avenue	**57.2**	**-**	-	-	84
Main Street					
Between State Route 12 and South Front Street	**55.7**	**-**	-	-	59
Saint Francis Way					
Northeast of Rolling Green Drive	**58.0**	**-**	-	37	79
Southwest of Rolling Green Drive	**55.5**	**-**	-	-	56
Airport Road					
North of Liberty Island Road	**55.5**	**-**	-	-	54
Between Liberty Island Road and Palisades Drive	**59.2**	**-**	-	44	95
Between Palisades Drive and Baumann Road	**59.2**	**-**	-	44	95
Between Baumann Road and Church Road	**59.2**	**-**	-	44	95
Between Church Road and Norman Richards Drive	**62.3**	**-**	33	71	154
Between Norman Richards Drive and Saint Francis Way	**62.3**	**-**	33	71	154
Between St Francis Way and Highway 84	**60.0**	**-**	-	50	108
Church Road					
Between State Route 12 and Airport Road	**57.7**	**-**	-	35	75

Table 5.12-6 Existing Roadway Noise Levels

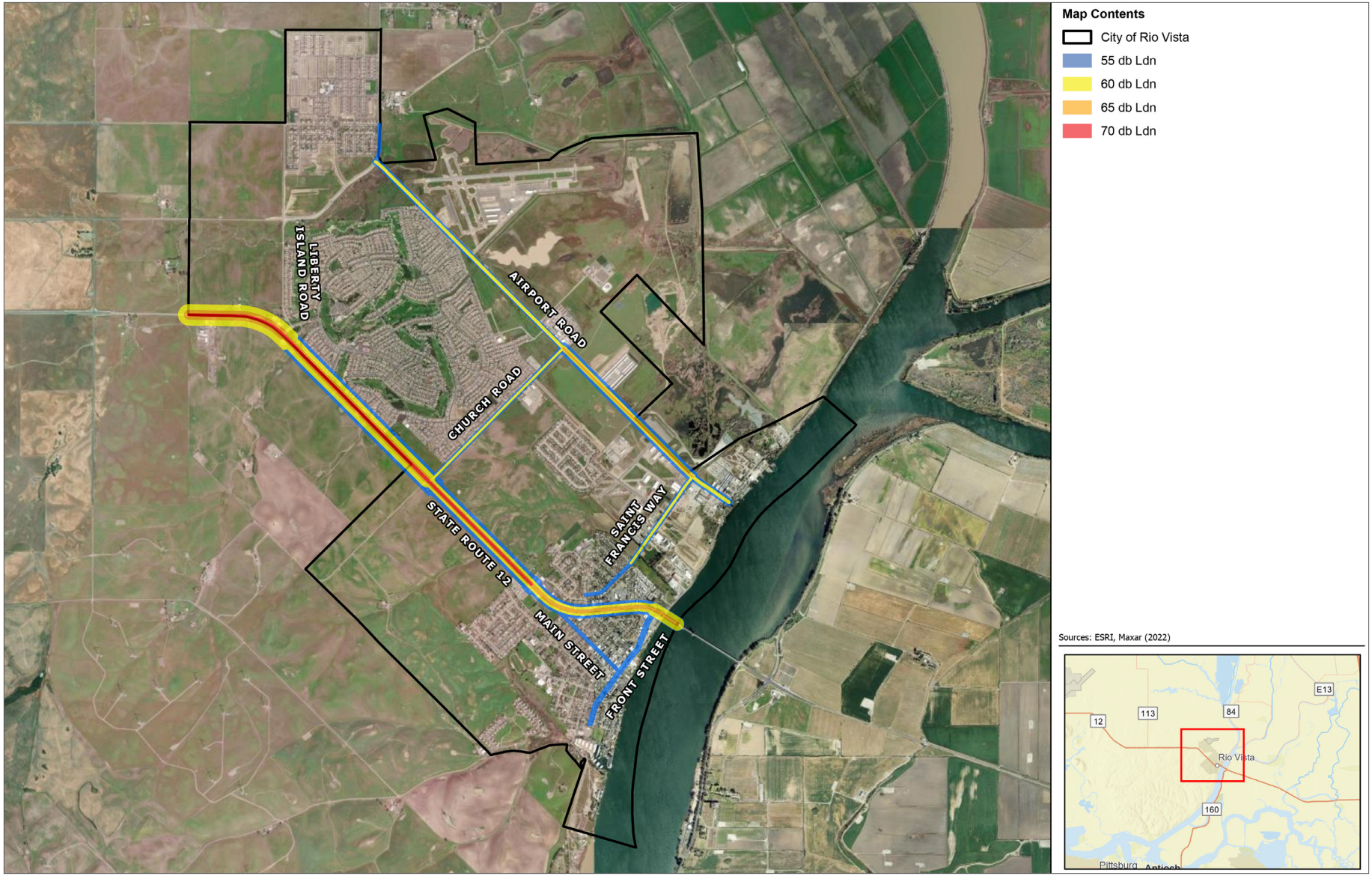
Roadway Segment	L_{dn} at 50 Feet	Distance to L_{dn} Contour (feet)[1, 2]			
		70 dBA	65 dBA	60 dBA	55 dBA
Liberty Island					
Between Summerset Road and Canright Road	**51.2**	-	-	-	-
East of Canright Road	**51.2**	-	-	-	-

Note: Traffic noise levels were calculated using the FHWA Highway Noise Prediction Model in conjunction with the trip generation rate identified by Fehr & Peers. Refer to Appendix 5.12-1 for traffic noise modeling assumptions and results.
1 Distance to Ldn contours do not account for the noise attenuation attributable to intervening structures.
2 All contour distances from fully developed areas are capped at 200 feet from roadway centerlines. All contour distances from areas with undeveloped land are capped at 300 feet from roadway centerlines.

Existing noise contours for Highway 12 and major arterials in the city are on Figure 5.12-3, *Traffic Noise Contours: Existing*. The noise contours shown on Figure 5.12-3 represent the predicted noise level based on roadway volumes, the percentage of trucks, speed, and other factors.

Existing Aircraft Noise

A notable source of noise in Rio Vista is the aircraft operations associated with the Rio Vista Municipal Airport located in the north-central portion of the city. High levels of noise on airport land as well as in surrounding neighborhoods can result when aircraft take off and land. Although the Rio Vista Municipal Airport is in Rio Vista and aircraft noise affects Rio Vista residents, the City is not authorized to regulate aircraft noise. As discussed in Section 5.12.1.2, *Regulatory Background*, aircraft noise is regulated, managed, and mitigated primarily by the Federal Aviation Administration, which works in conjunction with other federal agencies, such as the U.S. Environmental Protection Agency, to address noise issues related to aviation. The regulation of noise emanating from airports in the United States involves multiple entities at different levels of government, including federal, state, and local authorities. However, the primary responsibility for regulating the noise generated at airports typically lies with local airport authorities, which are often governed by airport commissions or boards. The Solano County Airport Land Use Commission is responsible for promoting land use compatibility around the Rio Vista Municipal Airport in order to minimize public exposure to excessive noise and safety hazards. Its airport land use compatibility plan identifies noise compatibility zones in the form of airport noise contour graphics that are intended to prevent development that is incompatible with airport operations.

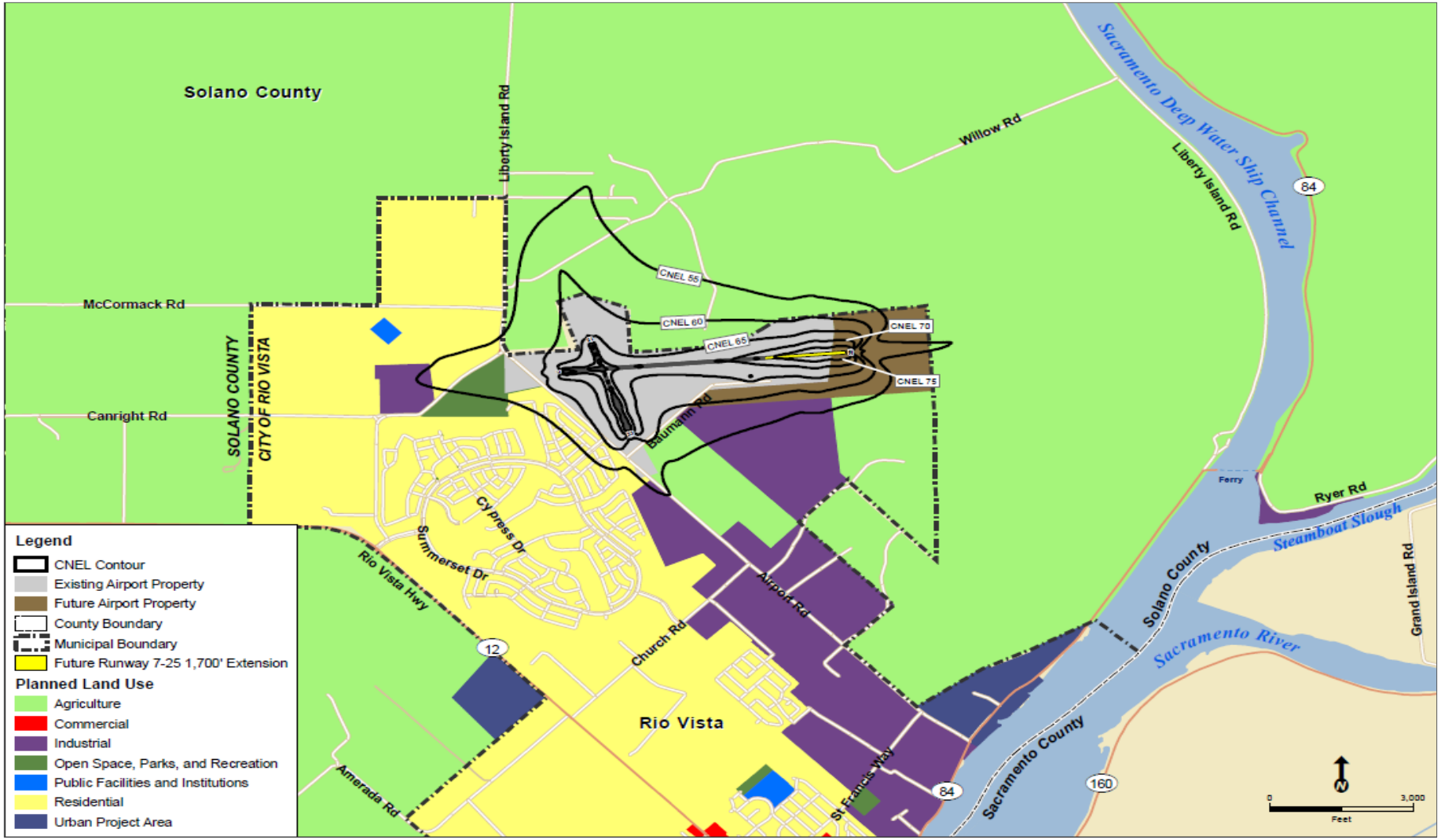


Source: ECORP Consulting, Inc., 2024.

0 5,000
Scale (Feet)

Figure 5.12-3
Traffic Noise Contours: Existing

Figure 5.12-4, *Rio Vista Municipal Airport Noise Contours*, depicts year 2035 Rio Vista Municipal Airport noise contours from the ALUCP, reflecting forecast aircraft activity level of approximately 26,305 annual operations. As shown, no portion of the airport's 65 dBA CNEL contour extends beyond the airport boundary. Only a small portion of the airport's 60 dBA CNEL contour extends beyond the airport boundary and into Rio Vista, specifically, overlaying the eastern terminus of Palisades Drive and several hundred feet of Airport Road. The 55 dBA CNEL contour extends beyond the 60 dBA CNEL contour in relatively the same pattern.



Source: ECORP Consulting, Inc., 2024.

NOTE: CNEL = Community Noise Equivalent Level.

Figure 5.12-4
Rio Vista Municipal Airport Noise Contours

5.12.2 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 result in:

N-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.

N-2 Generation of excessive groundborne vibration or groundborne noise levels.

N-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 public use airport, if the project would expose people residing or working in the project area to excessive noise levels.

A project might have a significant effect on the environment if it would substantially increase the ambient noise levels in the area or expose people to severe noise levels. As previously described, a change in level of at least 5 dBA is required before any noticeable change in community response is expected. Based on this fact, a significant increase in traffic noise is an increase in the existing ambient noise environment of at least 5 dBA L_{dn}. Based on Section 17.52.050 of the City municipal code, an individual project would also be considered to have a significant impact if its on-site noise sources generate noise levels above the standards identified in Table 5.12-4, above.

5.12.3 Proposed General Plan Goals and Polices

The following goals and policies from the proposed General Plan are applicable to noise.

Noise Element

- **Goal SN-1:** Ensure that community members and businesses are not adversely impacted by unwanted or excessive noise levels.
  - **Policy NE-1:** New development shall be evaluated for compliance standards provided in Table 10-1 [of the 2045 General Plan]. Where existing noise levels would exceed acceptable levels, it shall be the obligation of the applicant proposing the project to ensure noise levels are reduced to acceptable levels.
  - **Policy NE-2:** New development shall not generate operational noise levels that exceed the noise standards in Table 10-2on surrounding properties.

- **Policy NE-3:** Where noise attenuation is required to meet the standards of this element, an emphasis shall be placed on site planning and project design, including, but are not limited to, building orientation, setbacks and building construction practices.
- **Policy NE-4:** The use of sound walls will be allowed only if these other measures cannot achieve compliance with the noise standards of this General Plan. Where sound walls are required, the walls shall be designed to ensure the wall is visually attractive and compatible with the design of the proposed project and surrounding development.
- **Policy NE-5:** When noise sensitive development is proposed in proximity to existing gas extraction facilities, the developer of the proposed project shall be responsible for meeting applicable noise standards within the proposed project.
- **Policy NE-6:** Ensure that noise sensitive uses do not encroach into areas needed by noise generating uses.
- **Policy NE-7:** Projects located within the CNEL 55 dB contour of the Rio Vista Municipal Airport, as depicted in the Airport Land Use Compatibility Plan (ALUCP), shall be reviewed for noise sensitivity and consistency with City and ALUCP noise standards.
- **Policy NE-6:** Ensure that noise sensitive uses do not encroach into areas needed by noise generating uses.
- **Policy NE-8:** Noise associated with construction activities shall be exempt from the noise standards cited in Table 10-2. However, construction related noise impacts shall be minimized as follows:
  - The City shall limit construction activities to between the hours of 7 a.m. and 5 p.m. unless an exemption is granted in the City's review of the project's entitlement or permit.
  - The City shall require all internal combustion engines used in conjunction with construction activities to be muffled according to the equipment manufacturer's requirements.

5.12.4 Environmental Impacts

As a result of the California Supreme Court decision regarding the assessment of the environment's impacts on projects (*California Building Industry Association v. Bay Area Air Quality Management District,* 62 Cal. 4th 369 [No. S 213478]) issued December 17, 2015, it is generally no longer the purview of the CEQA process to evaluate the impact of existing environmental conditions on any given project. As a result, although the noise from existing sources is taken into account as part of the baseline, the direct effects of exterior noise from nearby noise sources relative to land use compatibility of a future project as a result of implementation of the project is typically no longer a required topic for impact evaluation under CEQA. Generally, for noise levels affecting individual project sites, no determination of significance is required except for certain school projects, projects affected by airport noise, and projects that would exacerbate existing conditions (i.e., projects that would have a significant operational impact). These guidelines, along with the future noise levels, which will be shown in the proposed General Plan noise contour maps, should be used by the City as a guide for evaluating the compatibility of noise-sensitive projects in potentially noisy areas.

5.12.4.1 METHODOLOGY

This is a program-level analysis that considers the potential impacts from adoption of the proposed project by assessing the proposed policies in it as well as development and activities that may occur under it. Impacts relative to noise and vibration are evaluated using the thresholds of significance identified in Section 5.12.2, above, based on information in the proposed project and the existing and future traffic volumes provided by Fehr & Peers (2024). The proposed project does not propose specific development projects but, for the purposes of environmental review, establishes the potential buildout of the proposed project. This represents the maximum feasible development that the City has projected can reasonably be expected throughout the proposed General Plan horizon. To capture the potential impact of future development under the proposed General Plan Update, this analysis utilizes the baseline existing conditions described above and analyzes the impacts of urban development through the projection period. Roadside noise levels were calculated for the same roadways analyzed under existing conditions. The street segments selected for analysis are those forecast to experience the greatest percentage increase in traffic generated by future development under the proposed project and are therefore expected to be most directly affected. Transportation-source noise levels have been calculated using the FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with traffic counts provided by Fehr & Peers (2024). The model calculates the average noise level at specific locations

based on traffic volumes, average speeds, roadway geometry, and site environmental conditions. The average vehicle noise rates (energy rates) used in the FHWA model have been modified to reflect average vehicle noise rates identified for California by Caltrans. The Caltrans data show that California automobile noise is 0.8 to 1.0 dBA higher than national levels and that medium and heavy truck noise is 0.3 to 3.0 dBA lower than national levels.

Impact 5.12-1: The proposed project would result in the generation of substantial temporary and permanent increases 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. [Threshold N-1]

Noise/Land Use Compatibility

The proposed project's Noise Element provides policy guidance to minimize noise impacts within the community and establishes noise control measures for the operational phases of land use projects. By identifying noise-sensitive areas and setting compatibility guidelines (as detailed in Table 10-1 of the proposed Noise Element), noise considerations will help shape the distribution, location, and intensity of future land uses. This approach ensures that effective land use planning and project design can mitigate most noise-related issues.

A fundamental planning strategy to minimize noise impacts on new developments is to avoid placing noise-sensitive land uses—such as schools, hospitals, residential areas, and recreational facilities—in locations where noise levels are expected to exceed acceptable thresholds. These areas are subject to the Maximum Allowable Exterior and Interior Noise Level standards, as established in Table 10-1 of the 2045 General Plan Noise Element. If noise-sensitive uses are proposed in such locations, appropriate noise mitigation measures (e.g., site and architectural design, sound walls) must be implemented in accordance with Policies NE-1, NE-3, NE-4, NE-5, NE-6, and NE-7. The noise standards in Table 10-1 serve as a basis for evaluating land use compatibility with surrounding noise levels.

The primary noise source in Rio Vista is vehicle traffic on Highway 12 and major arterial streets. The noise levels associated with these sources, compared to the standards in Table 10-1, will guide the assessment of future projects. Should noise levels at a proposed project site fall within the acceptable range, the project will be considered compatible with the noise environment. If noise levels exceed the standards, noise attenuation measures will be required.

5. Environmental Analysis
NOISE

All projects subject to discretionary review under the 2045 General Plan Update will be assessed for noise/land use compatibility. The Noise Element provides specific policy provisions to ensure that excessive noise exposure is mitigated.

- **Policy NE-1:** New development shall be evaluated for compliance standards provided in Table 10-1 [of the 2045 General Plan]. Where existing noise levels would exceed acceptable levels, it shall be the obligation of the applicant proposing the project to ensure noise levels are reduced to acceptable levels.
- **Policy NE-3:** Where noise attenuation is required to meet the standards of this element, an emphasis shall be placed on site planning and project design, including, but not limited to, building orientation, setbacks and building construction practices.
- **Policy NE-4:** The use of sound walls will be allowed only if these other measures cannot achieve compliance with the noise standards of this General Plan. Where sound walls are required, the walls shall be designed to ensure the wall is visually attractive and compatible with the design of the proposed project and surrounding development.
- **Policy NE-5:** When noise sensitive development is proposed in proximity to existing gas extraction facilities, the developer of the proposed project shall be responsible for meeting applicable noise standards within the proposed project.
- **Policy NE-6:** Ensure that noise sensitive uses do not encroach into areas needed by noise generating uses.
- **Policy NE-7:** Projects located within the CNEL 55 dB contour of the Rio Vista Municipal Airport, as depicted in the Airport Land Use Compatibility Plan (ALUCP), shall be reviewed for noise sensitivity and consistency with City and ALUCP noise standards.

Under Policy NE-1, new development projects will require an acoustical analysis to assess compliance with the noise standards in Table 10-1. This analysis will typically involve baseline noise measurements using a sound level meter yet may also use General Plan noise contours (Figures 5.12-3, *Traffic Noise Contours: Existing*, and 5.12-5, *Traffic Noise Contours: Buildout*) or Table 5.12-9, *Future (General Plan Buildout) Roadway Noise Levels*. The analysis will determine whether the noise environment is compatible with the proposed development and will guide the implementation of necessary noise attenuation measures, such as site design, building orientation, building construction methods, and the use of noise barriers. The need for such measures will be determined on a project-by-project basis. Policies NE-3 and NE-5

further ensure that noise mitigation measures are integrated into the design of both noise-generating and noise-sensitive land uses.

In summary, the proposed project's approach to noise/land use compatibility will result in a less than significant impact on noise-sensitive land uses.

Temporary Construction Noise

Under the proposed project, the primary source of temporary noise within the City would be demolition and construction activities associated with development projects and activities. Construction activities would involve both off-road construction equipment (excavators, dozers, cranes, etc.) and transport of workers and equipment to and from construction sites. Table 5.12-7, *Reference Construction Equipment Noise Levels*, shows typical noise levels produced by the types of off-road equipment that would likely be used during future construction in Rio Vista. It is noted that future development under the proposed project could potentially require installation of pile foundations that may utilize impact pile drivers or similar equipment that would be expected to generate high noise levels.

Construction noise is currently an intermittent source of temporary noise in Rio Vista and will continue to be so regardless of whether the proposed project is adopted. Noise levels near individual construction sites associated with development and activities under the proposed project would not be substantially different from what they would be under the existing General Plan. Since specific future projects in the city are unknown at this time, it is conservatively assumed that the construction areas associated with these future projects could be located within 50 feet of sensitive land uses. As depicted in Table 5.12-7, noise levels generated by individual pieces of construction equipment typically range from approximately 74 dBA to 101.3 dBA L_{max} at 50 feet and 67.7 dBA to 94.3 dBA L_{eq} at 50 feet.

Significant noise impacts may occur from operation of heavy earth-moving equipment and truck-haul operations during construction of individual development projects, particularly if construction techniques such as impact pile driving or vibratory pile driving are proposed. The time of day that construction activity is conducted would also determine the significance of each project, particularly during the more sensitive evening/nighttime hours. However, construction would be localized and intermittent for varying periods. Average hourly noise levels associated with construction projects can vary depending on the activities performed. Short-term increases in vehicle traffic, including worker commute trips and haul truck trips, may also result in temporary

increases in ambient noise levels at nearby receptors. During each stage of construction, a different mix of equipment would operate, and noise levels would vary based on the amount of equipment on-site and the location of the activity. Construction noise levels drop off at a rate of about 6 dBA per doubling of distance between the noise source and the receptor. Intervening structures or terrain would result in lower noise levels at distant receivers.

Table 5.12-7 Reference Construction Equipment Noise Levels

Equipment	Typical Noise Level (dBA) at 50 Feet from Source	
	L_{max}	L_{eq}
Aerial Lift	74.7	67.7
Air Compressor	77.7	73.7
Backhoe	77.6	73.6
Blasting	94.0	73.0
Boring Jack (Power Unit)	83.0	80.0
Boring Jack (Horizontal)	82.0	76.0
Chain Saw	83.7	76.7
Compactor (Ground)	83.2	76.2
Concrete Mixer Truck	78.8	74.8
Concrete Mixer (Vibratory)	80.0	73.0
Concrete Pump Truck	81.4	79.4
Concrete Saw	89.9	82.6
Crane	80.6	72.6
Dozer	81.7	77.7
Drill Rig	84.4	77.4
Drill Rig Truck	79.1	72.2
Drum Mixer	80.0	77.0
Dump Truck	76.5	72.5
Excavator	80.7	76.7
Front End Loader	79.1	75.1
Generator	80.6	77.6
Gradall (Excavator)	83.4	79.4
Grader	85.0	81.0
Hydraulic Break Ram	90.0	80.0
Impact Hammer/Hoe Ram (Mounted)	90.3	83.3
Jackhammer	88.9	81.9
Other Equipment	85.0	82.0
Pavement Scarifier	89.5	82.5
Paver	77.2	74.2

Table 5.12-7 Reference Construction Equipment Noise Levels

Equipment	Typical Noise Level (dBA) at 50 Feet from Source	
	L_{max}	L_{eq}
Pile Driver (Impact)	101.3	94.3
Pile Driver (Vibratory)	100.8	93.8
Pneumatic Tools	85.2	82.2
Pumps	80.9	77.9
Rock Drill	81.0	74.0
Roller	80.0	73.0
Scraper	83.6	79.6
Tractor	84.0	80.0
Truck (Flat Bed)	74.3	70.3
Truck (Pickup)	75.0	71.0
Vacuum Street Sweeper	81.6	71.6
Welder	74.0	70.0

Source: FHWA 2006.

The City of Rio Vista Municipal Code, Section 17.52.060, exempts private construction projects located one-quarter of a mile or less from an inhabited dwelling from City noise standards provided that construction occurs between the hours of 7:00 a.m. and 7:00 p.m. on weekdays and between 8:00 a.m. and 7:00 p.m. on Saturdays and Sundays. This standard effectively allows construction throughout the day and early evening, with activities outside of these hours subject to City noise standards. However, as Table 5.12-7 illustrates, typical construction noise levels range from 67.7 dBA to 94.3 dBA L_{eq} at 50 feet, generally exceeding the City's allowable noise thresholds during the nonexempted hours, which are generally 60 to 65 dBA L_{eq}, depending on the receiving land use. This makes compliance outside the exempt hours impractical for most construction activities.

Proposed Policy NE-8 would introduce more stringent regulations to provide greater noise protection for city residents, restricting all construction activity to the hours between 7:00 a.m. and 5:00 p.m. (unless an exemption is granted in the City's review of the project's entitlement or permit). Compared to the current standard, this policy reduces the allowable construction window by two hours and entirely prohibits evening and nighttime construction. Additionally, proposed Policy NE-8 would require all internal combustion engines used in conjunction with construction activities to be muffled according to the equipment manufacturer's requirements.

Construction noise in Rio Vista would continue to be an intermittent source of temporary noise regardless of whether the proposed project is adopted, and noise levels near individual construction sites associated with development and activities under the proposed project would not be substantially different from what they would be under the existing General Plan. Because specific project-level information is not available at this time, it is not possible nor appropriate to quantify the construction noise impacts at specific sensitive receptors. In most cases, construction of individual development projects associated with implementation of the proposed project would temporarily increase the ambient noise environment in the vicinity of each individual project, potentially affecting existing and future nearby sensitive uses. Proposed Policy NE-8 would introduce more stringent regulations to provide greater noise protection for city residents by reducing the allowable construction window by two hours and entirely prohibiting evening and nighttime construction. However, construction activities associated with any individual development could be near noise-sensitive receptors, and depending on the project type, equipment list, time of day, phasing, and overall construction durations, noise disturbances may occur for prolonged periods of time or during the more sensitive evening/nighttime hours. For these reasons, construction noise impacts associated with implementation of the proposed project are considered potentially significant.

Stationary Source Noise

The development of residential, automotive, industrial, or other uses and activities under the proposed project could generate substantial stationary noise from heating, ventilation, and air conditioning (HVAC) mechanical equipment; backup diesel generators; parking lot activity; backup beepers on trucks and equipment; and other sources. Table 5.12-8*, Stationary Source Noise Levels*, identifies noise levels generally associated with common stationary noise sources.

Table 5.12-8 Stationary Source Noise Levels

Stationary Noise Source	L_{eq} (at the source)
Commercial Car Wash	79.1 dBA
Drive Thru Activity (speaker)	89.1 dBA
Gasoline Dispensing Station	64.7 dBA
Generators	75.0 dBA
HVAC Mechanical Equipment	56.8 dBA
Parking Garage	52.6 dBA
Regional Shopping Center Parking Lot	61.1 dBA
Small Parking Lot	53.2 dBA
Tire and Lube Service Station	62.3 dBA
Truck Backup Beeper	79.0 dBA
Truck Yard/Warehouse	62.4 dBA

Source: Appendix 5.12-1
Notes: Details regarding how measurements were derived are shown in Table 5-2 of Appendix 5.12-1.

Stationary source noise is currently a notable source of noise in Rio Vista and would continue to be so regardless of whether the proposed project is adopted. Noise levels near individual sources under the proposed project would not be substantially different from what they would be under the existing General Plan. The Noise Element of the proposed 2045 General Plan addresses stationary noise as follows:

- **Policy NE-1:** New development shall be evaluated for compliance standards provided in Table 10-1 [of the 2045 General Plan]. Where existing noise levels would exceed acceptable levels, it shall be the obligation of the applicant proposing the project to ensure noise levels are reduced to acceptable levels.
- **Policy NE-2:** New development shall not generate operational noise levels that exceed the noise standards in Table 10-2 on surrounding properties.
- **Policy NE-3:** Where noise attenuation is required to meet the standards of this element, an emphasis shall be placed on site planning and project design, including, but are not limited to, building orientation, setbacks and building construction practices.
- **Policy NE-5:** When noise sensitive development is proposed in proximity to existing gas extraction facilities, the developer of the proposed project shall be responsible for meeting applicable noise standards within the proposed project.
- **Policy NE-6:** Ensure that noise sensitive uses do not encroach into areas needed by noise generating uses.

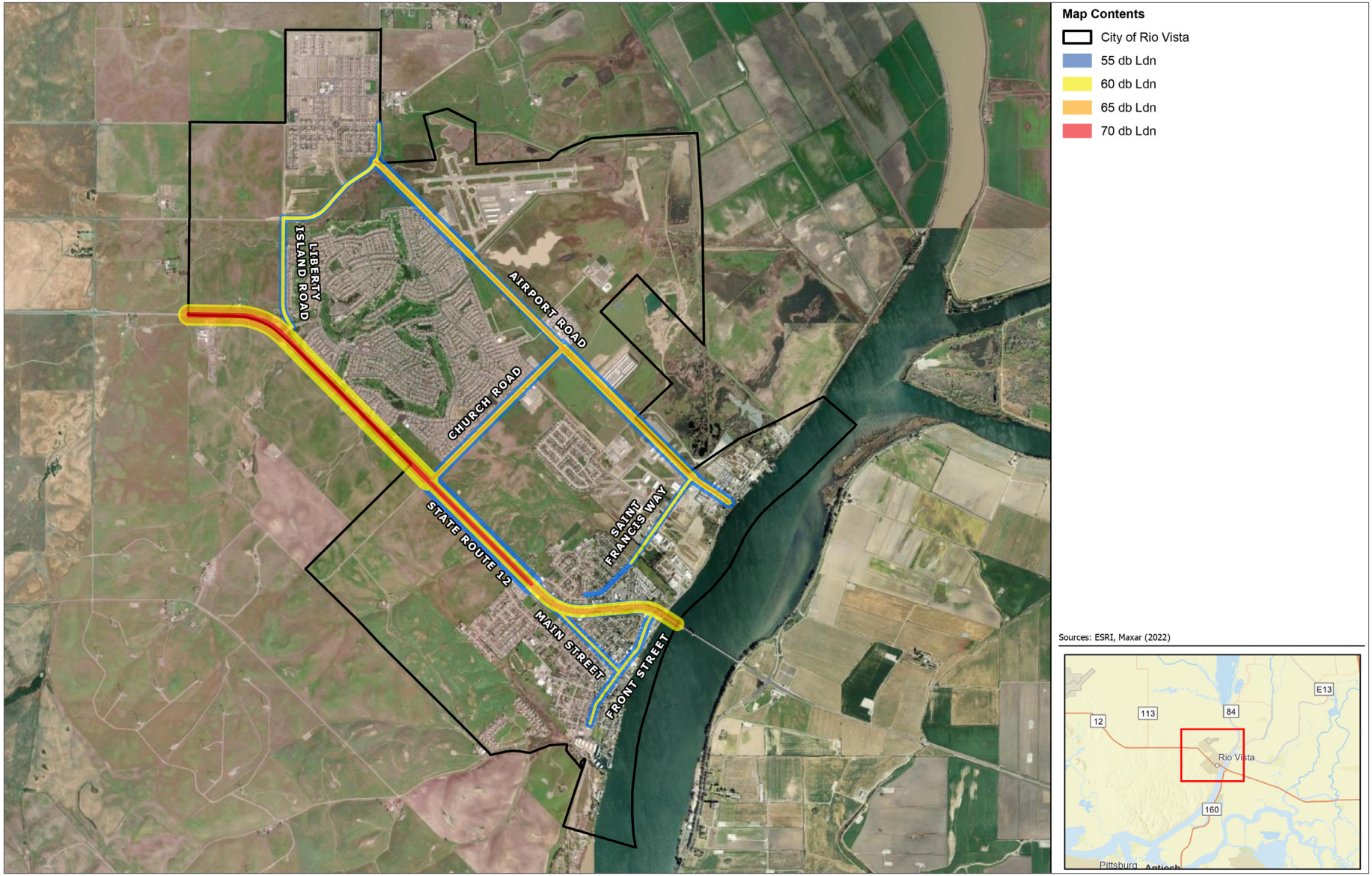
Proposed General Plan Policies NE-1 and NE-2 would require the integration of noise considerations into land use planning decisions to minimize new noise impacts, including noise impacts from stationary sources, to or from new development. These policy provisions would require an acoustical analysis for most new projects and consideration of noise-reducing measures. Policy NE-6 would prohibit noise-sensitive uses like residential neighborhoods from encroaching into areas planned for noise-generating uses such as industrial facilities.

With implementation of these proposed General Plan policies, future development and activities under the proposed project would result in a less than significant impact related to stationary noise sources.

Traffic Noise

Future development and activities under the proposed project are expected to affect the community noise environment mainly by generating additional traffic. Transportation-source noise levels were calculated using the FHWA Highway Noise Prediction Model (FHWA-RD-77-108), with traffic counts provided by Fehr & Peers (2024). The model calculates the average noise level at specific locations based on traffic volumes, average speeds, roadway geometry, and site environmental conditions. The average vehicle noise rates (energy rates) used in the FHWA model have been modified to reflect average vehicle noise rates identified for California by Caltrans. The Caltrans data show that California automobile noise is 0.8 to 1.0 dBA higher than national levels and that medium and heavy truck noise is 0.3 to 3.0 dBA lower than national levels. Future traffic noise contours are mapped in Figure 5.12-5, *Future Traffic Noise Contours*. Table 5.12-9, *Future (General Plan Buildout) Roadway Noise Levels*, shows the calculated off-site roadway noise levels under existing traffic levels compared to future buildout under the proposed project.

A 5 dBA change is required before any noticeable change in community response is expected. Based on this fact, a significant increase in traffic noise is considered an increase in the existing ambient noise environment of at least 5 dBA L_{dn}. As reflected in Table 5.12-9, this analysis included a large sample of local roadway segments but did not include all roadways in Rio Vista. The analyzed segments were selected to illustrate potential changes in roadway noise throughout Rio Vista. Therefore, additional roadways segments in Rio Vista may experience increased traffic noise.



Source: ECORP Consulting, Inc., 2024.

0 5,000
Scale (Feet)

Figure 5.12-5
Future Traffic Noise Contours

Table 5.12-9 (General Plan Buildout) Roadway Noise Levels

Roadway Segment	L_{dn} at 50 Feet		Difference	Significant Increase	Distance to L_{dn} Contour (feet)[1, 2]			
	Existing	Existing plus Project			70 dBA	65 dBA	60 dBA	55 dBA
State Route 12								
East of Front Street	65.8	68.0	+2.2	**No**	-	100	+200	-
Between Front Street and Drouin Drive	65.9	68.1	+2.2	**No**	-	103	+200	-
Between Drouin Drive and Amerada Road	68.2	70.5	+2.3	**No**	38	82	177	+300
Between Amerada Road and Summerset Road	69.3	71.6	+2.3	**No**	45	97	210	+300
West of Summerset Road	69.4	71.7	+2.3	**No**	46	98	212	+300
Front Street								
Between State Route 84 and Main Street	57.3	59.0	+1.7	**No**	-	-	40	127
Between Main Street and Hamilton Avenue	57.2	58.9	+1.7	**No**	-	-	39	124
Main Street								
Between State Route 12 and South Front Street	55.7	58.8	+3.8	**No**	-	-	38	120
Saint Francis Way								
Northeast of Rolling Green Drive	58.0	59.3	+1.3	**No**	-	-	45	96
Southwest of Rolling Green Drive	55.5	56.8	+1.3	**No**	-	-	-	76
Airport Road								
North of Liberty Island Road	55.5	60.0	+4.5	**No**	-	-	50	107
Between Liberty Island Road and Palisades Drive	59.2	63.6	+4.4	**No**	-	40	87	186
Between Palisades Drive and Baumann Road	59.2	63.6	+4.4	**No**	-	41	87	188
Between Baumann Road and Church Road	59.2	63.6	+4.4	**No**	-	40	87	186

Table 5.12-9 (General Plan Buildout) Roadway Noise Levels

Roadway Segment	L_{dn} at 50 Feet		Difference	Significant Increase	Distance to L_{dn} Contour (feet)[1, 2]			
	Existing	Existing plus Project			70 dBA	65 dBA	60 dBA	55 dBA
Between Church Road and Norman Richards Drive	62.3	65.3	+3.0	**No**	-	53	113	244
Between Norman Richards Drive and Saint Francis Way	62.3	65.3	+3.0	**No**	-	53	113	244
Between St Francis Way and Highway 84	60.0	63.0	+3.0	**No**	-	37	80	172
Church Road								
Between State Route 12 and Airport Road	57.7	62.5	+4.8	**No**	-	34	73	157
Liberty Island Road								
Between Summerset Road and Canright Road	51.2	60.0	+8.8	**Yes**	-	-	50	107
East of Canright Road	51.2	60.0	+8.8	**Yes**	-	-	50	108

Notes: Traffic noise levels were calculated using the FHWA Highway Noise Prediction Model in conjunction with the trip generation rate identified by Fehr & Peers. Refer to Appendix 5.12-1for traffic noise modeling assumptions and results.

1 Distance to L_{dn} contours do not account for the noise attenuation attributable to intervening structures.

2 All contour distances from developed areas are capped at 200 feet from roadway centerlines. All contour distances from areas with undeveloped land are capped at 300 feet from roadway centerlines.

As shown in Table 5.12-9, the only roadway that would experience an increase of more than 5.0 dBA L_{dn} over existing conditions is Liberty Island Road. As previously described, a 5 dBA change is required before any noticeable change in community response is expected. Based on this fact, a significant increase in traffic noise is considered an increase in the existing ambient noise environment of at least 5 dBA L_{dn}.

Proposed General Plan Policies NE-1 and NE-2 would require the integration of noise considerations into land use planning decisions to minimize new noise impacts, including noise impacts from traffic sources to or from new development. These policy provisions would require an acoustical analysis for most new projects and consideration of noise-reducing measures. Nonetheless, Liberty Island Road would experience an increase of more than 5.0 dBA L_{dn} over existing conditions with implementation of the proposed project, and traffic noise would be a significant impact.

Lead agencies have limited remedies at their disposal to effectively reduce traffic-related noise. Addressing traffic noise at the receiver rather than the source usually takes the form of noise barriers (e.g., sound walls). While constructing noise barriers along streets would reduce noise, the placement of sound walls between existing residences/businesses and local roadways would not be desirable; it would conflict with the community's aesthetic, design, and character and is therefore deemed infeasible. Furthermore, such barriers would likely require property owner approval, which cannot be ensured. While measures such as encouraging ridesharing, carpooling, and alternative modes of transportation could reduce vehicle volumes, such measures cannot be mandated of residents and have not been shown to reduce vehicle trips enough to reduce vehicle noise levels below established thresholds. Therefore, no feasible mitigation measures exist to reduce the identified significant impact.

Level of Significance Before Mitigation: Impact 5.12-1 would be potentially significant.

Mitigation Measures

There are no feasible mitigation measures.

Level of Significance After Mitigation: Impact 5.12-1 would be significant and unavoidable.

Impact 5.12-2: The proposed project would not result in the generation of excessive groundborne vibration or groundborne noise levels. [Threshold N-2]

Construction vibration is a potential occurrence in Rio Vista and would continue to be so regardless of whether the proposed project is adopted. Construction-related vibration near individual construction sites associated with development and activity under the proposed project would not be substantially different from what they would be under the existing General Plan. Construction activities will happen in a variety of locations throughout Rio Vista and will most likely require the use of off-road equipment that generates some degree of vibration. Construction activities that generate excessive vibration, such as blasting, would not be expected because Rio Vista's topography is flat and devoid of rock outcroppings. Receptors sensitive to vibration include structures (especially older masonry structures), people (especially residents, the elderly, and the sick), and equipment (e.g., magnetic resonance imaging equipment, high resolution lithographic, optical and electron microscopes). Regarding the potential effects of

groundborne vibration to people, except for long-term occupational exposure, vibration levels rarely affect human health.

The majority of construction equipment is not situated at any one location during construction activities, but spread throughout a construction site and at various distances from sensitive receptors. Since specific future projects under the proposed project are unknown at this time, it is conservatively assumed that the construction areas associated with these future projects could be within 50 feet of sensitive structures. The primary vibration-generating activities would be during grading, placement of underground utilities, and construction of foundations. Table 5.12-10, *Representative Vibration Source Levels for Construction Equipment*, shows the typical vibration levels produced by construction equipment at 50 feet.

Table 5.12-10 Representative Vibration Source Levels for Construction Equipment

Equipment	Peak Particle Velocity at 50 Feet (inches per second)	Vibration Level Vibration Velocity at 50 Feet (VdB)
Pile Driver (Impact)	0.225	95
Pile Driver (Sonic)	0.059	84
Vibratory Roller	0.073	85
Hoe Ram	0.031	78
Large Bulldozer	0.031	78
Caisson Drilling	0.031	78
Loaded Trucks	0.026	77
Jackhammer	0.012	70
Small Bulldozer	0.001	49

Source: Caltrans 2020c.

Proposed Policy NE-8 would introduce more stringent regulations surrounding the timing of construction to provide greater protection for city residents. Instead of exempting construction from City noise standards between the hours of 7:00 a.m. and 7:00 p.m. on weekdays and between 8:00 a.m. and 7:00 p.m. on Saturdays and Sundays, proposed Policy NE-8 would restrict all construction activity to the hours between 7:00 a.m. and 5:00 p.m. (unless an exemption is granted in the City's review of the project's entitlement or permit). Compared to the current standard, this policy reduces the allowable construction window by two hours and entirely prohibits evening and nighttime construction. Adherence to proposed Policy NE-8 would ensure that vibration reduction is being provided to minimize temporary construction-related vibration impacts. Construction vibration under the proposed project would be less than significant.

Additionally, in terms of the generation of groundborne vibration from sources other than construction, City municipal code Sections 17.28.040 and 17.29.040 prohibit any commercial or industrial use constituting or resulting in public or private nuisance because of vibration. Vibration from operations under the proposed project would not be any greater than what they are under the existing General Plan.

Level of Significance Before Mitigation: Impact 5.13-2 would be less than significant.

Mitigation Measures

No mitigation measures are required.

Impact 5.12-3: The proposed project would not expose people residing or working in the project area to excessive noise levels within the vicinity of a private airstrip or an airport land use plan. [Threshold N-3]

A significant source of noise in Rio Vista is the aircraft operations at the Rio Vista Municipal Airport in the north-central part of the city. High noise levels can occur both on airport property and in nearby neighborhoods when aircraft take off and land. The Solano County Airport Land Use Commission promotes land use compatibility around the Rio Vista Municipal Airport to minimize public exposure to excessive noise and safety hazards. The Solano County Airport Land Use Commission's ALUCP includes airport noise contour graphics, which help prevent the development of incompatible land uses near the airport.

Figure 5.12-4 shows the projected noise contours for 2035, reflecting an estimated 26,305 annual aircraft operations. Notably, the 65 dBA CNEL contour remains entirely within the airport boundary, and only a small portion of the 60 dBA CNEL contour extends beyond the airport, specifically near Palisades Drive and Airport Road. The 55 dBA CNEL contour extends further but follows a similar pattern. These contours guide future development decisions, ensuring that sensitive land uses are protected from excessive noise levels associated with airport operations.

The proposed project's Noise Element establishes policy guidance to minimize noise impacts within the community and sets noise control measures for the operational phases of land use projects. By identifying noise-sensitive areas and establishing compatibility guidelines (outlined in Table 10-1 of the Noise Element), this approach helps shape the distribution, location, and intensity of future land uses, ensuring that noise-related issues can be effectively mitigated through careful planning and project

design. A key policy, Policy NE-7, focuses on protecting new development within the 55 dBA CNEL contour of the Rio Vista Municipal Airport, as depicted in Figure 5.12-4. Projects within this contour will be reviewed for noise sensitivity and consistency with both City and ALUCP noise standards.

A fundamental strategy to minimize noise impacts is to avoid placing noise-sensitive land uses—such as schools, hospitals, residential areas, and recreational facilities—in areas where noise levels exceed acceptable thresholds. These noise-sensitive land uses must comply with the Maximum Allowable Exterior and Interior Noise Level standards in Table 10-1 of the 2045 General Plan Noise Element. Policy NE-1 and Policy NE-7 require new developments within the 55 dBA CNEL contour of the airport to conduct an acoustical analysis to assess compliance with the noise standards in Table 10-1. This analysis, typically involving baseline noise measurements with sound level meters, will determine whether the proposed development is compatible with the existing noise environment. The analysis will also guide the implementation of necessary noise mitigation measures, including advanced building construction methods and other design solutions to ensure adequate noise attenuation for sensitive land uses.

The goals and policies in the Noise Element of the proposed project and compliance with the Maximum Allowable Exterior and Interior Noise Level standards in Table 10-1 of the 2045 General Plan Noise Element would ensure that impacts of airport-related noise on future residents and workers in the city would be less than significant.

Level of Significance Before Mitigation: Impact 5.13-3 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.12.5 Cumulative Impacts

5.12.5.1 CUMULATIVE CONSTRUCTION NOISE AND VIBRATION

Construction noise impacts primarily affect the areas immediately adjacent to the construction site. Development that could occur with implementation of the proposed project could be constructed contemporaneously and could result in construction high noise levels. As discussed above, noise levels generated by individual pieces of construction equipment typically range from approximately 74 dBA to 101.3 dBA L_{max} at 50 feet and 67.7 dBA to 94.3 dBA L_{eq} at 50 feet. The City of Rio Vista has established and enforces noise standards for construction activity, including the establishment of

hours for construction activity that are exempt from City noise standards. Proposed Policy NE-8 would introduce more stringent regulations to provide greater noise protection for city residents. Instead of exempting construction noise from City noise standards between the hours of 7:00 a.m. and 7:00 p.m. on weekdays and between 8:00 a.m. and 7:00 p.m. on Saturdays and Sundays, proposed Policy NE-8 would restrict all construction activity to the hours between 7:00 a.m. and 5:00 p.m. (unless an exemption is granted in the City's review of the project's entitlement or permit). Compared to the current standard, this policy reduces the allowable construction window by two hours and entirely prohibits evening and nighttime construction. Additionally, proposed Policy NE-8 would require all internal combustion engines used in conjunction with construction activities to be muffled according to the equipment manufacturer's requirements. Therefore, although the potential exists for construction projects under the proposed project and other foreseeable development to occur simultaneously and in proximity to one another, construction equipment operations would operate within the constraints of the City of Rio Vista Municipal Code. Additionally, cumulative construction noise is currently an intermittent source of temporary noise in Rio Vista and will continue to be so regardless of whether the proposed project is adopted. Noise levels near multiple construction sites associated with development under the proposed project would not be substantially different from what they would be under the existing General Plan, and therefore the impact is less than significant.

The potential for a cumulative vibration-related damage impact is minimal because vibration impacts are based on approximate VdB levels. Thus, worst-case groundborne vibration levels from construction are determined by whichever individual piece of equipment generates the highest vibration levels. Unlike the analysis for average noise levels, in which noise levels of multiple pieces of equipment can be combined to generate a maximum combined noise level, approximate vibration levels do not combine in this manner. Vibration from multiple construction sites, even if they are close to one another, would not combine to raise the maximum VdB. Therefore, vibration impacts resulting from construction of future development under the proposed project would not combine with vibration effects from cumulative projects in the vicinity, and the impact would be less than significant.

5.12.5.2 CUMULATIVE STATIONARY SOURCE NOISE

Long-term stationary noise sources associated with development and activities under the proposed project, combined with other cumulative projects, could cause local noise level increases. Noise levels associated with the proposed project and cumulative

development combined could result in higher noise levels than considered separately. However, as described above, proposed General Plan Policies NE-1, NE-2, NE-3, NE-5, and NE-6 would protect the inhabitants of the city against all forms of noise, including stationary source noise. With implementation and adherence to the previously listed proposed policies, future development under the proposed project and cumulative development combined would not create cumulatively considerable stationary noise sources, and the impact would be less than significant.

Cumulative Traffic Noise

The discussion of cumulative operational traffic noise impacts assesses whether future development under the proposed project, in conjunction with overall citywide growth and other cumulative projects, would significantly affect the roadway noise and, if so, whether its contribution to the cumulative impact would be considerable. The analysis in Impact 5.12-1 is largely a cumulative analysis in that the transportation modeling also includes citywide and regional changes in housing units and employment through the General Plan horizon. Thus, Impact 5.12-1 considers the changes in travel demand projected through the 2045 General Plan horizon due to land use growth, and the cumulative transportation and infrastructure projects anticipated both inside and outside Rio Vista. As identified in Impact 5.12-1, the proposed project would result in a significant traffic noise impact to Liberty Island Road; therefore, the proposed project would result in a cumulatively considerable and significant noise impact associated with cumulative traffic noise.

5.12.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: Impact 5.13-2 and Impact 5.13-3.

Without mitigation, the following impact would be **potentially significant**:

- **Impact 5.13-1:** The proposed project would result in the generation of substantial temporary and 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.

5.12.7 Mitigation Measures

Impact 5.12-1

Mitigation Measures

There are no feasible mitigation measures.

5.12.8 Level of Significance After Mitigation

Impact 5.12-1

Future development and activities under the proposed project are expected to affect the community noise environment mainly by generating additional traffic. Liberty Island Road is expected to experience a significant increase in traffic noise of more 5 dBA L_{dn} over existing conditions. Though proposed General Plan policies would require the integration of noise considerations into land use planning decisions to minimize new noise impacts, and require measures to reduce vehicle noise levels, Impact 5.17-1 would be ***significant and unavoidable***.

5.12.9 References

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5.13 POPULATION AND HOUSING

This section of the DEIR examines the potential for socioeconomic impacts of the proposed project on the City of Rio Vista, including changes in population, employment, and housing. Cumulative impacts related to population and housing would be contiguous with the city boundaries.

5.13.1 Environmental Setting

5.13.1.1 REGULATORY BACKGROUND

State

Housing Accountability Act

The Housing Accountability Act (HAA) was passed in 1982 and amended under Assembly Bill 678 and Senate Bill 167 in 2017 with the aim to limit the ability of local government to restrict the development of new housing. Specifically, the HAA prohibits a local agency from disapproving, or conditioning approval in a manner than renders infeasible, a housing development project for very low-, low-, or moderate-income households or an emergency shelter unless the local agency makes specified written findings based on a preponderance of evidence in the record.

Housing Crisis Act

Senate Bill (SB) 330, or the Housing Crisis Act of 2019, aims to address California's housing shortage by expediting the approval process for housing development of all types, particularly in regions suffering the worst housing shortages and highest rates of displacements. To address the crisis, SB 330 prohibits some local discretionary land use controls currently in place and generally requires cities and counties to approve all housing developments that comply with current zoning codes and general plans. SB 330 requires that a housing development project only be subject to the ordinances, policies, and standards adopted and in effect when a preliminary application is submitted, notwithstanding the provisions of the HAA or any other law, subject to certain exceptions.

Regional

Association of Bay Area Governments

The Association of Bay Area Governments (ABAG) is a regional planning agency encompassing nine counties in the San Francisco Bay Area, including Solano County. ABAG is responsible for conducting the Bay Area's Regional Housing Needs Allocation

(RHNA) process every eight years via the Housing Methodology Committee in conjunction with local elected officials and staff, stakeholders, and residents from around the region.

The California Department of Housing and Community Development (HCD) has approved the ABAG Regional Housing Needs Allocation (RHNA) Plan. HCD's approval comes after action by the ABAG Executive Board to approve the Final RHNA, which occurred on December 16, 2021. The Final RHNA Plan distributes the Bay Area's portion of the state housing needs to local jurisdictions within the nine-county region and reports the methodology used for determining the RHNA (ABAG 2021).

Local

City of Rio Vista

The existing General Plan contains the following policies related to population and housing through the Planning Constraints and Boundaries Element, and Land Use Element:

Planning Constraints and Boundaries Element

- **Policy 3.3.B:** The City shall ensure that additional lands are needed to achieve a jobs/housing balance prior to annexation.

Land Use Element

- **Policy 4.1A:** Growth shall provide a strong diversified economic base and a reasonable balance between employment and housing for all income ranges.
- **Policy 4.1.D**: The City shall accommodate projected population and employment growth in areas where the appropriate level of public infrastructure and services are planned or will be made available concurrent with development.
- **Policy 4.4.H:** The City shall require a very low-density single-family residential housing component in the Residential Estate district to maintain a balanced local housing market.

City of Rio Vista Municipal Code

Chapter 17.78: Density Bonus

The purposes of this chapter are to provide incentives to produce housing for very low income, lower income, moderate income, or senior households; establish the standards and procedures for granting affordable housing density bonuses for housing developments in an effort to incentivize the development of affordable units in the city;

and implement the requirements of the State Density Bonus Law with Government Code Section 65915.

City of Rio Vista 6th Cycle Housing Element

The City of Rio Vista adopted the 6th Cycle Housing Element on July 18, 2023. The Housing Element is required to identify and analyze existing and projected housing needs and include statements of the County's goals, policies, quantified objectives, and scheduled programs for the preservation, improvement, and development of housing. State law (Government Code Sections 65580–65589.8) mandates the content of the Housing Element and requires an analysis of:

- Population and employment trends
- The fair share of the regional housing needs
- Household characteristics
- An inventory of land suitable for residential development
- Governmental and non-governmental constraints on the improvement, maintenance, and development of housing
- Special housing needs
- Opportunities for energy conservation
- Publicly assisted housing developments that may convert to non-assisted housing developments

The purpose of these requirements is to demonstrate adequate housing resources to meet the assigned RHNA for all housing categories.

The 6th Cycle Housing Element includes the following policies applicable to population and housing:

- **Policy 6.1A:** Ensure there is a sufficient supply of multifamily and single-family zoned land to meet the housing needs identified in the Regional Housing Needs Allocation.
- **Policy 6.1B:** Ensure that adequate infrastructure and public services are available to support pre-approved, ongoing developments and future projects within the city.
- **Policy 6.1C:** Facilitate the development of affordable housing by providing, when feasible, appropriate financial and regulatory incentives.
- **Policy 6.1D:** Increase access to homeownership by coordinating with developers to identify units appropriate for homeownership for low- and moderate-income households and by working with other agencies to increase access to

homeownership for first-time homebuyers and low- and moderate-income households.

- **Policy 6.1E:** Encourage energy conservation in the development of new housing and the rehabilitation of existing housing.
- **Policy 6.1F:** Grant priority for water and sewer to proposed developments that include housing that is affordable to low- and very low-income households.
- **Policy 6.2.A:** As the City's housing stock ages, pursue all available federal and state funds to establish a housing rehabilitation program.
- **Policy 6.2.B:** Focus rehabilitation assistance and community preservation efforts in the aging neighborhoods, which have a concentration of older and/or substandard residential structures.
- **Policy 6.2.C:** Preserve the affordability of federal- and state-subsidized units at risk of conversion to market rate or other affordable housing resources.
- **Policy 6.3.A:** Encourage housing developers to produce affordable units by providing development standard incentives for projects that include new affordable units available to special needs groups.
- **Policy 6.3.B:** Ensure the availability of suitable sites for the development of affordable housing to meet the needs of all household income levels, including special needs populations.
- **Policy 6.3.C:** Promote the development of special needs housing, such as housing for seniors; housing persons with physical, developmental, or mental disabilities; farmworkers, single parent households, and housing for extremely low-income persons.
- **Policy 6.3.D:** Support family housing that addresses resident needs for childcare, youth services, recreation opportunities, and access to transit.
- **Policy 6.3.E:** Participate regionally in addressing homelessness issues.
- **Policy 6.4A:** Periodically review and update the Zoning Ordinance to stay abreast of updates to State law to reduce constraints to emergency shelters, low barrier navigation centers, supportive housing, and group homes.
- **Policy 6.4B:** Monitor State and federal housing-related legislation, and update City plans, ordinances, and processes as appropriate to remove or reduce governmental constraints.
- **Policy 6.5A:** Support ongoing efforts by federal and State agencies and continue city efforts, in the enforcement of fair housing laws prohibiting discrimination in the development, financing, rental, or sale of housing.
- **Policy 6.5B:** Engage actively with local tribal representatives to identify opportunities to preserve and feature tribal, cultural, historical, and archaeological resources.

- **Policy 6.5C:** Facilitate increased participation among traditionally underrepresented groups in the public decision-making process.

5.13.1.2 EXISTING CONDITIONS

Population

Table 5.13-1, *Population Trends in the City of Rio Vista and Solano County*, shows the population trends in Rio Vista and Solano County from 2013 to 2023.

Table 5.13-1 Population Trends in the City of Rio Vista and Solano County

	City of Rio Vista		Solano County	
Year	Population	Percentage Change	Population	Percentage Change
2013	7,733	-	419,493	-
2014	8,050	4.10	423,383	0.93
2015	8,291	2.99	426,849	0.82
2016	8,657	4.41	430,315	0.81
2017	9,024	4.24	435,186	1.13
2018	9,321	3.29	436,813	0.37
2019	9,670	3.74	438,205	0.32
2020	9,990	3.31	453,491	3.49
2021	9,952	-0.38	449,116	-0.96
2022	9,916	-0.36	445,881	-0.72
2023	9,988	0.73	443,749	-0.48

Sources: DOF 2021, 2023.

Housing

Housing Trends

As shown in Table 5.13-2, *Housing Growth Trends in the City of Rio Vista and Solano County*, the rate of housing growth has varied over the years from 2013 to 2023.

Table 5.13-2 Housing Growth Trends in the City of Rio Vista and Solano County

	City of Rio Vista		Solano County	
Year	Housing Units	Percentage Change	Housing Units	Percentage Change
2013	4,000	-	154,111	-
2014	4,132	3.30	154,782	0.44
2015	4,232	2.42	155,440	0.43
2016	4,383	3.57	156,375	0.60
2017	4,546	3.72	157,555	0.75
2018	4,692	3.21	158,786	0.78
2019	4,878	3.96	159,586	0.50
2020	5,199	6.58	162,237	1.66
2021	5,199	0.00	162,792	0.34
2022	5,247	0.92	163,820	0.63
2023	5,351	1.98	165,043	0.75

Sources: DOF 2021, 2023.

Regional Housing Needs Assessment

As shown in Table 5.13-3, *City of Rio Vista 2023-2031 RHNA*, the City of Rio Vista's RHNA allocation for the 2023-2031 planning period is 327 units. This number was calculated by ABAG based on the city's share of the region's employment growth, migration and immigration trends, and birth rates.

Table 5.13-3 City of Rio Vista 2023-2031 RHNA

Income Category	Area Median Income Percentage	Number of Units	Percentage
Very Low[1]	<50%	79	24.16%
Low	50-80%	41	12.54%
Moderate	80-120%	50	15.29%
Above Moderate	>120%	157	48.01%
Total		**327**	**100%**

Source: Rio Vista 2023.
1 It is assumed that 50 percent of the very low-income housing units are allocated to the extremely low-income category.

Employment

Employment Trends

According to the California Employment Development Department, the growth rate of employment in the City of Rio Vista and Solano County have varied over the years. The City of Rio Vista and Solano County employment and annual employment change

percentages are shown in Table 5.13-4, *City of Rio Vista and Solano County Employment Trends*.

Table 5.13-4 City of Rio Vista and Solano County Employment Trends

	City of Rio Vista		Solano County	
Year	Employment	Percentage Change	Employment	Percentage Change
2013	2,500	-	183,800	-
2014	2,600	4.00	187,000	1.74
2015	2,700	3.85	192,200	2.78
2016	2,600	-3.70	195,800	1.87
2017	2,900	11.54	198,000	1.12
2018	2,800	-3.45	200,800	1.41
2019	2,500	-10.71	200,600	-0.10
2020	2,800	12.00	182,500	-9.02
2021	2,800	0.00	185,800	1.81
2022	3,000	7.14	193,800	4.31
2023	3,000	0.00	193,600	-0.10

Source: EDD 2023.

Existing Jobs

Table 5.13-5, *City of Rio Vista: Industry by Occupation (2010 and 2020)*, shows the total number of jobs per industry in the city in 2010 and 2020. According to the US Census, the City of Rio Vista had 1,474 jobs in 2010 and 1,476 jobs in 2020. The three largest occupational categories during 2010 were construction, educational services, and accommodation and food services; in 2020 they were retail trade, construction, and educational services.

Table 5.13-5 City of Rio Vista; Industry Occupation (2010 and 2020)

Industry/Occupation	Estimated Employees 2010 (Percent of Total)		Estimated Employees 2020 (Percent of Total)		Percent Change
Agriculture, Forestry, Fishing and Hunting	84	5.7%	84	5.7%	0.00%
Mining, Quarrying, and Oil and Gas Extraction	133	9.0%	138	9.3%	0.30%
Utilities	13	0.9%	21	1.4%	0.50%
Construction	202	13.7%	204	13.8%	0.10%
Manufacturing	113	7.7%	43	2.90%	-4.80%
Wholesale Trade	71	4.8%	30	2.0%	-2.80%
Retail Trade	111	7.5%	245	16.6%	9.10%
Transportation and Warehousing	2	0.1%	19	1.3%	1.20%
Information	9	0.6%	0	0.0%	-0.60%

Table 5.13-5 City of Rio Vista; Industry Occupation (2010 and 2020)

Industry/Occupation	Estimated Employees 2010 (Percent of Total)		Estimated Employees 2020 (Percent of Total)		Percent Change
Finance and Insurance	71	4.8%	12	0.8%	-4.00%
Real Estate and Rental and Leasing	18	1.2%	15	1.0%	-0.20%
Professional, Scientific, and Technical Services	26	1.8%	21	1.4%	-0.40%
Management of Companies and Enterprises	0	0.0%	0	0.0%	0.00%
Administration & Support, Waste Management and Remediation	18	1.2%	31	2.1%	0.90%
Educational Services	186	12.6%	183	12.4%	-0.20%
Health Care and Social Assistance	30	2.0%	71	4.8%	2.80%
Arts, Entertainment, and Recreation	111	7.5%	69	4.7%	-2.80%
Accommodation and Food Services	157	10.7%	146	9.9%	-0.80%
Other Services (excluding Public Administration)	75	5.1	86	5.8%	0.70%
Public Administration	44	3.0%	58	3.9%	0.90%
TOTAL	**1,474**	**99.9%**	**1,476**	**99.8%**	**-1.10%**

Sources: US Census Bureau 2025.

Growth Projections

Association of Bay Area Governments

ABAG undertakes comprehensive regional planning with an emphasis on transportation, producing an RTP/SCS that provides projections of population, households, and total employment for both Rio Vista and Solano County. Based on their share of California's and the region's employment growth, migration and immigration trends, and birth rates, ABAG projects the population, housing, and employment will grow at an increasing rate in the city and county. These projections are summarized in Table 5.13-6, *ABAG Growth Projections for the City of Rio Vista and Solano County*.

Table 5.13-6 ABAG Growth Projections for the City of Rio Vista and Solano County

	City of Rio Vista			Solano County		
Year	2020	2040	Percent Increase (2020-2040)	2020	2040	Percent Increase (2020-2040)
Population	7,705	14,630	89.8%	428,305	510,660	19.2%
Households	3,475	6,300	81.3%	145,880	169,365	16.1%
Housing Units [1]	3,301	5,985	81.3%	138,586	160,897	16.1%
Employment	2,365	2,520	6.5%	133,230	150,995	13.3%
Jobs-Housing Ratio	0.72	0.42	-0.30	0.96	0.94	-0.02%

Source: ABAG 2018.
1 Housing units in ABAG projections are estimated based on number of households and a vacancy rate of 5 percent.

Jobs-Housing Ratio

The jobs-housing ratio is a general measure of the total number of jobs versus housing in a defined geographic area, without regard to economic constraints or individual preferences. The jobs-housing ratio, as well as the types of jobs versus the price of housing, has implications for mobility, air quality, and the distribution of tax revenues. The jobs-housing ratio is one indicator of a project's effect on growth and quality of life in the city. ABAG applies the jobs-housing ratio at the regional and subregional levels to analyze the fit between jobs, housing, and infrastructure. A focus of ABAG's regional planning efforts has been to improve this balance; however, jobs-housing goals and ratios are only advisory. There is no ideal jobs-housing ratio adopted in state, regional, or City policies. The American Planning Association (APA) is an authoritative resource for community planning best practices, including recommendations for assessing job-housing ratios. Although APA recognizes that an ideal jobs-housing ratio will vary across jurisdictions, its recommended target for an appropriate jobs-housing ratio is 1.5, with a recommended range of 1.3 to 1.7 jobs for each housing unit (Weitz 2003).

As shown in Table 5.13-6, based on ABAG's growth projections, Rio Vista is projected not to be a jobs-rich community, with the number of housing units increasing at a faster rate than jobs.

5.13.2 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:

P-1 Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).

P-2 Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

5.13.3 Proposed General Plan Goals and Policies

The following goals, policies, and programs from the proposed General Plan are applicable to population and housing.

Economic Development Element

- **Goal ED-1:** A vibrant community that serves and attracts visitors, residents, and businesses.
- **Goal ED-2:** A business climate that enables and promotes the expansion of existing businesses and the attraction of new businesses.
- **Goal ED-3:** Increased employment in Rio Vista, and an educated, skilled, and competitive workforce in line with current future jobs in the City.
  - **Policy ED-1:** Pursue economic development and growth through actions that are responsible, steady, and continuous.
  - **Policy ED-2:** Actively support and encourage the success and growth of existing local businesses and the attraction of new businesses.
  - **Policy ED-3:** Actively promote establishment and expansion of commercial businesses that increase local spending within Rio Vista and provide needed goods and services to residents and businesses.
  - **Policy ED-4:** Actively support and encourage hotels to locate in Rio Vista, especially full service hotels with conference facilities or other amenities, but also bed-and-breakfast and other hotel options, that will attract more tourism to Rio Vista.
  - **Policy ED-6:** Pursue economic development at the local, regional, state and federal level, leveraging relationships and seeking partners to promote economic development in Rio Vista.

- **Policy ED-8:** Pursue economic development across all types of businesses, including commercial/retail, tourism, professional services, industrial and agriculture.

Housing Element

- **Goal 6.1:** Assist in the development of adequate housing to meet the City's fair share of the region's housing needs for all economic segments of the population.
  - **Policy 6.1A:** Ensure there is a sufficient supply of multifamily and single-family zoned land to meet the housing needs identified in the Regional Housing Needs Allocation (RHNA).
  - **Policy 6.1C:** Facilitate the development of affordable housing by providing, when feasible, appropriate financial and regulatory incentives.
  - **Policy 6.1D:** Increase access to homeownership by coordinating with developers to identify units appropriate for homeownership for low- and moderate-income households and by working with other agencies to increase access to homeownership for first-time homebuyers and low- and moderate-income households.
- **Goal 6.2:** Conserve and improve the existing housing stock within the City of Rio Vista.
  - **Policy 6.2.A:** As the City's housing stock ages, pursue all available federal and state funds to establish a housing rehabilitation program.
  - **Policy 6.2.B:** Focus rehabilitation assistance and community preservation efforts in the aging neighborhoods, which have a concentration of older and/or substandard residential structures.
  - **Policy 6.2.C:** Preserve the affordability of federal- and state-subsidized units at risk of conversion to market rate or other affordable housing resources.
- **Goal 6.3:** Provide a broad range of housing opportunities with emphasis on providing housing which meets the specific needs of the community.
  - **Policy 6.3.A:** Encourage housing developers to produce affordable units by providing development standard incentives for projects that include new affordable units available to special needs groups
  - **Policy 6.3.B:** Ensure the availability of suitable sites for the development of affordable housing to meet the needs of all household income levels, including special needs populations.

- **Policy 6.3.C:** Promote the development of special needs housing, such as housing for seniors; housing persons with physical, developmental, or mental disabilities; farmworkers, single parent households, and housing for extremely low-income persons.

5.13.4 Environmental Impacts

Impact 5.13-1: The proposed project would not induce substantial unplanned population growth in the city. [Threshold P-1]

It is important to note the differences between project buildout and ABAG projections. ABAG projections are utilized in this analysis for general comparison purposes. Buildout of the city is not linked to a development timeline and is based on expected growth rates through the year 2045. In addition, the proposed project provides policy-level guidance and not specific project proposals. On the other hand, ABAG projections are based on annual increments in order to develop regional growth projections for land use and transportation planning over a 20-year horizon to 2040. A comparison of the proposed project buildout to ABAG's population, housing, and employment projections assists in providing context for comparison.

Table 5.13-7, *Comparison of 2040 ABAG and Proposed General Plan Buildout Projections,* shows the buildout projections in comparison to the ABAG 2040 projections.

Table 5.13-7 Comparison of 2040 ABAG and Proposed General Plan Buildout Projections

	Existing Conditions	2040 ABAG Projections	General Plan Update Buildout Projections (2045)
Population	10,553	14,630	16,722
Employment	2,437	2,520	3,842
Housing Units	4,351	5,985	7,714
Jobs-Housing Ratio	0.56	0.42	0.49

Sources: ABAG 2018; Rio Vista 2024.

Population and Employment

Under existing conditions, the City has approximately 10,553 residents and 2,437 jobs. By the year 2045, the proposed General Plan projects approximately 16,722 residents and 3,842 jobs. Assuming additional residents and jobs are new to the city, this is an increase of 59 percent and 58 percent, respectively, compared to existing conditions.

The ABAG population and employment projections for Rio Vista in 2040 are 14,630 residents and 2,520 jobs, respectively. The 2045 population and employment projections under the proposed project would be approximately 14 percent and 52 percent greater, respectively, than the ABAG 2040 projections. The RHNA associated with the statewide housing crisis has created an expectation that population projections for the region and the city will need to change. Because of this, the ABAG RTP/SCS projections are out of sync with RHNA allocations and do not reflect substantial growth projections forecast for Rio Vista. The current projections, shown in Table 5.13-4 and Table 5.13-6, do not reflect the RHNA and the approximately 6,169 new residents and 1,405 new jobs at buildout. While the proposed population and jobs would exceed ABAG estimates, the increase would not be a substantial unplanned growth in population; the City can accommodate the potential growth as described in this DEIR, and therefore, impacts would be less than significant.

Housing

There are currently 5,247 housing units in the city and at full buildout there would be 7,714 units, which is an increase of 47 percent from existing conditions. The estimated forecast for housing units under the proposed project would exceed the 2040 ABAG projections (see Table 5.13-7) by approximately 29 percent.

It should be noted that the State of California has a shortage of housing. In 2019, Governor Newsom signed several bills aimed at addressing the need for more housing, including the Housing Crisis Act of 2019 (SB 330). The RTP/SCS was prepared prior to HCD's RHNA allocation to ABAG of 441,176 units, which number of units led ABAG to ultimately give Rio Vista a RHNA of 327 units for the 2021–2029 planning period. This RHNA allocation is slightly larger than the City's previous RHNA allocation (299 units) and larger than the relatively flat growth forecast in the RTP/SCS, indicating that ABAG's RTP/SCS is out of sync with RHNA allocations and that both HCD and ABAG forecast substantial growth for Rio Vista that is not yet reflected in the RTP/SCS.

The City adopted its Housing Element and obtained state certification in 2023, including several policies that support a variety of housing types and densities to accommodate the requirements of the RHNA. For example, Policy 6.1A supports sufficient supply of multifamily and single-family zoned land to meet the housing needs identified in the RHNA. Policy 6.3.C promotes the development of special needs housing, such as for seniors; persons with physical, developmental, or mental disabilities; farmworkers; single-parent households; and housing for extremely low-income persons. Additionally, the following policies call for the development of affordable housing:

- **Policy 6.1C:** Facilitate the development of affordable housing by providing, when feasible, appropriate financial and regulatory incentives.
- **Policy 6.2.C:** Preserve the affordability of federal- and state-subsidized units at risk of conversion to market rate or other affordable housing resources.
- **Policy 6.3.A:** Encourage housing developers to produce affordable units by providing development standard incentives for projects that include new affordable units available to special needs groups.

As indicated above, the increase would not result in a substantial unplanned growth in housing since ABAG's RTP/SCS is out of sync with the RHNA allocations. Additionally, with a statewide shortage in housing, the RHNA requirements and City's RHNA allocation are needed to meet the need for housing. Therefore, impacts would be less than significant.

Jobs-Housing Ratio

According to Table 5.13-7, the 2040 ABAG jobs-housing ratio would be 0.42, and under the proposed project the jobs-housing ratio would be 0.49, which are both less than the City's existing ratio of 0.56. Though implementation of the proposed project would not bring the City closer to the target ratio of 1.3 to 1.7 jobs per housing unit, the proposed project would be consistent with the 2040 ABAG jobs-housing ratio estimate.

In general, the land uses identified in the proposed project provide opportunities for residents in Rio Vista to live and work in the city rather than commuting to or from other areas. Additionally, the following policies are aimed at supporting a resilient local economy:

- **Policy ED-1:** Pursue economic development and growth through actions that are responsible, steady, and continuous.
- **Policy ED-2:** Actively support and encourage the success and growth of existing local businesses and the attraction of new businesses.
- **Policy ED-3:** Actively promote establishment and expansion of commercial businesses that increase local spending within Rio Vista and provide needed goods and services to residents and businesses.
- **Policy ED-4:** Actively support and encourage hotels to locate in Rio Vista, especially full service hotels with conference facilities or other amenities, but also bed-and-breakfast and other hotel options, that will attract more tourism to Rio Vista.

- **Policy ED-6:** Pursue economic development at the local, regional, state and federal level, leveraging relationships and seeking partners to promote economic development in Rio Vista.
- **Policy ED-8:** Pursue economic development across all types of businesses, including commercial/retail, tourism, professional services, industrial and agriculture.

Therefore, though buildout of the proposed project would directly and indirectly induce population growth, the jobs-housing ratio in the city would be improved after buildout allowed under the proposed project. Therefore, impacts would be less than significant.

Level of Significance Before Mitigation: Impact 5.13-1 would be less than significant.

Mitigation Measures

No mitigation measures required.

Impact 5.13-2: The proposed project would not result in the displacement of people and/or housing. [Threshold P-2]

The purpose of the proposed project is to provide orderly growth in Rio Vista by balancing the distribution, location, and extent of land uses. The proposed project would include a variety of housing types and provide additional residential opportunities in the city. Compliance with the City's Housing Element would facilitate the development of the various housing types by providing a supply of land that is adequate to accommodate the RHNA and maintain an inventory of housing opportunity sites. As part of the Housing Element, the City prepared an inventory of adequate sites to show how it could meet the requirements for the RHNA. Additionally, Government Code Section 66300(d)(2) requires that any project that would demolish residential units must create at least as many units as it will demolish.

As described in Chapter 5.11, *Land Use and Planning*, the land use pattern, intensities, and densities under the proposed project would remain generally unchanged, and future development would occur in areas that are already planned for development. Moreover, the following policies ensure sufficient housing supply, assist with homeownership, increase affordable housing, and establish a rehabilitation program.

- **Policy 6.1A:** Ensure there is a sufficient supply of multifamily and single-family zoned land to meet the housing needs identified in the Regional Housing Needs Allocation (RHNA).

- **Policy 6.1C:** Facilitate the development of affordable housing by providing, when feasible, appropriate financial and regulatory incentives.
- **Policy 6.1D:** Increase access to homeownership by coordinating with developers to identify units appropriate for homeownership for low- and moderate-income households and by working with other agencies to increase access to homeownership for first-time homebuyers and low- and moderate-income households.
- **Policy 6.2.A:** As the City's housing stock ages, pursue all available federal and state funds to establish a housing rehabilitation program.
- **Policy 6.2.B:** Focus rehabilitation assistance and community preservation efforts in the aging neighborhoods, which have a concentration of older and/or substandard residential structures.
- **Policy 6.3.B:** Ensure the availability of suitable sites for the development of affordable housing to meet the needs of all household income levels, including special needs populations.
- **Policy 6.2.C:** Preserve the affordability of federal- and state-subsidized units at risk of conversion to market rate or other affordable housing resources.
- **Policy 6.3.A:** Encourage housing developers to produce affordable units by providing development standard incentives for projects that include new affordable units available to special needs groups

Therefore, the proposed project would not displace any people and would provide more housing opportunities than currently exist, and there would be no impact.

Level of Significance Before Mitigation: Impact 5.13-2 would have no impact.

Mitigation Measures

No mitigation measures required.

5.13.5 Cumulative Impacts

The context considered for cumulative impacts is the region covered by ABAG. As discussed above, development under the proposed project would not displace housing within the city. Because Rio Vista has no control over development in other areas in the region, it would not contribute to the displacement of housing on other sites in the region. The proposed project would encourage development on land in the city that is already proposed for development, as well as intensification and infill projects rather than the annexation of land for development. The projected change in the jobs-housing ratio is intended to encourage the creation of jobs for more of the city's residents who currently

commute elsewhere for employment. Development under the proposed project would be more balanced compared to existing conditions, by increasing employment opportunities as well as residential options for residents at various income levels.

Though the proposed project would exceed the growth projections in ABAG's RTP/SCS growth forecasts for population, employment, and housing growth, the RTP/SCS projections do not account for RHNA allocations, growth trend changes, and housing shortages. The region is projected to accommodate similar population and housing growth through 2045; therefore, the proposed project would not constitute a cumulatively considerable contribution to regional growth. . Because the proposed General Plan adequately plans for the growth anticipated by the RHNA, impacts would be less than significant.

5.13.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, all impacts would be less than significant.

5.13.7 Mitigation Measures

No mitigation measures are required.

5.13.8 Level of Significance After Mitigation

Impacts would be less than significant.

5.13.9 References

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5.14 PUBLIC SERVICES AND RECREATION

This section addresses the proposed project's impacts to public services, including fire protection and emergency services, police protection services, school services, and library services, as well as public parks and recreational facilities in the city. Public and private utilities and service systems, including water, wastewater, and solid waste services and systems, are addressed in Section 5.16, *Utilities and Service Systems*.

5.14.1 Fire Protection and Emergency Services

5.14.1.1 ENVIRONMENTAL SETTING

This section summarizes key state and local regulations and programs related to fire protection and emergency services in the City of Rio Vista. There are no federal regulations pertaining to fire protection and emergency services that apply to the proposed project.

Regulatory Background

State Regulations

California Building Code

The State of California provides a minimum standard for building design through Title 24, Part 2, of the California Code of Regulations (CCR), commonly referred to as the "California Building Code" (CBC). The CBC is updated every three years. It is generally adopted on a jurisdiction-by-jurisdiction basis, subject to further modification based on local conditions. The City of Rio Vista adopted the 2022 edition of the CBC under City Ordinance 003-2023 by repealing and replacing Chapters 15.04.030 and 15.4.080, California Buildings Standards Code Adopted, of the Rio Vista Municipal Code. Commercial and residential buildings are plan checked by local County building officials for compliance with the CBC. Typical fire safety requirements of the CBC include the installation of sprinklers in high-rise buildings and other facilities; the establishment of fire resistance standards for fire doors, building materials, and particular types of construction in high fire hazard severity zones; requirements for smoke-detection systems and exiting requirements; and the clearance of debris.

California Fire Code

The 2007 California Fire Code (Title 24, Part 9 of the CCR) establishes regulations to safeguard against hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures, and premises. The Fire Code also establishes requirements intended to provide safety and assistance to firefighters and emergency responders

during emergency operations. The provisions of the Fire Code apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolition of every building or structure throughout the State of California. The Fire Code includes regulations regarding fire-resistance-rated construction, fire protection systems such as alarm and sprinkler systems, fire services features such as fire apparatus access roads, means of egress, fire safety during construction and demolition, and wildland-urban interface areas. The City of Rio Vista adopted the 2022 California Fire Code in Municipal Code Chapter 8.20, California Fire Code Adopted.

California Health and Safety Code

Additional state fire regulations are in Section 13000 et seq. of the California Health and Safety Code, which include regulations for building standards, fire protection and notification systems, fire protection devices such as extinguishers, smoke alarms, high-rise building and child-care facility standards, and fire suppression training.

California Occupational Safety and Health Administration

In accordance with CCR Title 8, Sections 1270, Fire Prevention, and 6773, Fire Protection and Fire Fighting Equipment, the California Occupational Safety and Health Administration (CalOSHA) has established minimum standards for fire suppression and emergency medical services. The standards include guidelines on the handling of highly combustible materials; fire-hose sizing requirements; restrictions on the use of compressed air; access roads; and the testing, maintenance, and use of all firefighting and emergency medical equipment.

Mitigation Fee Act

Assembly Bill (AB) 1600, the Mitigation Fee Act, requires a local agency establishing, increasing, or imposing an impact fee as a condition of development to identify the purpose of the fee and the use to which the fee is to be put. The agency must also demonstrate a reasonable relationship between the fee and the purpose for which it is charged, and between the fee and the type of development project on which it is to be levied. This act is in the California Government Code, Sections 66000 to 66008, and became enforceable on January 1, 1989.

Local Regulations

City of Rio Vista Municipal Code

Chapter 2.12: Volunteer Fire Department

This chapter establishes a fire department for the City. The fire department is established under the direction of the fire chief and subject to the general administrative direction of the City manager.

Section 13.04.030: Fire Precautions

This chapter states that the City has the right to shut off water from any consumer without notice and to keep it shut off as long as needed for fire prevention efforts.

City of Rio Vista 2001 General Plan

The following policies are from the City's 2001 General Plan's Safety Element and pertain to public services and recreation:

Safety and Noise Element

- **Policy 11.5.A:** The City shall continue to pursue fire prevention programs and standards.
- **Policy 11.5.B:** The City shall strive to maintain its existing service levels. The City shall periodically evaluate service levels as population increases under this General Plan.
- **Policy 11.5.C:** The City shall require that timing of construction of fire stations be phased to be ready to serve development as it occurs.
- **Policy 11.5.D:** The City shall monitor fire department service levels annually concurrent with the City budget process.
- **Policy 11.7.A:** The City shall strive to maintain its quick to response time for emergency calls.
- **Policy 11.7.B:** The City shall continue to provide first response for emergency calls.
- **Policy 11.7.C:** The City shall continue its efforts to toward increasing the ability of Rio Vista Fire Department to provide paramedic services.
- **Policy 11.7.D:** The City shall advocate for ambulance services to be based in Rio Vista.
- **Policy 11.7.E:** The City shall comply with and periodically update the Comprehensive Emergency Management Plan, and ensure that participants are prepared to efficiently carry out assigned functions.

- **Policy 11.7.F:** The City shall ensure that it maintains sufficient resources, contacts, and personnel to provide the community with an effective notification system in the event of an emergency.

Existing Conditions

Rio Vista Fire Department

The City of Rio Vista has one fire station at 350 Main Street, Rio Vista, CA 94571. The Rio Vista Fire Department (RVFD) provides structural fire suppression services, wildland fire suppression services, search and rescue services, and response to hazardous material incidents.

RVFD relies on various agreements with other fire agencies, including a Fire Joint Operations Agreement with the City of Isleton, the Solano County Local Mutual Aid Agreement, and the State Mutual Master Mutual Aid for response to events that exceed County resources

Solano County Office of Emergency Services

The Solano County Office of Emergency Services (OES) offers a variety of Emergency Services Programs to participating jurisdictions. Solano County OES provides a Fire Coordination Program, Flood Management and Mitigation Program, Hazardous Materials Area Plan, Search and Rescue Program, Law Enforcement Coordination, Hazard Mitigation and Risk Management, and Emergency Preparedness. OES supports and assists these fire related responses by providing Incident Command emergency operation center support, the mobile command vehicle, volunteer support, and other resources based on individual requests by the responsible fire agency (Solano County 2025).

Community Emergency Response Team

Community Emergency Response Team (CERT) training in Rio Vista is provided by RVFD through its CERT program. The CERT program educates volunteers about disaster preparedness for the hazards that may impact their area and trains them in basic disaster response skills. CERT offers consistent volunteer training and organization that professional responders can rely on during disaster situations, allowing them to focus on more complex tasks (Rio Vista 2025).

5.14.1.2 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:

FP-1 Result in a substantial adverse physical impact associated with the provisions of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection services.

5.14.1.3 PROPOSED GENERAL PLAN GOALS AND POLICIES

The following goals, policies, and actions from the proposed General Plan are applicable to fire protection services.

Public Facilities and Services Element

- **Goal PFS-1:** To provide high quality and reliable public facilities and services to members of the community.
- **Goal PFS-2:** To provide public facilities and services in a cost-effective manner.
- **Goal PFS-3:** To ensure public facilities and services will be adequate to serve the community through the year 2045.
- **Goal PFS-4:** To work effectively with outside agencies that provide public facilities and services to the Rio Vista community.
  - **Policy PFS-11:** Maintain emergency response and fire prevention services at levels that minimize the risk of injury and loss of property in the community.
  - **Policy PFS-12:** Construct facilities and maintain equipment to provide effective and responsive police and fire protection services throughout the community.
  - **Policy PFS-13:** Establish and maintain mutual aid agreements that provide supplemental aid from partnering law enforcement and fire agencies.

Safety Element

- **Policy SE-6:** Plan for adequate firefighting infrastructure, including water supply and pressure, road and building clearance for firefighting vehicles, and clear and legible street signage throughout the community.
- **Policy SE-7:** Minimize the potential for loss of life and property resulting from wildfire through community outreach and the development review process.

5.14.1.4 ENVIRONMENTAL IMPACTS

Impact 5.14-1: The proposed project could introduce new structures and residents into the RVFD service boundaries, thereby increasing the requirement for fire protection facilities and personnel. [Threshold FP-1]

Buildout under the proposed project is projected to bring 2,467 new housing units, 6,169 new residents, 88 acres of new commercial space, and 54 acres of industrial space to the City of Rio Vista. The increase in population as a result of the proposed project would be expected to generate the typical range of service calls, including fire, emergency medical service, and other incidents. New fire personnel, vehicles, and equipment would be required to provide adequate response times to serve future development. Therefore, the RVFD's respective costs to maintain equipment and facilities and to train and equip personnel would also increase. However, the additional personnel and materials costs would likely be gradual as the population would increase incrementally over time.

Proposed General Plan policies such as Policy PFS-11 would maintain emergency response and fire prevention services at levels that minimize the risk of injury and loss of property in the community. Additionally, Policy PFS-12 would require the construction of facilities and maintain equipment to provide effective and responsive police and fire protection services throughout the community, as well as Policy PFS-13, which would establish and maintain mutual aid agreements that provide supplemental aid from partnering law enforcement and fire agencies. In addition, Policy SE-6 would require the planning for adequate firefighting infrastructure, including water supply and pressure, road and building clearance for firefighting vehicles, and clear and legible street signage throughout the community. In addition, Policy SE-7 would minimize the potential for loss of life and property resulting from wildfire through community outreach and the development review process.

As development is planned and approved in the city, it would be possible to assess the need for additional fire and emergency medical service personnel and equipment and address these needs to ensure that adequate fire service response time standards are maintained. Project-specific details about the future fire facilities are unknown at the preparation of this EIR. Prior to the development of these facilities, an environmental analysis would be conducted to ensure impacts of development are reduced. As future growth in the city occurs, payment of development impact fees, as well as the City's General Fund, would be available to fund the construction of fire facilities, land acquisition, staffing, and equipment. If the construction or expansion of facilities to

accommodate additional personnel or equipment should become necessary, it would be subject to CEQA review, General Plan provisions, Municipal Code regulations, and payment of impact fees.

The adoption of the Proposed General Plan would not in itself create a need for new or altered facilities. All development in the city that results from the implementation of the proposed project would be reviewed by the RVFD for compliance with applicable provisions of the California fire and residential codes and the RVFD's standards. This would ensure that all future development would benefit from the most current fire prevention and safety standards, which would be expected to help keep service demands within the projected year-over-year increases. The City would continue to monitor service needs and construct facilities as needed over time. The impact on fire protection and emergency medical response services would be less than significant.

Level of Significance Before Mitigation: Impact 5.14-1 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.14.1.5 CUMULATIVE IMPACTS

Projected development under the proposed project, combined with existing, planned, proposed, approved, and reasonably foreseeable development within the service areas of RVFD would increase the demand on fire protection and emergency medical services. It is not anticipated that increased mutual aid requirements would result in the need for additional fire protection facilities because mutual aid would be provided via existing facilities, equipment, and personnel at the time of the mutual aid request. In addition, future development projects, including fire protection facilities, would be subject to subsequent project-level CEQA review at such time as an application is submitted.

All new development proposed in the city would be subject to the California Building Code and California Fire Code, which would help to prevent and minimize the occurrences of fire, increasing the ability of the county's fire service providers to provide adequate fire protection services. Subsequent project-level CEQA review of future development, along with compliance with the California Building and Fire Codes, would ensure that cumulative environmental impacts associated with the continued provision of fire protection and emergency medical response services would be less than cumulatively considerable.

5.14.1.6 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Upon implementation of regulatory requirements and standard conditions of approval, all impacts would be less than significant.

5.14.1.7 MITIGATION MEASURES

No mitigation measures are required.

5.14.1.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts would be less than significant.

5.14.2 Police Protection

5.14.2.1 ENVIRONMENTAL SETTING

Regulatory Background

This section summarizes key state and local regulations and programs related to police protection in the City of Rio Vista. There are no federal regulations pertaining to police protection that apply to the proposed project.

State Regulations

Emergency Response/Evacuation Plans

Government Code Section 8607(a) directs Cal OES to prepare a Standard Emergency Management System (SEMS) program, which sets forth measures by which a jurisdiction should handle emergency disasters. The program is intended to provide effective management of multi-agency and multijurisdictional emergencies in California. SEMS consists of five organizational levels, which are activated as necessary: (1) Field Response, (2) Local Government, (3) Operational Area, (4) Regional, and (5) State. Local governments must use SEMS to be eligible for funding of their response-related personnel costs under State disaster assistance programs.

Regional Regulations

Solano County Emergency Operations Plan

The Solano County Emergency Operations Plan (EOP) was prepared by the Solano County Office of Emergency Services which establishes the emergency management organization and assigns functions and tasks consistent with California's SEMS and the

National Incident Management System (NIMS). The intent of the EOP is to provide direction on how to respond to and recover from an emergency.

Local Regulations

City of Rio Vista Municipal Code

Chapter 2.24: Public Safety Oversight Commission

This chapter establishes an advisory board, the Public Safety Oversight Commission, to assist the City Council on public safety related issues. The commission facilitates intra-governmental and intra-community communication and promotes community awareness of public safety related issues. Chapter 2.20 establishes the scope and duties of the public safety oversight commission. The commission will coordinate with the police department and fire department training officers and prepare quarterly training status reports for City council preview.

City of Rio Vista 2001 General Plan

The following policies are from the City's 2001 General Plan's Safety and Noise Element pertain to public services and recreation:

Safety and Noise Element

- **Policy 11.4.A:** The Police Department shall respond to both emergency and routine calls for service in a timely manner consistent with department policy.
- **Policy 11.4.B:** The City shall ensure that the Police Department uses modern technology and provides adequate training to maximize job performance.
- **Policy 11.4.C:** The City shall provide extensive community-based service and education programs designated to prevent crime and emphasize citizen protection and involvement.

Existing Conditions

City of Rio Vista Police Department

Police services are provided from the police station at 50 Poppy House Road. This facility is City-owned and located on City property. The facility, a modular building purchased by the City, has exceeded its anticipated lifespan. Recognizing the need for a replacement, the City anticipates constructing a new station during the term of the 2045 General Plan. The police vehicle fleet is owned by the City. Since 2019, the City has contracted with the Solano County Sheriff's Office to provide law enforcement services.

Solano County Office of Emergency Services

Solano County OES offers a variety of Emergency Services Programs to participating jurisdictions. Solano County OES provides a Fire Coordination Program, Flood Management and Mitigation Program, Hazardous Materials Area Plan, Search and Rescue Program, Law Enforcement Coordination, Hazard Mitigation and Risk Management, and Emergency Preparedness. All law enforcement mutual aid is coordinated through the Sheriff and the Office of Emergency services. Anytime law enforcement mutual aid is needed within or outside the county, a request is made through OES to the state law enforcement branch to bring in mutual aid from other counties or to dispatch Solano teams to other locations in the state (Solano County 2025).

5.14.2.2 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:

PP-1 Result in a substantial adverse physical impact associated with the provisions of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for police protection services.

5.14.2.3 PROPOSED GENERAL PLAN GOALS AND POLICIES

The following goals and policies from the proposed General Plan are applicable to police protection services.

Public Facilities and Services Element

- **Goal PFS-1:** To provide high quality and reliable public facilities and services to members of the community.
- **Goal PFS-2:** To provide public facilities and services in a cost-effective manner.
- **Goal PFS-3:** To ensure public facilities and services will be adequate to serve the community through the year 2045.
- **Goal PFS-4**: To work effectively with outside agencies that provide public facilities and services to the Rio Vista community.
    - **Policy PFS-10:** Ensure that police services are efficient and responsive to meeting the public safety priorities of the community.

- **Policy PFS-13:** Establish and maintain mutual aid agreements that provide supplemental aid from partnering law enforcement and fire agencies.

Safety Element

- **Goal SE-2:** To maintain emergency response services that meet the needs of the community.
  - **Policy SE-5:** Site critical and lifeline facilities, including police and fire stations, hazardous material storage facilities, bridges, and large public assembly halls, outside of hazardous, including flood hazard zones, sea level rise hazard areas, seismic and geologic hazard areas, and adjacent to hazardous materials facilities.

5.14.2.4 ENVIRONMENTAL IMPACT

Impact 5.14-2: The proposed project could introduce new structures and residents into the RVPD boundaries, thereby potentially increasing the requirement for police protection facilities and personnel. [Threshold PP-1]

While no specific development proposals are directly associated with the proposed project, theoretical development would result in an increase in population and thus an increase in demand for police protection services from the RVPD. As discussed under Impact 5.14-1, development under the proposed project could result in an increase of approximately 6,169 new residents in the city. As development occurs, there would be an increase in calls for service which may require additional police personnel. Future development is expected to generate the typical range of service calls. Additional police personnel, vehicles, and equipment would likely be required to provide adequate response times to serve future growth. Therefore, the City's costs to maintain equipment and facilities and to train and equip personnel would also increase. However, the additional personnel and materials costs would likely be gradual because the population would increase incrementally over time.

Proposed policies such as Policy PFS-10 would ensure that police services are efficient and responsive to meeting the public safety priorities of the community. Additionally, Policy PFS-13 would establish and maintain mutual aid agreements that provide supplemental aid from partnering law enforcement and fire agencies. In addition, Policy SE-5 would site critical and lifeline facilities, including police and fire stations, hazardous material storage facilities, bridges, and large public assembly halls, outside of hazardous

areas, including flood hazard zones, sea level rise hazard areas, seismic and geologic hazard areas, and adjacent to hazardous materials facilities.

It would be possible to assess the need for additional police personnel and equipment and address these needs to ensure that the law enforcement response time standards in the city are maintained. The existing police station, a modular building purchased by the City, has exceeded its anticipated lifespan. Recognizing the need for a replacement, the City anticipates constructing a new station during the term of the 2045 General Plan. However, as a matter of information, if and when the construction or expansion of facilities to accommodate additional personnel or equipment could become necessary, CEQA review, proposed General Plan provisions, Municipal Code regulations, and payment of impact fees would all be required. Therefore, the impact on police protection services would be less than significant.

Level of Significance Before Mitigation: Impact 5.14-2 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.14.2.5 CUMULATIVE IMPACTS

Cumulative increases in development in the city would require increased police protection services to serve new development. The increase in demand for police protection services from implementation of cumulative projects would have the potential to result in the need to construct or expand existing police facilities, which would have the potential to create an adverse impact on the environment. While the majority of cumulative projects require discretionary actions and would be required to demonstrate compliance with CEQA prior to project approval, they would incrementally increase the need for law enforcement services. The proposed project would contribute less-than-significant cumulative impacts.

5.14.2.6 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Upon implementation of regulatory requirements and standard conditions of approval, all impacts would be less than significant.

5.14.2.7 MITIGATION MEASURES

No mitigation measures are required.

5.14.2.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts would be less than significant.

5.14.3 School Services

5.14.3.1 ENVIRONMENTAL SETTING

Regulatory Background

This section summarizes key state and local regulations and programs related to school services in the City of Rio Vista. There are no federal regulations pertaining to school services that apply to the proposed project.

State Regulations

Development Impact Fees/SB 50

Proposition 1A, the Kindergarten–University Public Education Facilities Bond Act of 1998, or Senate Bill (SB) 50, was approved by the voters in November 1998. SB 50 provides a comprehensive school facilities financing and reform program and enables a statewide bond issue to be placed on the ballot. Under the provisions of SB 50, school districts are authorized to collect fees to offset the costs associated with increasing school capacity as a result of development and related population increases. The funding goes to acquiring school sites, constructing new school facilities, and modernizing existing school facilities. SB 50 establishes a process for determining the amount of fees developers would be charged to mitigate the impact of development on school districts from increased enrollment. According to Section 65996 of the California Government Code, development fees authorized by SB 50 are deemed “full and complete school facilities mitigation.”

Under this legislation, there are three levels of developer fees that may be imposed upon new development by the governing school district. Level I fees are assessed based upon the proposed square footage of residential, commercial/industrial, and/or parking structure uses. Level II fees require the developer to provide one-half of the costs of accommodating students in new schools, and the State provides the remaining half. To qualify for Level II fees, the governing board of the school district must adopt a School Facilities Needs Analysis and meet other prerequisites in accordance with Section 65995.6 of the California Government Code. Level III fees apply if the State runs out of bond funds, allowing the governing school district to impose 100 percent of the cost of school facility or mitigation on the developer, minus any local dedicated school monies.

Regional Regulations

Solano County Ordinance Code

The purpose of the County's School Facilities Dedication Ordinance is to provide a method for financing interim school facilities necessitated by new residential developments causing conditions of overcrowding. The ordinance states that in an attendance area that has been considered overcrowded according to Article IV, the proposed residential site can receive conditional approval by obtaining a building permit which shall dedicate land, pay fees in lieu thereof, or do a combination of both, for classroom and related facilities for elementary and/or high schools, including all mandated educational programs.

Local

City of Rio Vista Municipal Code

Chapter 3.32: School Mitigation Fees

This chapter aims to implement the city's general plan for school facilities and mitigate the impacts of new residential development on the River Delta Unified School District. This chapter authorizes impact fees to be assessed on owners of residential property in the district to fund the construction and installation of public school facilities and acquire land to address the needs of additional residents. The goal is to provide adequate facilities for residents and mitigate the impacts of new residential development on the school district.

Section 16.36.030 of the Municipal Code: School Site Dedication

This section grants the condition of approval to develop or complete the development of one or more subdivisions within a school district. Chapter 16.36.030 outlines the procedure, payments and exceptions associated with a school facilities dedication.

City of Rio Vista 2001 General Plan

The following policies are from the City's 2001 General Plan's Public Facilities and Services Element pertain to public services and recreation:

Public Facilities and Services Element

- **Policy 12.2.E:** The City shall continue to cooperate with the River Delta Unified School District and Solano County in the provision of high-quality library services.

- **Policy 12.3.A:** The City shall work closely with the River Delta Unified School District to obtain adequate funding for new school facilities. Where legally feasible, the City may require new development to participate in the provision of school facilities in a timely manner.
- **Policy 12.3.C:** The City shall require evidence that adequate school facilities are committed to being available in a timely manner before approval will be granted to new residential development.
- **Policy 12.3.D:** School facilities shall be provided in response to needs identified by both the district and the City.
- **Policy 12.3.E:** The City and the River Delta Unified School District will prepare a joint-use study for each school facility to determine the feasibility of joint-use facilities. If determined to be feasible, a joint-use agreement will be pursued to maximize the public use of facilities, minimize duplication of services provided, and facilitate shared financial and operational responsibilities.
- **Policy 12.3.F:** The City and the school districts shall develop criteria for the designation of school sites and opportunities for reducing land and development costs while developing schools as neighborhood resources. The City shall make every attempt to ensure that the locations, design, and development of new school sites are consistent with this General Plan and neighborhood concerns.
- **Policy 12.3.G:** In order to be consistent with other City policies and the Rio Vista Principles (Preserve the small-town character). The City's preference is to maintain small schools at a similar size of schools to a point that is not consistent with today's quality of life, Rio Vista schools should be smaller than the typical "standard" in larger suburban districts. The number of sites should be increased after a particular size is reached, rather than further increases to the size of facilities.
- **Policy 12.3.H:** The City shall require that new and expanded facilities funded by development impact fees be constructed in the service area from which fees were raised, to ensure that adequate facilities are located where the demand is created. Fees paid by residents of new homes in Rio Vista shall be used to provide school facilities in Rio Vista.

Existing Conditions

Public education (Preschool-12) in Rio Vista is provided by the River Delta Unified School District (RDUSD). The RDUSD extends to three counties (Solano, Yolo, and Sacramento) and as of 2022-23 served approximately 1,750 students in and surrounding the communities of Clarksburg, Hood, Locke, Walnut Grove, Isleton, Birds

Landing/Collinsville, Courtland, and Rio Vista. There are three schools in Rio Vista: D.H. White Elementary School (transitional kindergarten–6th grade); Riverview Middle School (7–8); and Rio Vista High School (9–12). Students from a fourth school, Isleton Elementary School (Preschool–6th), are promoted into Riverview Middle School.

D.H. White Elementary is located on an 11-acre site at 500 Elm Way, Rio Vista. The 2022-23 enrollment at D.H. White was approximately 430 students, and the school had a capacity of 450 students. As of 2023, there were approximately 3 acres of undeveloped land at this site.

Riverview Middle School is located on a 7-acre site at 525 South 2nd Street, Rio Vista. The 2022-23 enrollment at Riverview Middle School was 165 students, and the school had a capacity of about 200 students. RDUSD has stated this site has no area for building expansion.

Rio Vista High School is located on a 26-acre site at 410 South 4th Street, Rio Vista. The 2022-23 enrollment at Rio Vista High School was 367, and the school has capacity for approximately 475 students. RDUSD has stated this site has limited capacity for expansion.

5.14.3.2 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:

SS-1 Result in a substantial adverse physical impact associated with the provisions of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for school services.

5.14.3.3 PROPOSED GENERAL PLAN GOALS AND POLICIES

The following goals and policies from the proposed General Plan are applicable to school services.

Public Facilities and Services Element

- **Goal PFS-1:** To provide high quality and reliable public facilities and services to members of the community.
- **Goal PFS-2:** To provide public facilities and services in a cost-effective manner.

- **Goal PFS-3:** To ensure public facilities and services will be adequate to serve the community through the year 2045.
- **Goal PFS-4**: To work effectively with outside agencies that provide public facilities and services to the Rio Vista community.
  - **Policy PFS-15:** The City shall support the efforts of the River Delta Unified School District to obtain adequate funding for new school facilities.
  - **Policy PFS-16:** The City shall encourage joint-use of facilities and coordinated park and recreation programs with the River Delta Unified School District.
  - **Policy PFS-17:** The City shall support the River Delta Unified School District's efforts to identify appropriate locations for future schools.

Economic Development Element

- **Policy ED-1:** Encourage and support efforts of the River Delta Unified School District to increase investment in both vocational and academic school programs and facilities.

5.14.3.4 ENVIRONMENTAL IMPACTS

Impact 5.14-3: Development under the proposed project could generate new students who would impact the school enrollment capacities of area schools and result in the need for new and/or expanded school facilities, the construction of which could result in environmental impacts. [Threshold SS-1]

A significant impact would result if, in order for the school districts to adequately serve the city's needs, increased school enrollment would require the construction of new facilities or the expansion of existing schools, the construction or operation of which would cause significant environmental impacts. New development under the proposed project would cause an increase in the student population over the next 20 years. The projected increase in students across the city would likely be gradual for the duration of the proposed project as more housing units are incrementally added.

As new development occurs, new or expanded school facilities may be needed to support the associated population growth. Project-specific details about future school facilities, if needed, are unknown at this time. Prior to the development of these facilities, an environmental analysis would be conducted to ensure impacts of development are reduced. The adoption of the proposed General Plan would not in itself create a need for new or altered facilities.

To ensure that school capacities are not exceeded from new development, the proposed Public Facilities and Services Element includes Policy PFS-15, which states that the City of Rio Vista shall support the efforts of the River Delta Unified School District to obtain adequate funding for new school facilities. Additionally, existing funding mechanisms would lessen potential impacts related to an increase in the student population. As detailed in Section 3.36.020 of the City's Municipal Code, all public facilities in the city are funded through the payment of development fees pursuant to California Government Code Section 66000. These fees are required to be paid by future development prior to issuance of building permits and would be used to offset the impact of the number of new students generated by the anticipated population increase under the proposed project. Ultimately, the provision of schools is the responsibility of the school district. SB 50 provides that the statutory fees found in the Government and Education Codes are the exclusive means of considering and mitigating school impacts. Imposition of the statutory fees constitutes full and complete mitigation (Government Code Section 65995[b]). Such mitigation measures include fees, charges, or requirements levied against construction, pursuant to Section 17620 of the Education Code.

General Plan Policies that aim to reduce the impacts related to school facilities such as Policy PFS-16: The City shall encourage joint-use of facilities and coordinated park and recreation programs with the River Delta Unified School District. In addition, Policy PFS-17 requires that the City provide support for the River Delta Unified School District's efforts to identify appropriate locations for future schools, and Policy ED-1 encourages and supports the efforts of the River Delta Unified School District to increase investment in both vocational and academic school programs and facilities.

The River Delta Unified School District requires developers of commercial and residential developments to pay developer fees. Pursuant to Section 65996 of the Government Code, payment of school fees is deemed to provide full and complete school facilities mitigation. If additional and/or expanded facilities are needed, subsequent environmental review for each development project would be required. Furthermore, a school district and a development project have the option of entering into various alternate mitigation agreements to ensure the timely construction of school facilities to house students from new residential development. The primary financing mechanism authorized in these mitigation agreements is the formation of a community facilities district, pursuant to the Mello-Roos Community District Act of 1982. In lieu of an alternate mitigation agreement, State-mandated school facilities fees, which help maintain adequate school facilities and levels of service, may also reduce potential impacts, as described above.

The existing regulatory setting, including funding mechanisms, would ensure that potential impacts to school facilities and services with development under the proposed project would be less than significant. Furthermore, the proposed project includes goals and policies to maintain adequate levels of service for schools. Therefore, the impacts would be less than significant.

Level of Significance Before Mitigation: Impact 5.14-3 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.14.3.5 CUMULATIVE IMPACTS

Implementation of the proposed project is expected to result in population growth that would increase student enrollment in the City's school district. Current state law requires that the environmental impact of new development on grade school facilities is considered fully mitigated through the payment of required development impact fees. All new development associated with the proposed project would be required to pay the applicable development impact fees. Furthermore, any significant expansion of school facilities or development of new school facilities would be subject to the appropriate CEQA environmental review, which would identify any site-specific impacts and provide mitigation to reduce those impacts. Therefore, cumulative impacts on school facilities are considered less than cumulatively considerable.

5.14.3.6 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Upon implementation of regulatory requirements and standard conditions of approval, all impacts would be less than significant.

5.14.3.7 MITIGATION MEASURES

No mitigation measures are required.

5.14.3.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts would be less than significant.

5.14.4 Library Services

This section describes current conditions and potential impacts of the proposed General Plan Update with regard to library services in Rio Vista.

5.14.4.1 ENVIRONMENTAL SETTING

Regulatory Background

There are no federal or state regulations relating to library services.

Local Regulations

City of Rio Vista 2001 General Plan

The following policies from the City's 2001 General Plan's Public Facilities and Services Element pertain to public services and recreation:

Public Facilities and Services Element

- **Policy 12.1.A:** The City shall focus City administrative offices, public safety headquarters, main library branch, and senior center in downtown by providing expansion as needed, public access, and a "quality civic architectural image."
- **Policy 12.1.B:** The City shall focus cluster and connect branch or secondary community facilities in neighborhood activity centers, including parks, libraries, and community centers.
- **Policy 12.1.D:** The City shall develop branch community facilities as necessary, including library, parks, schools, recreation centers and public meeting placers, to maintain high quality services at the neighborhood level.
- **Policy 12.2.A:** The City shall continue to work with the Solano County library system to provide a variety of library programs that serve library users of all age groups.
- **Policy 12.2.B:** The City shall maintain the main library in downtown as a key public service.
- **Policy 12.2.C:** The City shall work with the Solano County library system to provide branch libraries in order to service population increments of ±10,000.
- **Policy 12.2.D:** The City shall designate public and quasi-public land uses in clusters and within neighborhood centers, so that the use of schools, parks, open space, libraries, childcare, and community activity focus.
- **Policy 12.2.E:** The City shall continue to cooperate with the River Delta Unified School District and Solano County in the provision of high-quality library services.

Existing Conditions

The Rio Vista library is in downtown Rio Vista. The Rio Vista Library is a City-owned building located at 44 South Second Street in the Downtown area. Library services in the City of Rio Vista have been provided by the Solano County Library since the 1920s.

The Solano County Library serves Dixon, Fairfield, Rio Vista, Suisan City, Vacaville, Vallejo. The city of Benecia has its own library but partners with the Solano County Library for different services. Library services are provided under an annual agreement between the City and the Solano County Library, and these services are provided subject to the same policies, procedures, rules, and regulations that govern all County Library branches. The Solano County Library Facilities Master Plan was updated in 2021 and provides direction on how the library can best serve Rio Vista.

5.14.4.2 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:

LS-1 Result in a substantial adverse physical impact associated with the provisions of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for library services.

5.14.4.3 PROPOSED GENERAL PLAN GOALS AND POLICIES

The following goals and policies from the proposed General Plan are applicable to library services.

Public Facilities and Services Element

- **Goal PFS-1:** To provide high quality and reliable public facilities and services to members of the community.
- **Goal PFS-2:** To provide public facilities and services in a cost-effective manner.
- **Goal PFS-3:** To ensure public facilities and services will be adequate to serve the community through the year 2045.
- **Goal PFS-4**: To work effectively with outside agencies that provide public facilities and services to the Rio Vista community.
  - **Policy PF-6:** The City shall ensure that new growth pays for the facilities and services it requires without an additional burden to existing residents. The City

shall ensure appropriate funding is provided to construct, operate, and maintain capital facilities.

- **Policy PF-7:** The Capital Improvement Program (CIP) shall include expansion of facilities to meet increasing demands as the City grows.

5.14.4.4 ENVIRONMENTAL IMPACTS

Impact 5.14-4: Development under the proposed project could generate new residents in the city and result in the need for new and/or expanded library facilities, the construction of which could result in environmental impacts. [Threshold LS-1]

Projected development under the proposed project would result in the potential for increased demand for library services within the city to the extent that expansion and construction of new facilities could be required. As described above, the buildout projection for the proposed project includes approximately 6,169 new residents in the city. To meet the future demand for library services, the Public Facilities and Services Element would include Policy 12.2.C, which states that the City shall work with the Solano County library system to provide branch libraries in order to service population increments of ±10,000. Additionally, Policy 12.2.E states that the City shall continue to cooperate with the River Delta Unified School District and Solano County in the provision of high-quality library services.

Future development would also generate new tax revenues and funding sources for the Solano County Library System consisting of property taxes, State assistance, and revenue from fines, fees, and other miscellaneous revenue. Furthermore, development or expansion of libraries would be subject to the City's policies that protect environmental resources, including environmental review and impact mitigation per CEQA. Impacts associated with the development of new libraries are therefore determined to be less than significant.

Level of Significance Before Mitigation: Impact 5.14-4 would be less than significant.

Mitigation Measures

No mitigation measures would be required.

5.14.4.5 CUMULATIVE IMPACTS

Population in both the EIR Study Area and incorporated parts of the county is expected to increase over time, therefore increasing the use of the Solano County Library System services and facilities; however, the proposed project policies and actions described above would ensure that library impacts are mitigated.

In addition to an impending requirement for library impact fees, future development would generate new tax revenues, and funding sources for the Solano County Library System would consist of property taxes, state assistance, and revenue from fines, fees, and other miscellaneous revenue. Furthermore, development or expansion of libraries would be subject to the City's policies that protect environmental resources including environmental review and impact mitigation per CEQA. Cumulative impacts associated with the development of new libraries are therefore determined to be less than cumulatively significant.

5.14.4.6 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Upon implementation of regulatory requirements and standard conditions of approval, all impacts would be less than significant.

5.14.4.7 MITIGATION MEASURES

No mitigation measures are needed.

5.14.4.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts would be less than significant.

5.14.5 Parks and Recreation

5.14.5.1 ENVIRONMENTAL SETTING

Regulatory Background

This section summarizes key state and local regulations and programs related to public services and recreation in the City of Rio Vista. There are no federal regulations pertaining to public services and recreation that apply to the proposed project.

State Regulations

Quimby Act

The Quimby Act, also known as Government Code Section 66477, was established in 1965 and provides provisions in the State Subdivision Map Act for the dedication of parkland and/or payment of in-lieu fees as a condition of approval of certain types of residential projects. Previously, a city or county could only use these fees to provide parks that served the developer's proposed subdivision. However, AB 1359, signed in 2013, allows cities and counties to use developer-paid Quimby Act fees to provide parks in neighborhoods other than the one in which the developer's subdivision is located. Overall, AB 1359 provides cities and counties with opportunities to improve parks and create new parks in areas that would not have benefited before. It also allows a city or county to enter into a joint/shared use agreement with one or more public districts to provide additional park and recreational access.

Mello-Roos Community Facilities Act

This law allows any county, city, special district, school district, or joint powers authority to establish a Mello-Roos Community Facilities District (CFD) that can finance parks, cultural facilities, libraries, schools, fire and police protection, streets, sewer systems, and other basic infrastructure. By law, the CFD is also entitled to recover expenses needed to form the CFD and administer the annual special taxes and bonded debt (California Government Code Sections 53311 et seq.).

Mitigation Fee Act

The Mitigation Fee Act allows counties and cities to establish fees that will be imposed on development projects to mitigate the impact on the jurisdiction's ability to provide specified public facilities to serve proposed development projects. In order to comply with the Mitigation Fee Act, a jurisdiction must follow four requirements: 1) Make certain determinations regarding the purpose and use of a fee and establish a nexus or connection between a development project or class of project and the public improvement being financed with the fee; 2) Segregate fee revenue from the general fund in order to avoid co-mingling of capital facilities fees and general funds; 3) For fees that have been in the possession of the jurisdiction for five years or more and for which the dollars have not been spent or committed to a project, the jurisdiction must make findings each fiscal year describing the continuing need for the money; and 4) Refund any fees with interest for which the findings noted above cannot be made.

Regional Regulation

Delta Plan

The Delta Plan, adopted by the Delta Stewardship Council in 2013 and amended in 2019, is a comprehensive long-term management plan for the Sacramento-San Joaquin River Delta. The Delta Plan includes rules and recommendations that support the State's goals for the Delta to: (1) improve water supply; (2) protect and restore a vibrant and healthy Delta ecosystem; and (3) preserve, protect, and enhance the unique agricultural, cultural, and recreational characteristic of the Delta. The 14 regulatory policies in the Delta Plan are enforceable through regulatory authority in the Delta Reform Act, enacted as part of SB-X7 (DSC 2019).

Local

City of Rio Vista Municipal Code

Chapter 12.16: Parks and Recreation Areas

This chapter provides regulations for parks and recreation areas within the City to provide enjoyment to the public while protecting the public health, safety and welfare, the aesthetic appearance of the City, and simultaneously preserving the constitutional interests of transient individuals under state and federal laws.

City of Rio Parks Master Plan

In February 2007, the City of Rio Vista adopted a Parks Master Plan that provides a thorough inventory of the District's parks and facilities and a summary of recreation programming to meet the needs of the projected build-out population. The General Plan established that for every 1,000 residents there needs to be 3 acres of neighborhood acres, 2 acres of community parks, and 1 mile of trail or 3 acres of trail corridor (25 feet wide).

City of Rio Vista 2001 General Plan

The following policies are from the City's 2001 General Plan's Community Character and Design Element, and Open Space and Recreation Element and pertain to public services and recreation:

Community Character and Design Element

- **Policy 5.3.A:** The City shall require the development of trail connections between public parks and open space to the greatest extent feasible.

- **Policy 5.4.A:** The City shall require development projects to incorporate native habitat, trails, and parks into the site design to the greatest extent feasible.
- **Policy 5.7.A:** The City shall incorporate community landmarks and focal points into community and neighborhood parks, linear pathway intersections, and commercial areas in the Existing City and Neighborhood Core Districts.

Open Space and Recreation Element

- **Policy 9.1.A:** As development and redevelopment occur, the City shall require public access to the Sacramento River from the nearest public street and walkways.
- **Policy 9.1.B:** A pedestrian boardwalk shall be provided along the waterfront that links Main Street to the Rio Vista Bridge.
- **Policy 9.1.C:** The City shall enhance the Sacramento River and its waterfront as a scenic resource consistent with water-oriented recreation.
- **Policy 9.2.A:** An integrated open space networks within the City shall be developed that links open space and natural habitat resources, recreation areas, schools, downtown, the waterfront, and residential neighborhoods.
- **Policy 9.2.B:** An interconnecting system of open space corridors shall be provided that incorporates trails and pedestrian paths.
- **Policy 9.3.A:** The City shall acquire land for, and provide trails and paths to and through, scenic areas, natural habitats, open spaces, and existing and proposed urban areas.
- **Policy 9.5.A:** The City shall develop recreational programs and events for all ages, interests, and activities levels.
- **Policy 9.5.B:** The City shall continue to develop and support youth recreation and programs.
- **Policy 9.5.C:** The City shall continue to develop and support senior recreational opportunities.
- **Policy 9.5.D:** The City shall continue to develop and support recreational opportunities for adults, including facilities and programs that are handicapped accessible to the extent feasible.
- **Policy 9.6.A:** All regulation sports and facilities that regularly attract from outside the immediate neighborhood shall be located in community parks.
- **Policy 9.6.B:** The City shall site parks based on maximum accessibility, proper topography, and safety for park users.
- **Policy 9.6.C:** Designs of parks, trails, and open spaces shall consider ease of maintenance, energy efficiency, and ongoing maintenance and operation costs.

- **Policy 9.7.A:** The City shall provide sufficient acreage of parks needed to meet the active and passive recreation demands of the community.
- **Policy 9.7.B:** The City shall correct deficiencies and upgrade existing parks and recreation facilities to function effectively and serve more residents.
- **Policy 9.7.C:** Developers of housing shall dedicate parkland or pay in-lieu fees in accordance with the park standards of this element.
- **Policy 9.7.D:** New housing developments shall provide adequate neighborhood park acreage, as specified in the City's adopted standards, within or near proposed projects.
- **Policy 9.7.E:** At least one neighborhood park site within large development projects shall be greater than 4 acres.
- **Policy 9.7.F:** The City shall work with the appropriate public agencies to identify and evaluate public lands for potential park acquisition.
- **Policy 9.7.G:** The City's minimum standard for required parkland per 1,000 residents shall be as shown in Table 9-4.
- **Policy 9.7.H:** Parks shall be developed in accordance with the siting criteria in the Open Space and Recreation element.
- **Policy 9.8.A:** Each Park shall be given a unique identity and character through differentiated plantings, play structures, and terrain.
- **Policy 9.8.B:** Parks shall be designed to promote community focal points and ease of access.
- **Policy 9.8.C:** Neighborhood parks shall be located in secure areas within subdivisions.
- **Policy 9.8.D:** Parks shall be sited so that street frontage or other open space occurs on at least three sides.

Existing Conditions

As of 2025, there were eight neighborhood and pocket parks in the city, as described below:

- **Blackwelder Park** (1.5 acres) is located directly behind Egbert Field and provides passive park space.
- **Buena Vista (Memorial) Park** (2.0 acres) is located on Main Street near Highway 12 and is a historic Chinese and Japanese cemetery with flush-mounted graves in the site.
- **Crescent Park** (0.2 acre) is located on North Crescent Drive near downtown, and provides a neighborhood tot lot, half-court basketball, and playground with an open turf area.

- **Drouin Park** (1.1 acres) is located on Drouin Drive and serves a neighborhood developed in the 1970s. The park has a turf field and playground equipment.
- **Homecoming Park** (1.0 acre) is in the Homecoming Subdivision off Airport Road. The park has a grassy area, a neighborhood tot lot, picnic tables, and a barbecue area.
- **Liberty Park** (1.74 acre) is on McCormack Road in the Liberty subdivision. The park includes two dog parks, two playgrounds, picnic tables, restroom, and a soccer field.
- **Sierra Park** (0.1 acre) is at the intersection of Main Street and Sierra Drive. This park is a passive, landscaped area with no active play equipment.
- **Val de Flores Park** (3.2 acres) is adjacent to D.H. White Elementary School and includes soccer fields, open turf, picnic tables, dog park, and the city's skate park.

Park and recreation related community facilities include traditional parks, river-oriented amenities, and facilities that support social and cultural activities.

- **Bruning (City) Park** (1.4 acres) is on Montezuma and Third Streets, adjacent to the downtown area. This park contains the City's public swimming pool and restrooms and serves as a community gathering place for various events.
- **Egbert Field** (5.0 acres) is on St. Francis Way and contains one youth baseball and one adult/Babe Ruth baseball or softball field, restrooms, bleachers, and a concession stand. The baseball/softball fields are also used for youth soccer.
- **Fishing Access and Pier** (0.4 acre) is adjacent to Highway 12 on the Sacramento River and includes a lighted fishing pier and fish cleaning facilities.
- **Main Street Public Dock and Boat Launch** (3.5 acres) is south of Main Street, adjacent to city hall. Facilities provide boat launching, picnicking, and recreational fishing. Improvements include a two-lane boat launch ramp, boater parking area, picnic tables, restrooms, dock facility with four moorings, and drinking fountains.
- **Rio Vista Promenade** (2.0 acres) provides a public green space with trails, artwork, landscaping, and benches that extends from close to the Rio Vista bridge to just north of the intersection of Logan and North Front Streets.
- **Rio Vista Museum** (0.2 acre) is on North Main Street and houses the City's historic collections.
- **Senior/Community Center** (0.6 acre) is on City property adjacent to city hall and is operated by Citizens for Seniors. The center provides a lunch program and recreational activities for seniors. Non-profits also provide recreational programs to the City's youth.

5.14.5.2 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:

R-1 Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

R-2 Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

5.14.5.3 PROPOSED GENERAL PLAN GOALS AND POLICIES

The following goals and policies from the proposed General Plan are applicable to parks and recreation services.

Parks and Recreation Element

- **Goal PR-1:** To provide well designed parks that are accessible, attractive, meet recreational needs of the community and enhance neighborhood identity and character.
- **Goal PR-2:** To provide a variety of leisure, recreational, and cultural opportunities for Rio Vista residents and visitors of all ages.
- **Goal PR-3:** To provide public access and public facilities along the Sacramento River to the maximum extent feasible.
- **Goal PR-4:** To develop a comprehensive and unified trails and pathways system for bicycle and pedestrian travel that links community activity centers.
- **Goal PR-5:** To maintain and improve park and recreation facilities in Rio Vista to provide the maximum possible benefit to the community.
  - **Policy PR-1:** The City shall require sufficient park acreage to meet the active and passive recreation demands of the community. The City's minimum standards for active and passive parkland per 1,000 residents are:
    - Neighborhood Park: 3 acres per 1,000 residents
    - Community Park/Community Facility: 2 acres per 1,000 residents

The City shall exercise discretion in the allocation of land to neighborhood and regional parks to best serve the recreational needs of the community.

- **Policy PR-2:** The City shall apply the criteria and guidelines for the design of parks, recreation and trail facilities as established in the Parks Master Plan.
- **Policy PR-3:** Within the review of land use entitlements, determine the timing for construction of project improvements, including parklands, trails, and open space areas. Developer obligations for dedication of land/payment of in lieu fees, improvements to be constructed and required park improvement fees shall be determined during project entitlement reviews.
- **Policy PR-4.** Development projects shall provide for the maintenance of future parks and recreation facilities within the project's boundaries. Maintenance programs may include homeowner's associations (private facilities), formation of maintenance assessment districts or other mechanisms acceptable to the City.
- **Policy PR-10:** All new development shall provide direct or alternative linkages to existing and planned open space systems where feasible. Designated trails or corridors in new development shall be constructed by the developer and offered for dedication to the City.
- **Policy PR-12:** The City's shall either construct or, in the case of development projects, require project developers to construct pedestrian and bicycle trails as identified on Figure 6-2.

5.14.5.4 ENVIRONMENTAL IMPACTS

Impact 5.14-5: The proposed project could generate additional residents that would increase the use of existing park and recreational facilities but would not require the immediate provision of new and/or expanded recreational facilities. [Thresholds R-1 and R-2]

Each jurisdiction determines the appropriate park standard based on the guidance provided by Section 666477 of the California Government Code, commonly referred to as the Quimby Act. The City's park standard is five acres per 1,000 residents (three acres neighborhood park and 2 acres community park).

As discussed in Section 5.14.5.1, *Environmental Setting*, a total of 24 acres of parks and recreation land are available to residents of the city. The City also owns the 18.5-acre Liberty Community Park site and is currently seeking funding to construct this park. Planned or approved projects include designated park lands to meet their park demands.

Additionally, the Trilogy and Liberty active adult/gated communities provide significant private recreational facilities that serve the neighborhood park needs of those residents. With an existing population of 10,553 residents, the parkland requirement at five acres per 1,000 residents would be approximately 53 acres, which can be met through existing and planned park sites plus additional opportunity sites on City-owned lands. With a buildout population of 18,592 residents, the City would need 93 acres of parkland. It is estimated that buildout of the proposed project would result in 68 acres of land designated for parks and recreation, and the City would have a surplus of 17 acres of parkland.

General Plan policies such as Policy PR-1 require the City to have sufficient park acreage to meet the active and passive recreation demands of the community. The City's minimum standards for active and passive parkland per 1,000 residents, for neighborhood parks it would be 3 acres per 1,000 residents, and for community parks and facilities it would be 2 acres per 1,000 residents. Additionally, Policy PR-2 would require the City to apply the criteria and guidelines for the design of parks, recreation, and trail facilities as established in the Parks Master Plan. In addition, Policy PR-3 requires that the City, during land-use entitlement reviews, determine the timing for construction of project improvements for parklands, trails, and open space areas; define developer obligations for land dedication or in-lieu fees and on-site improvements; and set the applicable park-improvement fees. Policy PR-4 requires that development projects provide for the maintenance of future parks and recreation facilities within the project's boundaries. Policy PR-10 requires that all new development provide direct or alternative linkages to existing and planned open space systems where feasible. Designated trails or corridors in new development shall be constructed by the developer and offered for dedication to the City, and Policy PR-12 states that the City shall either construct or, in the case of development projects, require project developers to construct pedestrian and bicycle trails. These General Plan policies would help mitigate any impacts related to recreation facilities to less than significant.

Moreover, new development would be required to pay development impact fees and/or dedicate parkland or pay an in-lieu fee. The availability of new facilities would prevent the accelerated physical deterioration of existing facilities. The estimated timing or location of new facilities and the exact nature of these facilities are not known, so project-specific environmental impacts that would occur from their construction and operation cannot be determined at this time. However, depending on the type, size, and location of new parks, the construction of new parks would be subject to environmental review and the mitigating policies and mitigation measures described in this EIR to ensure the impacts from the construction would be less than significant. The construction of project-specific parks would require permitting and review in accordance with City standards, which would

ensure that any environmental impacts are disclosed and mitigated to the extent possible. This EIR is a programmatic document and does not evaluate the environmental impacts of future project-specific development. Therefore, the impact is considered less than significant.

Level of Significance Before Mitigation: Impact 5.14-5 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.14.5.5 CUMULATIVE IMPACTS

Future development, along with other existing, planned, proposed, approved, and reasonably foreseeable development would increase the use of existing parks and would contribute to the cumulative demand for local parks and recreational facilities and services in the city. As discussed under Impact 5.14-5, existing local parks and recreational facilities would be able to meet the service standard for the projected growth in the county under the proposed project. Future development in the city would be required to provide adequate park facilities to meet the demand of proposed development within the city. Environmental impacts resulting from the provision of park and recreational facilities would be identified by subsequent project-level environmental review in conjunction with individual development projects.

Individual development projects would also be subject to development impact fees to fund the provision of physical parkland, community recreation, and other public purposes. These fees and policy provisions would ensure that they would adequately provide for park and recreation needs for residents, while environmental review of new development would mitigate any environmental impacts of park and recreation facilities. Therefore, the proposed project would have a less than cumulatively considerable impact on parks and recreation services.

5.14.5.6 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Upon implementation of regulatory requirements and standard conditions of approval, all impacts would be less than significant.

5.14.5.7 MITIGATION MEASURES

No mitigation measures are required.

5.14.5.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts would be less than significant.

5.14.6 References

Delta Stewardship Council (DSC). 2019, January. Delta Plan. https://deltacouncil.ca.gov/pdf/delta-plan/2019-01-02-amended-executive-summary.pdf.

Rio Vista, City of. 2025, July 23 (accessed). Community Emergency Response Team. https://www.riovistacity.com/fire/page/community-emergency-response-team.

Solano County. 2025, July 23 (accessed). Solano County Office of Emergency Services: About Us. https://www.solanocounty.gov/government/office-emergency-services/about-us.

5.15 TRANSPORTATION

This section of the DEIR evaluates the potential for implementation of the proposed project to result in transportation and traffic impacts in the City of Rio Vista.

5.15.1 Environmental Setting

Terminology

The following are definitions for terms used throughout this section:

- **Level of Service (LOS).** Roadway capacity is generally limited by the ability to move vehicles through intersections. LOS is a standard performance measurement to describe the operating characteristics of a street system in terms of the level of congestion or the delay experienced by motorists. Service levels range from A through F, that is, traffic conditions from best (uncongested, free-flowing conditions) to worst (total breakdown with stop-and-go operation).
- **Vehicle Miles Traveled.** VMT measures the number of trips and the lengths of those trips for the total number of miles that vehicles will travel on a roadway system. It is used to better assess traffic impacts on greenhouse gas emissions, air quality, and energy. The number of miles of vehicle travel is an indicator of the travel levels on the roadway system by motor vehicles.
- **Total VMT.** Total VMT represents all VMT generated in the city on a typical weekday.
- **VMT per Service Population.** Service population (SP) counts residents and employees. VMT/SP measures the transportation "efficiency" of a project or plan and is defined as VMT generated on a typical weekday per person who lives and/or works in the city.

5.15.1.1 REGULATORY BACKGROUND

Federal

Americans With Disabilities Act

The Americans with Disabilities Act (ADA) of 1990 provides comprehensive rights and protections to individuals with disabilities. The goal of the ADA is to assure equality of opportunity, full participation, independent living, and economic self-sufficiency. To implement this goal, the United States Access Board has created accessibility guidelines for public rights-of-way. The guidelines address various issues, including roadway design practices, slope and terrain issues, pedestrian access to streets, sidewalks, curb ramps,

street furnishings, pedestrian signals, parking, and other components of public rights-of-way.

State

Assembly Bill 1358 (California Complete Streets Act)

Assembly Bill (AB) 1358, or the California Complete Streets Act, was signed into law on September 30, 2008. Since January 1, 2011, AB 1358 has required circulation element updates to address the transportation system from a multimodal perspective. The act states that streets, roads, and highways must "meet the needs of all users in a manner suitable to the rural, suburban, or urban context of the General Plan." The act requires a circulation element to plan for all modes of transportation where appropriate, including walking, biking, car travel, and transit. In addition, the act requires circulation elements to consider the multiple users of the transportation system, including children, adults, seniors, and the disabled.

Assembly Bill 32 and Senate Bill 32

AB 32, or the Global Warming Solutions Act, was signed into law on September 27, 2006. AB 32 established a comprehensive program to reduce greenhouse gas (GHG) emissions to combat climate change. This Bill required the California Air Resources Board (CARB) to develop a plan to reduce GHG emissions to 1990 levels by 2020. The AB 32 Scoping Plan contains the main strategies identified by CARB to reduce GHG emissions, including direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, market-based mechanisms, and an AB 32 program implementation regulation for funding. In 2016, the State Legislature passed Senate Bill (SB) 32, which codified a 2030 GHG emissions reduction target of 40 percent below 1990 levels. CARB recognizes cities and counties as "essential partners" in reducing GHG emissions. CARB has developed a Local Government Toolkit with guidance for GHG reduction strategies such as improving transit, developing bicycle and pedestrian infrastructure, increasing government fleet vehicle efficiency, and other strategies.

Senate Bill 375: Sustainable Communities and Climate Protection Act

SB 375, or the Sustainable Communities and Climate Protection Act, provides incentives for cities, counties, and developers to bring housing and jobs closer together and to improve public transit. The goal of the legislation is to reduce the number and length of automobile commuting trips, helping to meet the statewide targets for reducing GHG emissions set by AB 32.

SB 375 requires each metropolitan planning organization to add a broader vision for growth to its transportation plan—called a sustainable communities strategy (SCS). The SCS must lay out a plan to meet the region's transportation, housing, economic, and environmental needs in a way that enables the area to lower GHG emissions. The SCS should integrate transportation, land use, and housing policies to plan for achievement of the emissions target for each region. The Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG) Regional Transportation Plan (RTP) and SCS were most recently adopted in 2021 under the title Plan Bay Area 2050.

Senate Bill 743

On September 27, 2013, SB 743 was signed into law, starting a process that fundamentally changed transportation impact analysis as part of CEQA compliance. SB 743 generally eliminates auto delay, LOS, and other similar measures of vehicular capacity or traffic congestion as the sole basis for determining significant impacts under CEQA. Pursuant to the CEQA Guidelines, the new criteria "shall promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses" (Public Resources Code Section 21099(b)(1)).

Pursuant to SB 743, the Natural Resources Agency adopted revisions to the CEQA Guidelines to implement SB 743 on December 28, 2018. The revised CEQA Guidelines establish new criteria for determining the significance of transportation impacts. Under the new Guidelines, VMT-related metric(s) that evaluate the significance of transportation-related impacts under CEQA for land use are required beginning on July 1, 2020. The legislation does not preclude the application of local general plan policies, zoning codes, conditions of approval, or any other planning requirements that require evaluation of LOS, but these metrics no longer constitute the basis for determining transportation impacts under CEQA. The LOS data has been included for informational purposes only, to enable the reader to understand the traffic impacts of the proposed project.

California Department of Transportation

The California Department of Transportation (Caltrans) is the state agency responsible for planning, designing, constructing, operating, and maintaining the State Highway System (SHS). Any improvements or modifications to the SHS in the City must be approved by Caltrans.

Transportation Concept Reports and Corridor System Management Plans

Two state highways are in Rio Vista City limits—SR 12 and SR 84. Caltrans prepares a Transportation Concept Report and, in some cases, a Corridor System Management Plan, for each of its facilities. These are long-range documents intended to determine how a highway will be developed and managed so that it delivers the targeted LOS and quality of operations that are feasible to attain over a 20- to 25-year period. The 25-year concepts for SR-12 and SR-84 are outlined below.

- SR-12 has a concept level of service of LOS C in rural areas and LOS D in urban areas. The 25-year concept for the segment of SR-12 within Rio Vista is 2/3C (a two- to three-lane conventional highway). However, at some point SR-12 in Rio Vista may be converted to a four-lane divided highway.
- SR-84 has a concept level of LOS D. The 25-year concept and ultimate facility remain a two-lane conventional highway.

Vehicle Miles Traveled Transportation Impact Study Guide

The VMT TISG outlines how Caltrans will review land use projects with a focus on supporting state land use goals, state planning priorities, and GHG emissions reduction goals. The VMT TISG endorses the Office of Land Use and Climate Innovation's (LCI) Technical Advisory as the basis for transportation impact analysis methodology and thresholds, including the use of screening to streamline qualified projects because they help achieve the state's VMT reduction and mode shift goals.

Caltrans Safety Impact Guidance

The Caltrans Safety Impact Guidance provides technical instructions on how to evaluate potential safety impacts on the SHS. This guidance largely focuses on the actions of Caltrans district staff in performing the analysis and providing relevant impact information to lead agencies. The interim guidance recommends that safety analyses include a review of three primary elements related to transportation safety—design standard compliance, collision history, and collision risk (consistent with the Federal Highway Administration's Systemic Approach to Safety). The interim guidance does not establish specific analysis methods or significance thresholds for determining safety impacts under CEQA. Additionally, Caltrans notes that local agencies may use the interim guidance at their own discretion as a guide for review of local facilities.

Regional

Metropolitan Transportation Commission/Association of Bay Area Governments

MTC is the transportation planning, coordinating, and financing agency for the nine-county Bay Area region, including Rio Vista. It also functions as the federally mandated metropolitan planning organization for the region. It is responsible for regularly updating the RTP, which is a comprehensive blueprint for the development of mass transit, highway, airport, seaport, railroad, bicycle, and pedestrian facilities.

Plan Bay Area 2050 is the Bay Area's RTP/SCS. Plan Bay Area 2050 was prepared by MTC in partnership with ABAG, the Bay Area Air District, and the San Francisco Bay Conservation and Development Commission; it was last updated on October 21, 2021 (ABAG & MTC 2021). The SCS sets a development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, would reduce GHG emissions from transportation (excluding goods movement) beyond the per capita reduction targets identified by CARB. An overarching goal of Plan Bay Area 2050 is to concentrate development in areas where there are existing services and infrastructure rather than allocate new growth to outlying areas where substantial transportation investments would be necessary to achieve the per capita passenger VMT and associated GHG emissions reductions.

MTC has established its policy on complete streets in the Bay Area. The policy states that projects funded all, or in part, with regional funds (e.g., federal, State Transportation Improvement Program, and bridge tolls) must consider the accommodation of bicycle and pedestrian facilities, as described in Caltrans Deputy Directive 64. These recommendations do not replace locally adopted policies regarding transportation planning, design, and construction. Instead, they facilitate the accommodation of pedestrians, including wheelchair users, and bicyclists into all projects where bicycle and pedestrian travel is consistent with current adopted regional and local plans.

As part of the implementing framework for Plan Bay Area, Priority Development Areas and Transit Priority Areas are identified as areas where concentrated development can have beneficial environmental effects and reduce adverse environmental impacts.

Solano Transportation Authority

The Solano Transportation Authority (STA) is a joint powers agency that serves as the congestion management agency for Solano County. STA develops the long-range Solano County Comprehensive Transportation Plan (CTP), updates the Solano Congestion

Management Program, and leads countywide efforts such as the Solano Countywide Active Transportation Plan and the Solano Countywide Local Road Safety Plan. STA also sets transportation priorities, delivers specific transportation projects, provides programs and services for the County and the seven incorporated cities within the County, and coordinates with local, state, and federal agencies.

Solano Countywide Active Transportation Plan 2020

The Solano Countywide Active Transportation Plan (ATP) is a cohesive document that establishes countywide priorities and provides project lists and program guidance to local jurisdictions (STA 2020). The ATP includes an in-depth evaluation of existing bicycle and pedestrian facilities in the City of Rio Vista, as well as a list of recommended improvements. Specifically, the ATP developed a backbone network which links the top 10 highest composite demand areas in the city and developed recommendations to promote cross-town connectivity to priority destinations while maximizing available curb-to-curb right-of-way to keep costs as low as possible.

2023 Solano County Congestion Management Program

STA is Solano County's designated congestion management agency. It is responsible for implementing programs to ensure traffic levels remain manageable and is in charge of coordinating land use, air quality, and transportation planning among local jurisdictions (STA 2023).

Solano Countywide Local Road Safety Plan 2022

The Solano Countywide Local Road Safety Plan evaluated collision trends in Solano County and provided a data- and community-driven framework to systematically identify, analyze, and prioritize safety concerns on local roads (STA 2022). The plan identifies multiple emphasis areas with goals and strategies for accomplishing those goals.

Solano County Comprehensive Transportation Plan 2040

The STA's CTP for Solano County envisions, directs, and prioritizes the transportation needs of Solano County. The CTP incorporates various STA studies and plans into a 25-year planning document. The Solano CTP 2040 was completed in June 2020 (STA 2020).

Solano County Regional Transportation Impact Fee

The Regional Transportation Impact Fee (RTIF) was created as part of the Solano County Public Facility Fee to mitigate the impacts created by future growth. The RTIF Program divides the county into five geographical districts to collect the impact fees on new

developments. Each district includes multiple local jurisdictions. The revenues collected from the RTIF Program are returned to seven districts (STA 2023).

Solano County Active Transportation Plan: Rio Vista Chapter

The Solano County ATP provides a framework to help STA improve active transportation conditions throughout Solano County. The plan builds upon previous active transportation planning efforts and consolidates STA's separate Countywide Bicycle, Pedestrian, Safe Routes to School, and Safe Routes to Transit Plans into one cohesive plan. It establishes countywide priorities and provides project lists and program guidance, which STA and local jurisdictions such as Rio Vista can use to help people of all ages and abilities feel comfortable walking and bicycling (STA 2020).

Local

City of Rio Vista Municipal Code

Chapter 10.32 Trip Reduction Program

As adopted in Chapter 10.32 of the Municipal Code, the intent of the code is to establish transportation system management requirements for employers located in the city. These requirements will provide alternative commute modes and reduce the total number of vehicle trips as part of a program to achieve the following objectives:

- Reduce peak-period traffic and congestion by decreasing the number of single-occupant vehicle trips associated with commuting;
- Reduce or delay the need for major transportation facility improvements by making more efficient use of existing facilities;
- Reduce present and future motor vehicle emissions as a contribution towards complying with federal and state ambient air quality standards;
- Establish Transport System Management (TSM) goals for employers so that a significant number of their employees are encouraged to arrive at the worksite by means other than single occupant vehicles.

5.15.1.2 EXISTING CONDITIONS

Roadway Network

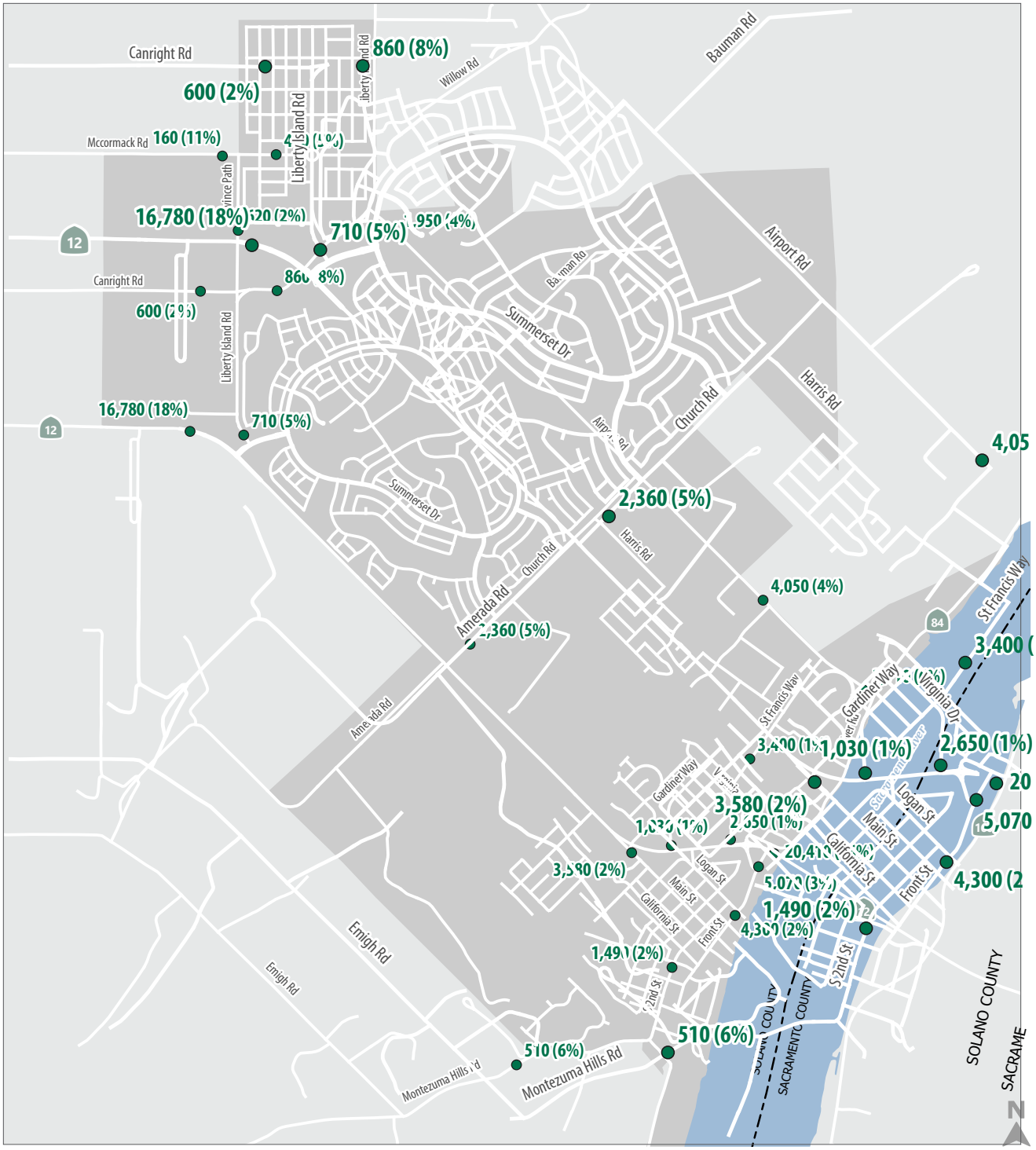
State Highways

There are two state highways in the study area: SR-12 and SR-84.

- **SR-12** is a major east-west arterial that provides a connection between the City of Rio Vista and major roadways and communities east and west of Rio Vista. It serves as a primary roadway for local travel and is essentially the only roadway for regional travel. To the east, SR-12 connects to I-5 and SR-99 as well as to Lodi and communities east of Lodi. To the west, SR-12 connects to SR-113 and I-80, as well as Suisun City, Fairfield, and communities west of Suisun City and Fairfield. In Rio Vista, SR-12 is a two-lane conventional highway but includes a two-way left turn lane between Drouin Drive and N Front Street. Daily traffic volumes vary between approximately 16,000 and 21,000 vehicle trips per day.
- **SR-84** (also called River Road) is a north-south two-lane conventional highway that begins at SR-12 and crosses the Sacramento River via a ferry crossing before continuing north to Sacramento. It is classified as a major collector, and in Rio Vista, SR-84 carries between approximately 1,000 and 3,000 vehicle trips per day.

Local Roads

Rio Vista's internal roadway network is comprised of one arterial and multiple collector roads, all of which are two lane facilities. Airport Road is a primary east-west arterial that serves as a parallel route to SR-12. Airport Road is frequently used as a connection between downtown Rio Vista and the residential developments north of SR-12. Major collector roads include Main Street, Front Street, Second Street, Drouin Drive, Liberty Island Road, Church Road, and St. Francis Drive. Figure 5.15-1 displays the daily traffic volumes at the roadways.



Source: Fehr & Peers, 2024.

X,XXX (XX%)

Roadway Segment ADT (Heavy Vehicle Percentage)

Rio Vista City Boundary

Figure 5.15-1
Existing Roadway ADT

Transit Network

Regionally, the Bay Area as a whole is served by multiple rail transit providers such as Bay Area Rapid Transit (BART), Caltrain, and the Capitol Corridor. Additionally, bus service options in Solano County include SolTrans, Solano Express, Greyhound, Vacaville City Coach, and more. However, transit service in and to Rio Vista is limited. Delta Breeze Transit System provides a Highway 12 Express Route that provides limited service Monday through Friday between Rio Vista and Fairfield, with four stops in Rio Vista, three stops in Suisun City, and two stops in Fairfield. A Rio Vista/Isleton City Circulator provides Monday through Friday door-to-door dial-a-ride services to Rio Vista, Isleton, and Delta resort communities on Highway 160 between the two cities.

Existing Bicycle and Pedestrian Facilities

Existing bicycle and pedestrian facilities in Rio Vista are limited. Sidewalks are present along some roadways; however, significant gaps in the pedestrian network make it difficult for residents to safely and/or comfortably walk as a travel mode. The 2020 Solano Countywide ATP indicates that there are approximately 50 lane miles of sidewalk coverage out of a potential 118 roadway network lane miles that could have sidewalks. Most sidewalks are in the downtown area and residential developments north and south of SR-12 in the southern half of Rio Vista.

The ATP also notes only 2 out of 59 miles of roadway have bicycle facilities. The existing approximately 2 miles of bicycle facilities consist of a Class I Multi-Use Path on Airport Road. The ATP determined most local roads have a low bicycle level of traffic stress; however, SR-12 is considered high stress and is a significant barrier for pedestrians and bicyclists. The ATP included a public outreach process and thorough needs analysis to determine critical connections for bicyclists and pedestrians. The ATP identifies a backbone bicycle and pedestrian network based on high demand routes intended to promote cross-town connectivity and maximize curb-to-curb right-of-way.

In addition to the ATP, Caltrans is currently undertaking a State Highway Operation and Protection Program (SHOPP) project intended to improve bicycle and pedestrian accessibility and comfort (and improve vehicular travel) on SR-12. The SHOPP project is expected to be completed by 2025 and will include various bicycle and pedestrian improvements in downtown Rio Vista. In addition to the SHOPP project, two new projects in Rio Vista, one bicycle and one pedestrian project, were recently selected to receive funding through the Caltrans Local Highway Safety Improvement Program Cycle 11 call-for-projects. Funds will be used to construct a Class II bike lane on Norman Richards

Drive, a Class IV separated bike lane on Airport Road, and pedestrian crossing enhancements at the intersections of Airport Road/Church Road, Airport Road/Norman Richards Drive, and North Front Street/SR 84.

Figure 5.15-2 displays existing and planned bicycle and pedestrian improvements.

Safety

The history of collisions in Rio Vista for the most recent five years was obtained from the Transportation Injury Mapping System (TIMS) that is drawn from the California Highway Patrol's Statewide Integrated Traffic Records System. The most recent information available is from January 1, 2018, to December 31, 2022.[1] Note that TIMS data only includes collisions involving injuries. It does not include collisions with property damage only. During the study period, a total of 95 collisions were reported, including 2 pedestrian collisions and 4 bicycle collisions. Notably, approximately 65 percent of all collisions were on state highways.

Table 5.15-1 shows the number of collisions by severity, and Figure 5.15-3 identifies hot-spot locations.

Table 5.15-1 Collisions by Severity, 2018–2022

Collision Severity	Total Count	Percent of Total
Fatal	4	4%
Injury (Severe)	5	5%
Injury (Other Visible)	44	47%
Injury (Complaint of Pain)	42	44%
Total	**95**	**100%**

Source: STREC 2023.
Notes: TIMS Data does not include collisions with property damage only.
2021 and 2022 data are considered provisional and subject to change.

1 2022 TIMS Data is considered provisional at the time of this report and may not accurately represent all reported collisions during these years.

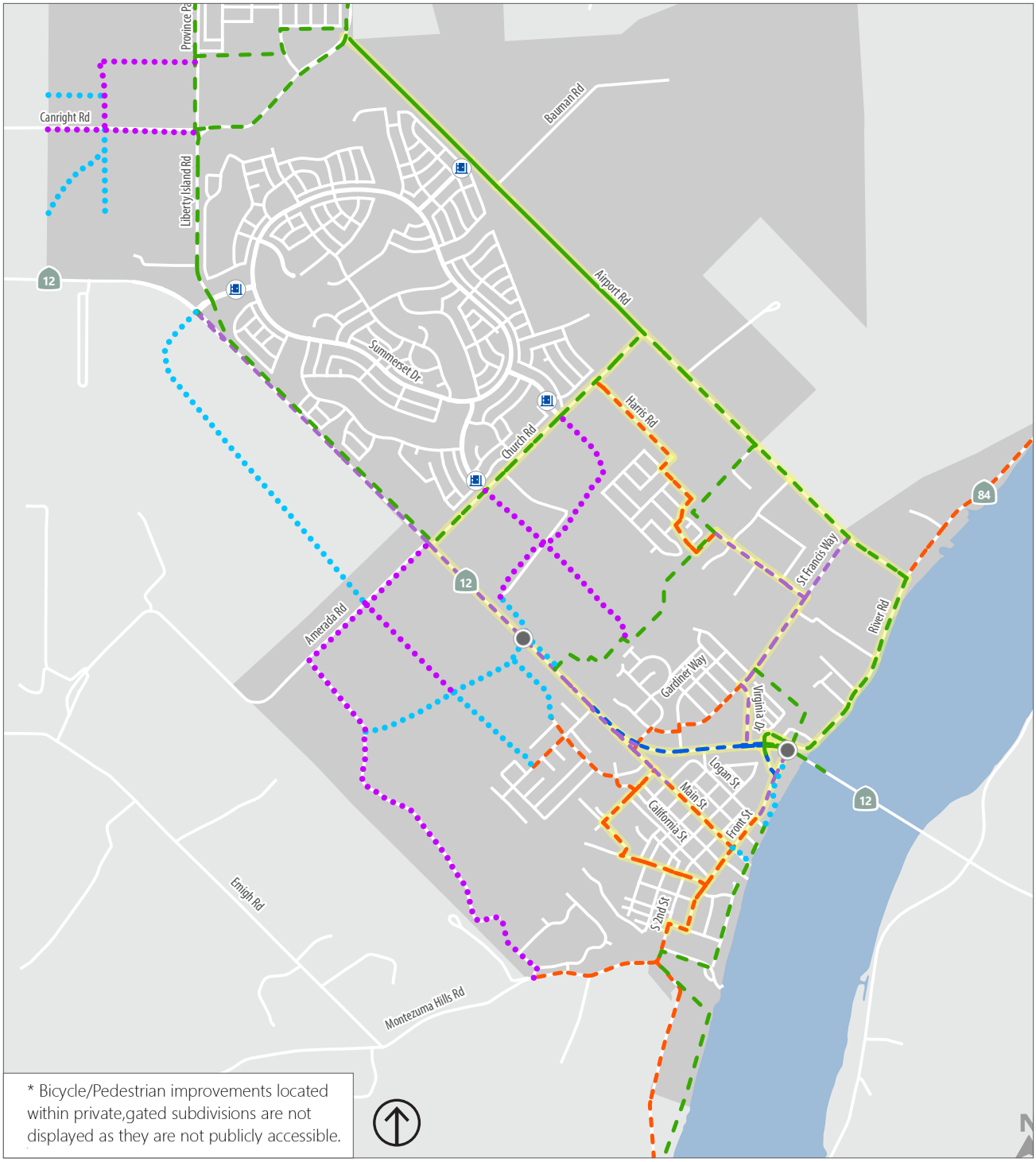
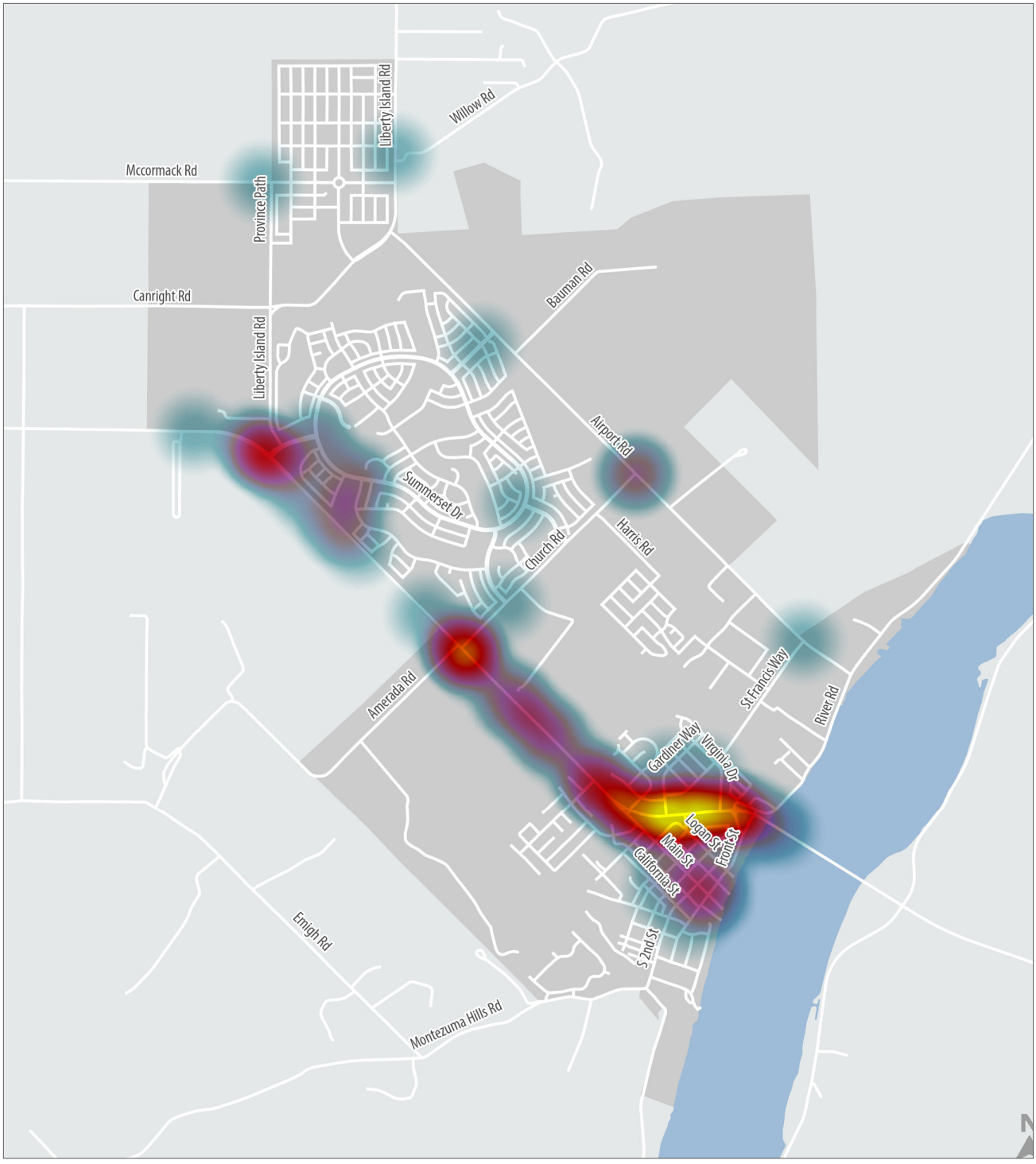


Figure 5.15-2
Existing and Planned Active Transportation Network

Source: Fehr & Peers, 2024.



Source: Fehr & Peers, 2024. California Statewide Integrated Traffic Records System (SWITRS).

Figure 5.15-3
Collision Heatmap

As shown in Table 5.15-2, the most common collision type reported during the study time period was rear end, which accounts for approximately 42 percent of all collisions. The second most common collision type was broadside, which accounts for almost 30 percent of all collisions.

Table 5.15-2 Type of Collision, 2018–2022

Collision Type	Total Count	Percent of Total
Head-On	12	13
Sideswipe	3	3
Rear End	40	42
Broadside	27	29
Hit Object	5	5
Overturned	2	2
Vehicle/Pedestrian	3	3
Other	1	1
Not Stated	2	2
Total	**95**	**100**

Source: STREC 2023.
Notes: TIMS Data does not include collisions with property damage only.
2022 data is considered provisional and subject to change.

In 2022, STA adopted the Solano Countywide Local Road Safety Plan, which includes an in-depth evaluation of collision trends in the city and focused recommendations for the following five "high crash locations."

1. SR-12 & Virginia Drive
2. SR-12 & Summerset Road
3. Waterwood Drive & Summerset Drive
4. Church Road & Marks Road
5. SR-12 west of Summerset Drive

Vehicle Miles Traveled

By definition, one vehicle mile traveled (VMT) occurs when one vehicle (regardless of number of occupants or type of vehicle such as electric or non-electric) is driven on a roadway for one mile. For the purposes of this EIR, VMT is typically estimated and projected for an average weekday. Many factors affect VMT, including the average distance residents commute to work, school, and shopping, as well as the proportion of

trips that are made by non-automobile modes. Areas that have a diverse land use mix and ample facilities for non-automobile modes, including transit, tend to generate lower VMT than auto-oriented rural and suburban areas where residents live at a distance from work, school, and other amenities.

The Solano Napa Activity-Based Model (SNABM) and Fehr & Peers VMT+ tool were evaluated for potential use in determining existing VMT for Rio Vista. The SNABM covers the entire nine-county San Francisco Bay Area, which had 2.8 million households and 7.5 million persons in 2015. The model was last updated in August 2020 for consistency with the MTC Plan Bay Area 2040 and has a 2015 base year and a 2040 cumulative year. The land use in the transportation analysis zones (TAZ) for Rio Vista in the base year 2015 model were compared to existing 2022 land use data provided by the City of Rio Vista via Interwest to determine suitability for using VMT estimates “off-the-shelf” (i.e., with no model adjustments). Using the model off-the-shelf would be necessary because at the time of this project, the SNABM model development documentation and user guide lacked sufficient detail on a variety of features including model calibration and validation, sub-module information such as special generators, interregional travel, visitor travel and more, model installation, structure, and run time, and how to make land use changes. Therefore, if the model was to be used for this general plan effort, it would need to be used as is.

Based on 2022 land use data provided by Interwest, the 2015 model differs from 2022 conditions by 1,926 single-family homes, 74 multi-family homes, and 576 jobs. Additionally, Plan Bay Area 2040 has been superseded by Plan Bay Area 2050, so the cumulative year version of the model is no longer consistent with the latest growth plan for the Bay Area as a whole.

VMT+ utilizes 2022 Location Based Data (LBS) from StreetLight, which is based on anonymized locational records, passively collected from smart phones. It provides home-based VMT per resident and home-based work VMT per employee in California, down to the census block group. Home-based VMT per resident includes all home-based automobile vehicle trips traced back to the residence of the trip-maker; non-home-based trips are excluded. Home-based work VMT per employee includes all automobile trips directly between home and work. There are three primary limitations for using VMT+:

1. Census block groups are not consistent with city boundaries and some block groups overlap between the city and county boundary. Census block groups 060952535013 and 050952535023 (see Figure 5.15-4) are very large block groups that contain a small amount of development in the City of Rio Vista. Given the

overwhelming size of these block groups, they were excluded from the analysis and as a result, not all land use in Rio Vista is captured.

2. VMT+ provides trip-based, rather than tour-based, VMT per capita or per worker. The LCI Technical Advisory indicates that when available, tour-based metrics are ideal because they capture travel behavior more comprehensively, but where tour-based data is not available, a trip-based assessment serves as a reasonable proxy.

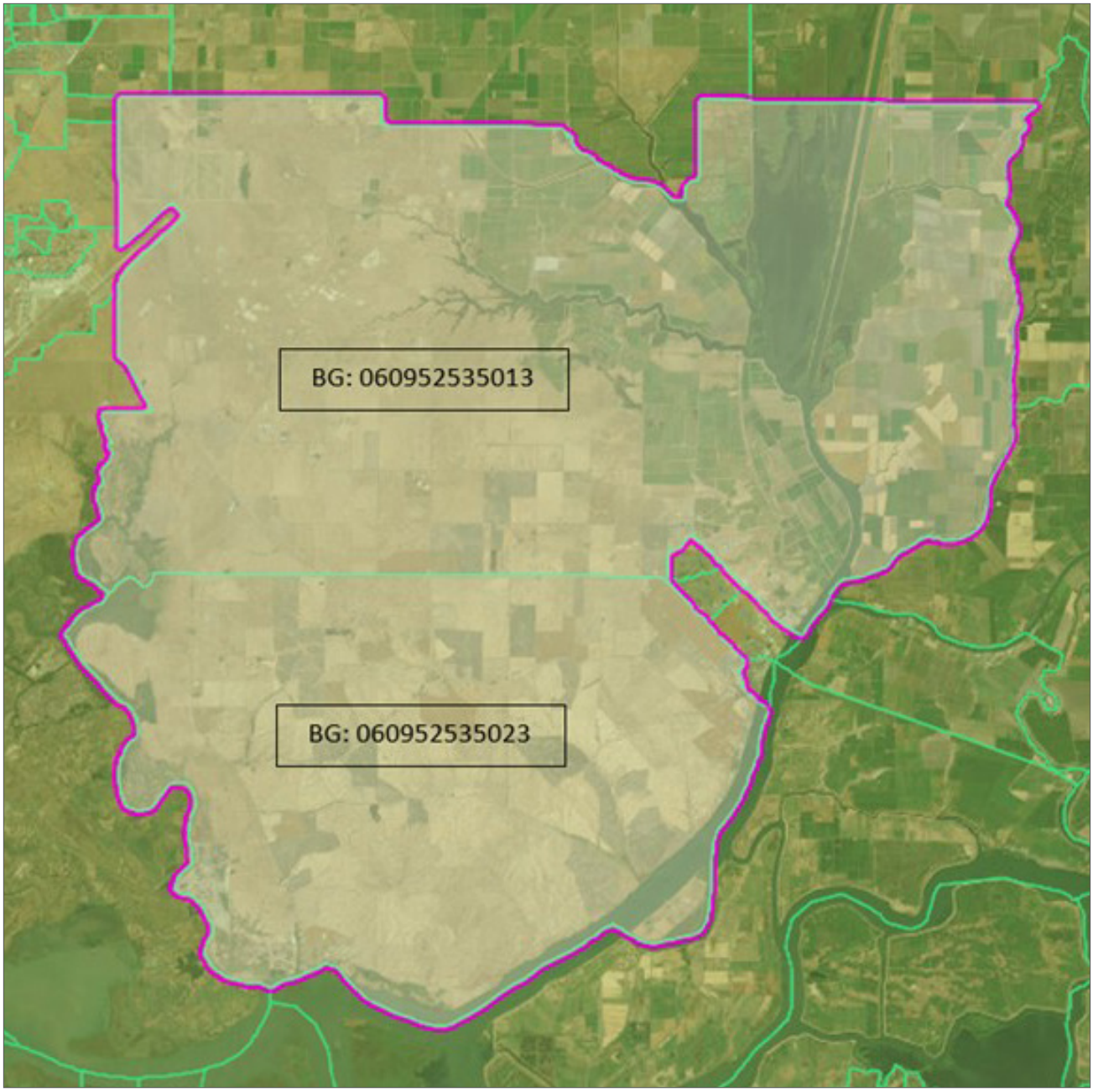
3. VMT+ can only be used to provide existing VMT and cannot be used to quantify cumulative VMT.

Although VMT+ has the limitations described above, it provides the most recent and accurate data available for estimating existing home-based VMT per resident and home-based work VMT per employee for the city of Rio Vista and therefore is used for the purposes of this EIR. The average citywide home-based VMT per resident and home-based work VMT per employee are displayed in Table 5.15-3.

Table 5.15-3: Rio Vista Vehicle Miles Traveled

Census Block Group	Home-Based VMT per Resident	Home-Based Work VMT per Employee
60952535012	34.8	13.4
60952535011	30.2	10.4
60952535021	26.5	14.9
60952535022	34.4	9.9
Citywide Average	**31.5**	**12.2**

Source: Fehr & Peers, 2023
Notes: VMT derived from 2022 StreetLight Data.



Source: Fehr & Peers, 2024.

Figure 5.15-4
VMT+ Block Groups

5.15.2 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:

T-1 Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

T-2 Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b). (*Vehicle Miles Travelled)*

T-3 Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

T-4 Result in inadequate emergency access.

5.15.3 Proposed General Plan Goals and Policies

The following goals and policies from the proposed General Plan are applicable to transportation.

Land Use Plan Element

- **Goal LU-1:** To create a Downtown and Waterfront that is a vibrant, highly desirable place for residents, businesses, and visitors.
- **Goal LU-2:** To maintain and enhance Rio Vista while providing a safe, family-friendly small-town character.
- **Goal LU-3:** To provide new residential and non-residential uses, while maintaining and preserving natural open space and recreational areas.
- **Goal LU-4:** To create a community with a variety of housing types that offer choices for Rio Vista residents and create complete, livable neighborhoods.
- **Goal LU-5:** To preserve and enhance historic and cultural features that contribute to the character of Rio Vista.
- **Goal LU-6:** To encourage the growth and development of new retail services and businesses, employment, restaurants/dining establishments, and entertainment uses in Rio Vista to meet the needs of the community and visitors to the City.

- **Goal LU-7:** To welcome new businesses and job opportunities in the City, while ensuring compatibility with surrounding uses and planned new uses**.**
  - **Policy LU-1:** Promote the development of compact, complete residential neighborhoods by encouraging the location of services and amenities within walking and biking distance of residences.
  - **Policy LU-3:** Encourage new residential development to incorporate design features that promote walking and connectivity between blocks and adjacent neighborhoods.
  - **Policy LU-6:** Encourage development in the North Waterfront District to be a mix of uses including residential, commercial, and public park space along the waterfront.
  - **Policy LU-7:** New blocks created in the North Waterfront District shall be of a size and scale consistent with the existing urban form of Downtown and as described in the Waterfront Specific Plan.
  - **Policy LU-8:** Encourage new commercial uses to group into clustered areas or centers containing professional offices, retail sales, and services. Where feasible, clustered development should be located at the major intersections, and exclude "strip" commercial development (shallow depth, linear form, parking in front of building, etc.).
  - **Policy LU-9:** Promote pedestrian-oriented retail and mixed-use development in Neighborhood Mixed Use, Downtown, and the Waterfront areas.
  - **Policy LU-11:** In Downtown, Waterfront, and Neighborhood Mixed Use areas, require pedestrian-oriented amenities such as small plazas, outdoor seating, public art, and active street frontages with ground floor retail where appropriate.

Mobility and Circulation Element

- **Goal CM-1:** A circulation and mobility system that prioritizes safety and supports and accommodates all modes of transportation.
- **Goal CM-2:** A network of roads and trails that balances local mobility needs of community members with the needs of regional circulation/commuters passing through Rio Vista.
- **Goal CM-3:** A citywide circulation system that is adequate and evolves to meet the needs of the community over time.
  - **Policy MC-2:** Require new development projects to provide primary roadways and connected and continuous pedestrian and bicycle routes as generally depicted in Figure 3.2.

- **Policy MC-3:** New development projects that require an amendment to the General Plan should strive not to increase base year citywide average VMT per capita, as measured by home-based VMT per resident and home-based VMT per employee or other applicable metric as determined by the city.
- **Policy MC-4:** Maintain, and update as needed, a street classification system with design standards that are context-sensitive. Also, the City should enable safe, comfortable, and attractive access for pedestrians, bicyclists, motorists, and transit users of all ages and abilities. Street standards should:
  - Address the needs of different modes according to roadway classification.
  - Reduce the potential for conflicts and safety risks between modes.
  - Allow for adjustment by the City Engineer where needed, on a case-by-case basis.
- **Policy MC-6:** Utilize a data-driven "vision zero" approach to eliminate all traffic fatalities and severe injuries by 2035.
- **Policy MC-7:** Coordinate with Caltrans and STA on regional infrastructure projects to incorporate city projects to reduce planning and construction costs.
- **Policy MC-8:** Discourage the widening of Highway 12 in the city and consider Caltrans typical expressway design standards inappropriate within city limits.
- **Policy MC-10:** Prioritize planning and construction of a Highway 12 bicycle and pedestrian grade-separated crossing over expansion of vehicular travel lanes on Highway 12.
- **Policy MC-11:** Provide outreach and education to existing community members to ensure all members are aware of transit options available.
- **Policy MC-12:** For larger developments with frontage to major roads, require well-lit sheltered bus stops with benches and other associated amenities, as deemed appropriate by the city, to encourage transit ridership.
- **Policy MC-14:** Provide a complete sidewalk and bicycle network throughout the city. Use discretionary funding sources and grant funding for the following priority projects:
  - Identify gap segments in sidewalks, bike lanes or bikeways, and other bicycle and pedestrian facilities where near-term development is not anticipated.
  - Prioritize construction of pedestrian and bicycle facilities in areas with a high potential for injury.
  - Prioritize completion of gaps in bicycle and pedestrian facilities near important destinations, such as schools, parks, and commercial areas.

- **Policy MC-15:** In new construction, provide mid-block pedestrian crossings and off-street pedestrian paths in areas with high pedestrian traffic to create more direct walking routes.
- **Policy MC-16:** The City's circulation network should accommodate all anticipated and potential modes of transportation, including small personal electric vehicles ranging in size up to golf carts.

Safety Element

- **Goal SE-2:** To maintain emergency response services that meet the needs of the community.
  - **Policy SE-3:** Coordinate with emergency responders to maintain potential evacuation routes, including roadway improvements as needed.
  - **Policy SE-6:** Plan for adequate firefighting infrastructure, including water supply and pressure, road and building clearance for firefighting vehicles, and clear and legible street signage throughout the community.

5.15.4 Environmental Impacts

5.15.4.1 Vehicle Miles Traveled

Based on Appendix G of the CEQA Guidelines, the General Plan would result in a significant transportation impact if it would conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b), relevant portions of which are copied below.

> (b) Criteria for Analyzing Transportation Impacts.
>
> (1) Land Use Projects.
>
> Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Projects that decrease vehicle miles traveled in the project area compared to existing conditions should be presumed to have a less than significant transportation impact.

> (2) Transportation Projects.
>
> Transportation projects that reduce, or have no impact on, vehicle miles traveled should be presumed to cause a less than significant transportation impact. To the extent that such impacts have already been adequately addressed at a programmatic level, such as in a regional transportation plan EIR, a lead agency may tier from that analysis as provided in Section 15152.
>
> (3) Qualitative Analysis.
>
> If existing models or methods are not available to estimate the vehicle miles traveled for the project being considered, a lead agency may analyze the project's vehicle miles traveled qualitatively. Such a qualitative analysis would evaluate factors such as the availability of transit, proximity to other destinations, etc.
>
> (4) Methodology.
>
> A lead agency has discretion to choose the most appropriate methodology to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household or in any other measure.

The City of Rio Vista has not adopted a quantitative VMT threshold, in part because the city does not have a recently calibrated and validated local travel demand model or other method to estimate and forecast VMT. For purposes of this impact analysis, the City has opted to rely on a qualitative evaluation method and threshold as allowed in CEQA Guidelines Section 15064.3, subdivision (b)(3). In addition to the specific factors listed above, assessing potential VMT impact significance considered the following guidance.

- *Technical Advisory on Evaluating Transportation Impacts in CEQA* (Technical Advisory), California Governor's Office of Land Use and Innovation (formerly Office of Planning and Research), December 2018.
- *2022 Scoping Plan for Achieving Carbon Neutrality*, California Air Resources Board, December 2022.

5.15.4.2 Transit, Bicyclists, and Pedestrians

Appendix G of the CEQA Guidelines indicates that impacts may be significant if a project conflicts with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. The proposed project would have a significant impact on transit, bicycles, or pedestrians if it disrupts an existing transit, bicycle, or pedestrian facility/service or would interfere with planned improvements to these transportation system components contained in adopted policies, plans, or programs regarding these systems.

5.15.4.3 Hazards

Appendix G of the CEQA Guidelines indicates that impacts may be significant if a project would substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). The proposed project would have a significant impact on hazards if it would cause any inconsistencies with applicable transportation design standards.

5.15.4.4 Emergency Access

Appendix G of the CEQA Guidelines indicates impacts may be significant if a project results in inadequate emergency access. The proposed project would have a significant impact on emergency access if it would cause any inconsistencies with applicable transportation design standards or emergency response plans.

Impact 5.15-1: Implementation of the proposed project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. [Threshold T-1]

Implementation of the proposed project would not result in modifications to the transit, bicycle, or pedestrian network that would disrupt existing facilities/services or interfere with implementation of planned facilities/services contained in adopted programs, plans, policies, or ordinances.

As discussed in Section 5.15.1.1, *Regulatory Background*, several programs, plans, and policies guide the planning of circulation systems in the city. In general, the overarching goals of these policy documents are to ensure a safe, efficient, and accessible multi-modal transportation network for all users that also reduces VMT to improve air quality

and reduce GHG emissions, which is consistent with the goals, policies, and implementation measures in the proposed project.

Several policies, such as Policy MC-2, Policy MC-10, and Policy MC-11 would help facilitate the development of improved facilities for walking, bicycling, and transit use. Likewise, implementation of the proposed project would enable the City to improve bicycle and pedestrian programs and infrastructure consistent with the Solano Countywide Active Transportation Plan. The proposed project also contains additional policies that support accessibility and the provision of amenities to bicyclists, pedestrians, and transit users, some of which are listed below:

- **Policy LU-1:** Promote the development of compact, complete residential neighborhoods by encouraging the location of services and amenities within walking and biking distance of residences.
- **Policy LU-3:** Encourage new residential development to incorporate design features that promote walking and connectivity between blocks and adjacent neighborhoods.
- **Policy MC-4:** Maintain, and update as needed, a street classification system with design standards that are context-sensitive and enable safe, comfortable, and attractive access for pedestrians, bicyclists, and motorists, and transit users of all ages and abilities. Street standards should:
  - Address the needs of different modes according to roadway classification.
  - Reduce the potential for conflicts and safety risks between modes.
  - Allow for adjustment by the City Engineer where needed, on a case-by-case basis.
- **Policy MC-6:** Implement a data-driven “vision zero” approach to eliminate all traffic fatalities and severe injuries by 2035.
- **Policy MC-7:** Coordinate with Caltrans and STA on regional infrastructure projects to incorporate city projects to reduce planning and construction costs.
- **Policy MC-10:** Prioritize planning and construction of a Highway 12 bicycle and pedestrian grade-separated crossing over expansion of vehicular travel lanes on Highway 12.
- **Policy MC-11:** Provide outreach and education to existing community members to ensure all members are aware of transit options available.
- **Policy MC-12:** For larger developments with frontage to major roads, require well-lit sheltered bus stops and benches and other associated amenities, as deemed appropriate by the city, to encourage transit ridership.

- **Policy MC-14:** Provide a complete sidewalk and bicycle network throughout the city. Use discretionary funding sources and grant funding for the following priority projects:
  - Identify gap segments in sidewalks, bike lanes or bikeways, and other bicycle and pedestrian facilities where near-term development is not anticipated.
  - Prioritize construction of pedestrian and bicycle facilities in areas with a high potential for injury.
  - Prioritize completion of gaps in bicycle and pedestrian facilities near important destinations, such as schools, parks, and commercial areas.
- **Policy MC-15:** In new construction, provide mid-block pedestrian crossings and off-street pedestrian paths in areas with high pedestrian traffic to create more direct walking routes.

With implementation of these policies, the proposed project would not conflict with a program, plan, ordinance, or policy addressing the circulation system. Therefore, impacts would be less than significant.

Level of Significance Before Mitigation: Impact 5.15-1 would be less than significant.

Mitigation Measures

No mitigation measures are required.

Impact 5.15-2: Implementation of the proposed project would conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b). [Threshold T-2]

CEQA Guidelines Section 15064.3 describes how transportation impacts are analyzed after SB 743. It eliminates auto delay, and the LOS methodology used to assess and quantify such delay, and similar measures of vehicular capacity or traffic congestion as the sole basis for determining significant impacts. Instead, CEQA Guidelines Section 15064.3 requires use of VMT methodology for assessing transportation impacts:

> Generally, VMT is the most appropriate measure of transportation impacts. For the purposes of this section, VMT refers to the amount and distance of automobile travel attributable to a project. Other relevant considerations may include the effects of the project on transit and non-motorized travel. Except as provided in subdivision (b)(2)…[regarding roadway capacity], a project's effect on automobile delay shall not constitute a significant environmental impact.

With the proposed project, the city is anticipated to grow by 3,022 dwelling units and 776 jobs. The largest planned developments include Brann Ranch on the western edge of the city, west of the existing Trilogy and Liberty Ranch subdivisions; Riverwalk in the center of the city east of Church Road and north of SR-12; and development on a City-owned parcel in the center of the city, southeast of the Church Road/Airport Road intersection. Together, these three development projects account for over 80 percent of the residential growth in the city. Approximately 90 percent of the job growth is anticipated in the eastern side of the city, east of Church Road on both the north and south sides of SR-12.

Based on the proposed land use map, the proposed project would result in similar or slightly higher home-based work VMT per employee when compared to existing (baseline) conditions. This can be concluded because proposed commercial and industrial development is near existing commercial and industrial development and is anticipated to attract tenants that are similar to existing. Therefore, these developments would likely attract similar employees as the existing developments attract. The proposed project does not include a robust plan to create a large quantity of high-paying jobs that could attract a significant number of individuals commuting from a long distance, and most jobs would likely support or attract residents within Rio Vista or nearby unincorporated areas of Solano County, Sacramento County, or San Joaquin County. Additionally, the percentage increase in dwelling units exceeds the percentage increase in jobs, and there will be more residents than jobs in the future, indicating that there would be enough residents to fulfill the increase in jobs (e.g., if more jobs than dwelling units were proposed, employers would have to attract residents from farther away to fill those jobs because the city itself would not have enough residents).

The home-based work VMT per employee is anticipated to be similar or slightly higher than existing (baseline) conditions, and the home-based VMT per resident would likely increase. This is primarily due to the following:

1) Most existing residential developments in Rio Vista are age restricted. The median age in Rio Vista is 64, which is an older population compared to the state of California, where the median age is 37. Age-restricted housing tends to result in lower trip generation per dwelling unit (and ultimately daily VMT) when compared to traditional single-family housing. The majority of future development would not be age restricted, and it can be inferred that it would generate more trips per dwelling unit and ultimately more VMT than the existing community.

2) As previously mentioned, the proposed project Land Use Plan would not result in enough jobs to support the future residential development. Therefore, some residents would be required to find jobs elsewhere. The closest large employment opportunities are Fairfield/Suisun City, the East Bay, or Lodi, which would all result in a daily VMT greater than or equal to the existing average home-based VMT per resident of 31.5.

While the proposed land use pattern is likely to produce similar or slightly higher home-based VMT per resident and home-based work VMT per employee, the proposed project includes the following policies designed to reduce vehicle travel and VMT:

- **Policy LU-1:** Promote the development of compact, complete residential neighborhoods by encouraging the location of services and amenities within walking and biking distance of residences.
- **Policy LU-3:** Encourage new residential development to incorporate design features that promote walking and connectivity between blocks and adjacent neighborhoods.
- **Policy LU-6:** Encourage development in the North Waterfront District to be a mix of uses including residential, commercial, and public park space along the waterfront.
- **Policy LU-7:** New blocks created in the North Waterfront District shall be of a size and scale consistent with the existing urban form of Downtown and as described in the Waterfront Specific Plan.
- **Policy LU-8:** Encourage new commercial uses to group into clustered areas or centers containing professional offices, retail sales, and services. Where feasible, clustered development should be located at the major intersections, and exclude “strip” commercial development (shallow depth, linear form, parking in front of building, etc.).
- **Policy LU-9:** Promote pedestrian-oriented retail and mixed-use development in Neighborhood Mixed Use, Downtown, and the Waterfront areas.
- **Policy LU-11:** In Downtown, Waterfront, and Neighborhood Mixed Use areas, require pedestrian-oriented amenities such as small plazas, outdoor seating, public art, and active street frontages with ground floor retail where appropriate.
- **Policy MC-2:** Require new development projects to provide primary roadways and connected and continuous pedestrian and bicycle routes as generally depicted in Figure 3.2.

- **Policy MC-3:** New development projects that require an amendment to the General Plan should strive not to increase base year citywide average VMT per capita, as measured by home-based VMT per resident and home-based VMT per employee or other applicable metric as determined by the City.
- **Policy MC-4:** Maintain, and update as needed, a street classification system with design standards that are context-sensitive. Also, the City should enable safe, comfortable, and attractive access for pedestrians, bicyclists, motorists, and transit users of all ages and abilities. Street standards should:
  - Address the needs of different modes according to roadway classification.
  - Reduce the potential for conflicts and safety risks between modes.
  - Allow for adjustment by the City Engineer where needed, on a case-by-case basis.
- **Policy MC-6:** Utilize a data-driven "vision zero" approach to eliminate all traffic fatalities and severe injuries by 2035.
- **Policy MC-8:** Discourage the widening of Highway 12 in the city and consider Caltrans typical expressway design standards inappropriate within City limits.
- **Policy MC-10:** Prioritize planning and construction of a Highway 12 bicycle and pedestrian grade-separated crossing over expansion of vehicular travel lanes on Highway 12.
- **Policy MC-11:** Provide outreach and education to existing community members to ensure all members are aware of transit options available.
- **Policy MC-12:** For larger developments with frontage to major roads, require well-lit sheltered bus stops with benches and other associated amenities, as deemed appropriate by the city, to encourage transit ridership.
- **Policy MC-14:** Provide a complete sidewalk and bicycle network throughout the city. Use discretionary funding sources and grant funding for the following priority projects:
  - Identify gap segments in sidewalks, bike lanes or bikeways, and other bicycle and pedestrian facilities where near-term development is not anticipated.
  - Prioritize construction of pedestrian and bicycle facilities in areas with a high potential for injury.
  - Prioritize completion of gaps in bicycle and pedestrian facilities near important destinations, such as schools, parks, and commercial areas.
- **Policy MC-15:** In new construction, provide mid-block pedestrian crossings and off-street pedestrian paths in areas with high pedestrian traffic to create more direct walking routes.

- **Policy MC-16:** The City's circulation network should accommodate all anticipated and potential modes of transportation, including small personal electric vehicles ranging in size up to golf carts.

While the policies listed above are supportive of actions that could dampen VMT growth, they do not contain sufficient changes to the built environment, the cost of using vehicles, or the convenience of using vehicles such that VMT per capita rates would be reduced below existing levels.

When making a final impact determination, other available evidence related to VMT trends should be considered. This impact analysis identifies the following two relevant studies.

- *2022 Progress Report, California's Sustainable Communities and Climate Protection Act,* California Air Resources Board (referred to as the Progress Report in the remainder of this document).
- *California Air Resources Board Improved Program Measurement Would Help California Work More Strategically to Meet Its Climate Change Goals,* Auditor of the State of California, February 2021 (referred to as the Audit Report in the remainder of this document).

The Progress Report measures the effect of SB 375, revealing that light-duty VMT and GHG per capita increased in California between 2010 and 2019 and are trending upward. Key metrics in the Progress Report include:

1. Per capita GHG emissions and per capita VMT continue to increase, though more slowly than in the 2018 Progress Report.
2. More Californians are choosing to drive over other options.
3. Home construction is not meeting regional housing needs in numbers, types, and location.

The Audit Report includes a similar finding that VMT and its associate GHG emissions were trending upward through 2018. Per the audit, the state is not on track to achieve 2030 GHG reduction goals, and emissions from transportation have not been declining.

The evidence from these two reports suggests that greater action on the part of the state may be needed to achieve the state's GHG (and VMT) reduction goals. Without further action by the state to discourage vehicle travel (i.e., increase the cost of driving) while reducing the barriers and constraints that prevent more efficient use of vehicles and

greater use of transit, walking, and bicycling, VMT trends are unlikely to reverse. Therefore, VMT impacts would be potentially significant.

Level of Significance Before Mitigation: Impact 5.15-2 would be potentially significant.

Mitigation Measures

Potential VMT reduction strategies contained in the Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity (California Air Pollution Control Officers Association, 2021), referred to as the CAPCOA Handbook, were reviewed for potential application to the updated general plan. While the CAPCOA Handbook includes 28 transportation related strategies that can reduce VMT, not all would be effective in Rio Vista due to the existing and planned land use pattern, transit options, and overall suburban context. Nevertheless, the 20 strategies identified in Table 5.15-4 are applicable and could be incorporated by future developments:

Table 5.15-4: Potential Project-Specific VMT Reduction Measures

CAPCOA Measure ID	Measure	Maximum Potential VMT Reduction (%) [1]
T-1	Increase Residential Density	30
T-2	Increase Job Density	30
T-3	Provide Transit-Oriented Development [2]	31
T-4	Integrate Affordable and Below Market Rate Housing	28.6
T-5	Implement Commute Trip Reduction Program (Voluntary)	4
T-6	Implement Commute Reduction Program (Mandatory)	26
T-7	Implement Commute Trip Reduction Marketing	4
T-8	Provide Ridesharing Program	8
T-9	Implement Subsidized or Discounted Transit Program[3]	5.5
T-10	Provide End-of-Trip Bicycle Facilities	4.4
T-11	Provide Employer-Sponsored Vanpool	20.4
T-12	Price Workplace Parking	20
T-13	Implement Employee Parking Cash-Out	12
T-15	Limit Residential Parking Supply	13.7
T-16	Unbundle Residential Parking Costs from Property Costs	15.7
T-18*	Provide Pedestrian Network Improvement	6.4
T-19*	Construct or Improve a Bike Facility or Boulevard	0.80
T-20*	Expand Bikeway Network	0.50
T-21*	Implement Carshare Program	0.18
T-22*	Implement Bikeshare or Scootershare Program	0.07

Table 5.15-4: Potential Project-Specific VMT Reduction Measures

CAPCOA Measure ID	Measure	Maximum Potential VMT Reduction (%) [1]

Source: Fehr & Peers 2023.

Notes: All measures and maximum reduction percentages are derived from the Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity (California Air Pollution Control Officers Association [CAPCOA], December 2021). However, it is noted that VMT reduction measures are rapidly evolving as new technologies progress. Applicable measures and potential effectiveness may change. Future use of VMT measures and their VMT reduction should be based on supporting evidence and documentation.

Strategies T-18* through T-22* are applicable at the plan/community level rather than the project level. However, due to the larger scale of anticipated future developments such as Brann Ranch, Riverwalk, etc., plan-level strategies are included because they could be applicable strategies for future large development projects in Rio Vista.

1 Per the CAPCOA Handbook, when multiple strategies are proposed, maximum reductions can apply. Refer to the CAPCOA Handbook for additional information regarding incorporation of multiple measures and maximum VMT reduction.

2 This measure is not currently applicable as it requires high frequency transit service exist. Nonetheless, it is included in this table in the event transit service frequency and/or service area is increased in the future and would qualify as high frequency transit. See CAPCOA Handbook for more information regarding qualifying transit service.

When appropriate to the type and scale of the future project, the City can require developers to incorporate the VMT reduction measures listed above or others that may be developed in the future as technology changes to lessen VMT impacts of future projects. Implementation of one or more of the above measures would lessen VMT growth from new projects but likely not to a level sufficient to reduce this impact to less than significant.

Conclusion

The implementation of the proposed project would likely contribute to land use development that generates home-based VMT per resident and home-based work VMT per employee above levels necessary to meet State GHG reduction goals. To lessen VMT impacts, the City will require new land use development projects to reduce VMT through incorporation of feasible VMT reduction strategies. Although larger changes in the proposed project land use element could potentially reduce VMT further, those changes would also affect the achievement of other goals the City seeks to achieve with the General Plan. VMT reduction also depends on factors such as demographic change, household preferences for housing types and locations, the cost of fuel, and the competitiveness of regional transit relative to driving, which are not factors the City can directly control. Therefore, this impact is considered significant and unavoidable.

This impact finding will generally govern future development projects consistent with the general plan. Therefore, the City plans to rely on CEQA Section 15183 to relieve subsequent land use projects consistent with the general plan from having to perform

new VMT analysis if they are consistent with the density and intensity established in the General Plan. Instead, the City will require project developers to identify feasible CAPCOA VMT reduction measures, as identified in Table 5.15-4, to incorporate into the project design to lessen VMT growth.

Level of Significance After Mitigation: Impact 5.15-2 would be significant and unavoidable.

Impact 5.15-3: Implementation of the proposed project would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). [Threshold T-3]

While adoption of the proposed project would not directly result in any physical development projects or construction activities, implementation of the policy framework in the proposed project could result in transportation improvement projects. While these types of improvements could be installed and implemented under the proposed project, they would be intended to facilitate movement throughout Rio Vista and accommodate existing local development, and would therefore be unlikely to introduce conflicts, hazards, or incompatible uses.

All subsequent development under the proposed project, including residential, commercial, and industrial development, in addition to transportation improvement projects, would be subject to and designed in accordance with City standards and specifications that address potential design hazards, including sight distance, driveway placement, and signage and striping. Additionally, any new transportation facilities or improvements to such facilities associated with subsequent projects would be constructed based on industry design standards and best practices consistent with the City Ordinance Code, building design and inspection requirements, and any applicable community-based transportation plans. The City's evaluation of projects' access and circulation will incorporate analysis with respect to City standards for vehicular level of service and queueing, as well as for service to pedestrians, bicyclists, and transit users.

Furthermore, the proposed Circulation and Mobility Element provides additional guidance to help design a sustainable and comprehensive transportation system that is safe and accessible for all users and modes of travel, and the proposed Land Use Element is designed to ensure land uses are compatible.

The following policies included in the proposed project would encourage land use compatibility, help reduce roadway hazards or improve safety:

- **Policy LU-6:** Encourage development in the North Waterfront District to be a mix of uses including residential, commercial, and public park space along the waterfront.
- **Policy LU-8:** Encourage new commercial uses to group into clustered areas or centers containing professional offices, retail sales, and services. Where feasible, clustered development should be located at the major intersections and exclude "strip" commercial development (shallow depth, linear form, parking in front of the building, etc.).
- **Policy LU-9:** Promote pedestrian-oriented retail and mixed-use development in Neighborhood Mixed Use, Downtown, and the Waterfront areas.

Any transportation network modifications associated with the proposed project will comply with applicable design standards and the proposed project's policies and programs related to land use, circulation, and safety. The combination of these standards, policies, and actions reduce the potential for future collisions and decrease the potential harm to people when traveling. Therefore, this impact is considered less than significant.

Level of Significance Before Mitigation: Impact 5.15-3 would be less than significant.

Mitigation Measures

No mitigation measures are required.

Impact 5.15-4: Development associated with the proposed project could result in inadequate emergency access. [Threshold T-4]

Emergency access to individual land use parcels is typically assessed at the project level, and the proposed project contains policies and programs (listed below) to address the needs of emergency responders and requires consultation with the fire and sheriff departments during development review. The Safety Element addresses public safety issues, including emergency preparedness and response, food and inundation hazards, seismic and geologic hazards, fire hazards, hazardous waste and materials, and additional climate-related hazards. In addition to the Safety Element, the City is a participating member in the Solano County Multi-jurisdiction Hazard Mitigation Plan (MJHMP), which focuses on shorter-term actions and more specific mitigation, and enables jurisdictions to better protect lives, property, and natural systems. The proposed project would not interfere or create inconsistencies with this plan, but the plan's

population and employment growth could require updates or modifications to this plan over time.

The proposed project includes several policies and actions that would help to ensure that roadways accommodate emergency access. More specifically, the Circulation and Mobility Element includes Policy MC-1, which requires that during the development review period for new projects, city streets and intersections be evaluated to ensure a level of service (LOS) D is maintained, except for on Main Street and Front Street between Main Street and SR-12 and in the Downtown area, neighborhood areas, and other pedestrian or transit oriented areas, where LOS E is acceptable.

As it relates to emergency vehicle access, emergency vehicles can use vehicle preemption technology (where possible) and sirens to reduce their response times, and they would continue to do so regardless of any roadway capacity modification. Locations that would experience a reduction in vehicular roadway capacity would undergo individual operations analyses to assess the potential impacts to emergency vehicle access, and mitigation measures would be developed as needed to reduce potentially significant impacts.

Additionally, the Safety Element includes the following policies to ensure adequate emergency access is provided:

- **Policy SE-3:** Coordinate with emergency responders to maintain potential evacuation routes, including roadway improvements as needed.
- **Policy SE-6:** Plan for adequate firefighting infrastructure, including water supply and pressure, road and building clearance for firefighting vehicles, and clear and legible street signage throughout the community.

Furthermore, emergency vehicles can use vehicle preemption technology (where possible) and sirens to reduce their response times, and they would continue to do so regardless of any roadway capacity modification. Locations that would experience a reduction in vehicular roadway capacity would undergo individual operations analyses to assess the potential impacts to emergency vehicle access, and mitigation measures would be developed as needed to reduce potentially significant impacts. The proposed project policies would not result in a change or deterioration of emergency access and response times given the population and employment growth projected in Rio Vista. Therefore, this impact is considered less than significant.

Level of Significance Before Mitigation: Impact 5.15-4 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.15.5 Cumulative Impacts

The context of the impact evaluation described in impact discussions 5.15-1 through 5.15-4 are in the cumulative context of the region. As described in these discussions, impacts related to bus transit, bicycle and pedestrian facilities, and roadways in Rio Vista would be less than significant, as would those associated with emergency access (with mitigation) and roadway hazards. Most impacts would require project-specific evaluation to determine whether the project's design is consistent with relevant plans, ordinances, and policies; would create or increase roadway hazards; or result in inadequate emergency access. However, as determined under Impact 5.15-2, impacts associated with per capita regional VMT from the projected development under the proposed project would be significant and unavoidable. Therefore, the impact on VMT would be cumulatively considerable. As such, mitigation measures presented under Impact 5.15-2 are applicable under cumulative conditions as well.

5.15.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: 5.15-1, 5.15-3 and 5.15-4.

Without mitigation, the following impacts would be **potentially significant**:

- **Impact 5.15-2:** Implementation of the proposed project would conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b).

5.15.7 Mitigation Measures

Impact 5.15-2

There are no feasible mitigation measures at the General Plan level.

5.15.8 Level of Significance After Mitigation

Impact 5.15-2

Impacts would be significant and unavoidable, as described above. The potential reductions in VMT from the measures discussed above cannot be accurately quantified, and therefore impacts regarding VMT would remain significant and unavoidable.

5.15.9 References

Association of Bay Area Governments and the Metropolitan Transportation Commission (ABAG & MTC). 2021, October. Plan Bay Area 2050. https://www.planbayarea.org/sites/default/files/documents/Plan_Bay_Area_2050_October_2021.pdf.

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5.16 UTILITIES AND SERVICE SYSTEMS

This section of the Draft Environmental Impact Report (EIR) discusses the current conditions for utility providers, including water, wastewater, stormwater, and solid waste. Impacts associated with the following public service and utility issues are addressed in other sections of this Draft EIR, as listed below.

- Groundwater, water quality, floodzones, levees, and sea-level rise: Section 5.10, *Hydrology and Water Quality*
- Electricity and natural gas infrastructure: Section 5.6, *Energy*

5.16.1 Wastewater Treatment and Collection

5.16.1.1 ENVIRONMENTAL SETTING

Regulatory Background

Federal

Clean Water Act

The Clean Water Act (CWA) of 1972 regulates the discharge of pollutants into watersheds throughout the nation. Under the CWA, the United States Environmental Protection Agency (EPA) sets wastewater standards and makes it unlawful to discharge pollution from a point source into any navigable waterway without obtaining a permit. Point sources include any conveyances, such as pipes and man-made drainage channels, from which pollutants may be discharged.

National Pollutant Discharge Elimination System

The National Pollutant Discharge Elimination System (NPDES) permit program was established as part of the CWA to regulate municipal and industrial discharges to surface waters of the United States. Federal NPDES permit regulations have been established for broad categories of discharges, including point-source municipal waste discharges and nonpoint-source stormwater runoff. NPDES permits generally identify effluent and receiving water limits on allowable connections and/or mass emissions of pollutants contained in the discharge; prohibitions on discharges not specifically allowed under the permit; and provisions that describe required actions by the discharger, including industrial pretreatment, pollution prevention, self-monitoring, and other activities. Wastewater discharge is regulated under the NPDES permit program for direct discharges into receiving waters and by the National Pretreatment Program for indirect discharges to a wastewater (sewage) treatment plant.

Pretreatment standards are pollutant discharge limits which apply to industrial users. The EPA established the National Pretreatment Program and applies three types of standards: 1) general and specific prohibitions; 2) categorical pretreatment standards; and 3) local limits. All three types of standards can be enforced by the EPA, the State, or local government and are typically expressed as numeric limits, narrative prohibitions, and best management practices (BMP).

State

State Water Resources Control Board: General Waste Discharge Requirements

On May 2, 2006, the State Water Resources Control Board (SWRCB) adopted Statewide General Waste Discharge Requirements (Order No. 2006-0003) and a monitoring and reporting program (Order No. WQ-2013-0058-EXEC) for all publicly owned sanitary sewer collection systems in California with more than one mile of sewer pipes. All public agencies that own or operate a sanitary sewer system comprising more than one mile of pipes or sewer lines which convey wastewater to a publicly owned treatment facility must apply for coverage under this order. The order provides a consistent statewide approach to reducing sanitary sewer overflows (SSO).

The Waste Discharge Requirements require public agencies that own or operate sanitary sewer systems to develop and implement Sewer System Management Plans (SSMP) and report all SSOs to the SWRCB's online reporting system. The SWRCB has delegated authority to nine Regional Water Quality Control Boards (RWQCB) to enforce these requirements within their regions. The City of Rio Vista is under the jurisdiction of the Central Valley RWQCB.

The SSMP evaluates existing sewer collection systems and provides a framework for minimizing the frequency and impact of SSOs. The SSMP includes an overflow emergency response plan; a fats, oil, and grease control program; scheduled inspections and condition assessment; design and construction standards; capacity assessment and management; and a monitoring program.

In addition, the RWQCBs issue NPDES permits to wastewater treatment plants (WWTP) within the county. Each NPDES permit has limits on discharge volumes and effluent concentrations, which includes a sampling and monitoring program. RWQCBs are also charged with conducting inspections of permitted discharges and monitoring permit compliance.

Sanitary District Act of 1923

The Sanitary District Act of 1923 (California Health and Safety Code Section 6400 et seq.) authorizes the formation of sanitation districts and enables the sanitation districts to construct, operate, and maintain facilities for the collection, treatment, and disposal of wastewater.

On-Site Wastewater Treatment Systems

The SWRCB implements regulations to reduce the impact of wastewater sources on groundwater quality in accordance with state law (Assembly Bill [AB] 885) through its water quality control policy for siting, design, operation, and maintenance of on-site wastewater treatment systems (OWTS) (i.e., septic systems) (Resolution No. 2012-0032). This policy establishes a statewide, risk-based, tiered approach for the regulation and management of OWTS installations and replacements that have affected or will affect groundwater or surface water to a degree that makes it unfit for drinking water or other uses or causes a health or public nuisance condition. RWQCBs incorporated the standards established in the OWTS policy or standards that are more protective of the environment and public health into their water quality control plans. Implementation is overseen by the SWRCB, RWQCBs, and local agencies (e.g., county and city departments and independent districts).

Regional

Regional Water Quality Control Board

Rio Vista is in the jurisdiction of the Central Valley RWQCB (Region 5). The RWQCB issues and enforces NPDES permits in the city, which includes permits for wastewater treatment plants, water reclamation facilities, and industrial waste discharges. NPDES permits allow the RWQCB to regulate where and how waste is disposed of, including the discharge volume and effluent limits of waste and the monitoring and reporting responsibilities of the discharger. The RWQCB is also charged with conducting inspections of permitted discharges and monitoring permit compliance.

Municipal Service Reviews

Government Code Section 56430 requires the Solano Local Agency Formation Commission (SLAFCO) to prepare municipal service reviews (MSR) for services provided in the county. The purpose is to evaluate the current services and potential impacts to those services from projected future growth. The MSR must be updated every five years, and a current MSR is a prerequisite for a sphere of influence determination or the consideration of annexations.

Solano County Environmental Health Services Division: Local Agency Management Plan

Solano County Environmental Health Services Division adopted a local agency management program (LAMP) to comply with the state's OWTS policy. The LAMP describes how Solano County's OWTS program is in compliance with the State Water Resources Control Board's *Water Quality Control Policy for Siting, Design, Operation, and Maintenance of Onsite Wastewater Treatment Systems*, and applicable Basin Plan policies adopted by the Central Valley and San Francisco Bay RWQCBs. The LAMP describes standards and procedures for reviewing and approving OWTS for individual lots and subdivisions in Solano County. The LAMP demonstrates that the Solano County OWTS regulatory program is protective of public health and the environment by ensuring the proper treatment and disposal of liquid waste through the appropriate siting, design, installation, maintenance, and monitoring of OWTS given the specific geologic, hydrologic, and soil characteristics of Solano County.

The LAMP provides minimum standards and requirements for the treatment and disposal of sewage using on-site septic systems when no connection to a sewer is available. The LAMP allows for OWTS within the County while providing standards that protect water quality and public health. Requirements for new development include siting standards for OWTS near drinking water wells, impaired waterways, sources of groundwater, and other specific land uses. Regulations include minimum lot size, residential density, minimum setback requirements, natural ground slope and percolation, OWTS design specifications, and other criteria. Solano County Environmental Health Services Division is responsible for issuing permits for conventional and alternative treatment systems; reviewing percolation reports and alternative treatment proposals for new and replacement systems in high-risk residential areas and commercial projects; and complying with LAMP reporting requirements.

Local

City of Rio Vista 2001 General Plan

The existing General Plan contains the following policies related to wastewater services from the Public Facilities Element.

Public Facilities Element

Policy 12.6.A: The City shall expand treatment capacity to adequately accommodate projected new growth and the population estimated at the end of the planning period of this General Plan (2020). The City shall develop the new Northwest Wastewater Treatment Plant expansion as soon as financially feasible.

NPDES Permits for Wastewater Treatment Plants

Waste discharge requirements for effluent discharged from various wastewater treatment facilities within the county are set forth in permits issued by the Central Valley RWQCB. NPDES CA0083771 Order R5-2021-0004 sets Waste Discharge Requirements for the City of Rio Vista Northwest Wastewater Treatment Facility (CVRWQCB 2021).

City of Rio Vista Municipal Code

Chapter 13.08: Sewer Service System

This chapter sets forth uniform requirements for users of the publicly owned treatment works (POTW) for the city of Rio Vista and enables the city to comply with all applicable state and federal laws, including the Clean Water and the General Pretreatment Regulations. It provides the authority for the city to condition or deny any and/or all discharges into the city's POTW; authorizes the issuance of wastewater discharge permits; provides for monitoring, compliance, and enforcement activities; establishes administrative review procedures; and requires user reporting.

Existing Conditions

Wastewater Treatment

The City operates two wastewater treatment plants: the Beach Wastewater Treatment Plant located immediately south of the city and the Northwest Wastewater Treatment Plant located adjacent to the Rio Vista Airport (Rio Vista 2022a).

As of 2024, the Beach WWTP processed 0.65 million gallons per day (MGD) of wastewater, and the Northwest WWTP processed approximately 0.4 MGD of wastewater, resulting in a total wastewater volume of 1.06 MGD.

The Beach WWTP has a permitted average dry weather flow (ADWF) capacity of 0.65 MGD. Secondary effluent from the Beach WWTP is discharged through an outfall diffuser to the Sacramento River (Rio Vista 2022a).

The Northwest WWTP is located at 3000 Airport Road and has a permitted ADWF of 1.0 MGD. Current flows to the Northwest WWTP are significantly less than the ADWF, which results in the plant operating at approximately 30 percent of its rated capacity on a typical day. The Northwest WWTP treats flow from the north and west sides of the city, which is generally newer construction and primarily single-family residential land uses. Tertiary effluent produced at the Northwest WWTP is discharged to the Sacramento River approximately two miles to the east. Solids from both the Beach and Northwest WWTPs

are dewatered at the Northwest WWTP. To convey sludge from one plant to the other, sludge is trucked from the Beach to the Northwest WWTP (Rio Vista 2022a).

Since the Northwest WWTP has excess treatment capacity that is not being utilized, the City is planning to treat all the City's wastewater at the Northwest WWTP. This would result in the abandonment of the Beach WWTP and conveyance of all the wastewater from the core area of the city to the Northwest WWTP. Evaluation by the City indicates there is adequate capacity at the Northwest WWTP to treat current and future flows for the entire city. The timing for decommissioning the Beach Treatment Plant will be based on funding, but the City has initiated work and it is anticipated the Beach Treatment Plant will be decommissioned in approximately five years. The Northwest WWTP will require expansion to accommodate all wastewater flows within the city. The overall design of the facility will accommodate expansion up to 2.0 MGD.

Wastewater treatment facilities in the City of Rio Vista are within the jurisdiction of the Central Valley RWQCB. The wastewater generated in the city is collected and conveyed to the Beach WWTP or to the Northwest WWTP by a network of sewer pipelines, force mains, and pump stations. The City owns, operates, and maintains this network of over 41 miles of pipelines (ranging from 6 to 27 inches in diameter) and 10 lift stations. Both of the WWTPs currently have residual capacity to serve the increases in population with future growth in the city. In addition, water conservation efforts, Code requirements for low-flow plumbing fixtures and decreases in per capita water demands will reduce the wastewater generation rates and enable the WWTPs to accommodate future growth.

5.16.1.2 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:

U-1 Require or result in the relocation or construction of new or expanded wastewater treatment facilities, the construction or relocation of which could cause significant environmental effects.

U-2 Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

5.16.1.3 PROPOSED GENERAL PLAN GOALS AND POLICIES

The following goals, policies, and actions from the proposed General Plan are applicable to wastewater treatment and collection systems.

Public Facilities and Services Element

- **Goal PFS-1:** To provide high quality and reliable public facilities and services to members of the community.
- **Goal PFS-2:** To provide public facilities and services in a cost-effective manner.
- **Goal PFS-3:** To ensure public facilities and services will be adequate to serve the community through the year 2045.
- **Goal PFS-4**: To work effectively with outside agencies that provide public facilities and services to the Rio Vista community.
  - **Policy PFS-4:** Decommission the Beach Wastewater Treat Plant facility and complete all improvements necessary for the Northwest Wastewater Treatment Plant to serve the entire City through at least 2045.

5.16.1.4 ENVIRONMENTAL IMPACTS

Impact 5.16-1: The proposed project would not require or result in the relocation or construction of new or expanded wastewater treatment facilities, the construction or relocation of which could cause significant environmental effects. [Threshold U-1]

Buildout of the proposed project would result in an increase in wastewater generation with the addition of 2,467 dwelling units and an increase of 142 acres of non-residential land use. However, as discussed below, future demands from the increased population and land use changes from implementation of the proposed project would not exceed the permitted capacity of the Beach WWTP and Northwest WWTP that serve the city. Wastewater generated by the proposed project would be collected by the City's sewer system and conveyed to the Beach WWTP or Northwest WWTP.

An estimate of the amount of additional wastewater generated by the proposed project was determined, as shown in Table 5.16-1, *Wastewater Demand Increase: Proposed Project*. For both residential and nonresidential development, a weighted average wastewater generation factor was determined based on the fraction of each land use to the total buildout. These wastewater generation numbers are conservative because they do not account for the water conservation measures that new construction would be required to implement to comply with the CALGreen Building Code.

Table 5.16-1 Wastewater Demand Increase: Proposed Project

Category	Increase Due to Proposed Project	Wastewater Generation Factor (Weighted Avg)	Wastewater Generation (gallons per day)
Dwelling Units	2,467 du	300 gpd/du[1]	740,100
Industrial (Non-residential Development)	54 acres	2,000 gpd/acre[2]	108,000
Commercial (Non-residential Development)	88 acres	1,500 gpd/acre[2]	132,000
Total			**980,100 0.98 MGD**

Notes: gpd – gallons per day; du – dwelling unit; MGD – millions of gallons per day
1 The residential wastewater generation factor is based on City Design Standards of 300 gpd/du.
2 The non-residential wastewater generation factor is based on City Design Standards of 1,500 gpd/acre for commercial and 2,000 gpd/acre for industrial.

The increase in wastewater demand with buildout of the proposed project is estimated to be approximately 0.98 MGD. According to the Sewer Master Plan, the average daily flow for the Beach WWTP is approximately 0.51 MGD. An additional 0.21 MGD of flow from the northwestern part of the city is directed to the Northwest WWTP (Rio Vista 2022a). When the 0.98 MGD of wastewater demand from project buildout is combined with the existing average daily flow of 0.72 MGD for the City, the total amount of wastewater generated by the City in 2045 is estimated to be 1.7 MGD.

The Beach WWTP has a permitted ADWF capacity of 0.65 MGD and the Northwest WWTP has a permitted ADWF capacity of 1.0 MGD. However, the City has plans to decommission the Beach Wastewater Treat Plant facility and complete all improvements necessary for the Northwest WWTP to serve the entire city through at least 2045. The City states there is adequate capacity at the Northwest WWTP to treat current and future flows for the entire city. Therefore, for the purposes of this analysis, the EIR evaluates the flow capacity for the Northwest WWTP and considers the combined existing average daily flows for the Beach WWTP and Northwest WWTP.

The Northwest WWTP has a permitted ADWF capacity of 1.0 MGD but once the improvements to the facility are made the overall design of the facility will accommodate up to 2.0 MGD. Therefore, the residual capacity for the Northwest WWTP in 2045 would be 1.28 MGD, which is greater than the additional 0.98 MGD of wastewater that would be generated from buildout of the proposed project.[1] As the Northwest WWTP has adequate

1 Permitted Capacity minus Average Daily Wastewater Flow = Residual Capacity; 2.0 MGD – 0.72 MGD = 1.28 MGD for Northwest WWTP.

capacity for future growth, the City would be able to accommodate future wastewater flows from Rio Vista.

The City imposes sewer connection fees on new development to recover a proportionate share of costs for expanding wastewater collection services and upgrades to the WWTPs. Implementation of the proposed project would not require the construction or expansion of the Beach WWTP and Northwest WWTP, or sewer collection system beyond what is already planned or under construction. Adherence to the City's Municipal Code requirements in Chapter 13.08, as well as the proposed General Plan policies—such as Policy PFS-4, which intends to decommission the Beach WWTP facility and complete all improvements necessary for the Northwest WWTP to serve the entire City through at least 2045—would ensure that the WWTP has adequate capacity to meet wastewater generation demand over time, and therefore impacts associated with the sewer collection and treatment systems would be less than significant.

Level of Significance Before Mitigation: Impact 5.16-1 would be less than significant.

Mitigation Measures

No mitigation measures are required.

Impact 5.16-2: The wastewater treatment provider would have adequate capacity to serve the proposed project's projected demand in addition to the provider's existing commitments. [Threshold U-2]

As described in Impact 5.16-1, once the Beach WWTP is decommissioned, the Northwest WWTP would serve the entire city through at least 2045. The Northwest WWTP will have a permitted ADWF capacity of 2.0 MGD. The residual capacity for the Northwest WWTP at project buildout would be 1.28 MGD. The increase in wastewater demand from 2020 to 2045 is estimated to be 0.98 MGD, as shown in Table 5.16-1, which would result in an estimated total amount of wastewater discharged from the City of 1.7 MGD in 2045.[2]

New development from implementation of the proposed project would be required to comply with the latest CALGreen and California Plumbing codes and implement active and passive water conservation measures. This would reduce wastewater discharge rates below what was calculated in Table 5.16-1. Furthermore, potential future development pursuant to the proposed project would undergo City review. Proposed

2 Wastewater Flows from Proposed General Plan Buildout plus Average Daily Flow to Northwest WWTP = Total Estimated Wastewater Generation; 0.72 MGD + 0.98 MGD = 1.7 MGD (due to rounding).

General Plan Policy PFS-4 would ensure that the WWTP has adequate capacity to meet wastewater generation demand over time.

With continued compliance with applicable regulations, wastewater generated by the proposed project would not exceed the capacity of the Northwest WWTP once the necessary improvements are completed. Therefore, implementation of the proposed project would not result in a determination by the City that there is insufficient capacity to serve the City's future wastewater demands in addition to the demands of existing and future development within the wastewater providers service areas. Therefore, the impacts would be less than significant.

Level of Significance Before Mitigation: Impact 5.16-2 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.16.1.5 CUMULATIVE IMPACTS

The area considered for cumulative impacts to wastewater facilities is the City's wastewater service area. Cumulative population increases and development within the service area would increase the overall regional demand for wastewater treatment service. The Northwest WWTP has a permitted flow capacity of 1.0 MGD and is expected to complete all improvements necessary as the City works to decommission the Beach WWTP to serve the entire City through at least 2045. Once improvements are complete, the Northwest WWTP the overall design of the facility will accommodate up to 2.0 MGD.

Wastewater infrastructure would be expanded with the implementation of the proposed project. Future expansion or upgrades to the wastewater collection system and WWTP are addressed through the City and its Sewer System Management Plan and CIPs, which address deficiencies and constraints identified in the existing system and designed to accommodate future growth. Improvements are funded through the City's sewer connection fees and monthly service charges. Additionally, wastewater from the City's service area that is processed through the WWTP would meet established standards required by the Central Valley RWQCB through the NPDES permit process.

Therefore, with continued compliance with applicable regulations, cumulative development would not exceed wastewater collection or treatment capacities. Accordingly, the proposed project would not result in a cumulatively considerable impact related to wastewater, and cumulative impacts would be less than significant.

5.16.1.6 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Upon implementation of regulatory requirements and standard conditions of approval, all impacts would be less than significant.

5.16.1.7 MITIGATION MEASURES

No mitigation measures are required.

5.16.2 Water Supply and Distribution Systems

5.16.2.1 ENVIRONMENTAL SETTING

Regulatory Background

Federal

Federal Safe Drinking Water Act

The Safe Drinking Water Act, the principal federal law intended to ensure safe drinking water to the public, was enacted in 1974 and has been amended several times since it became law. The Act authorizes the U.S. Environmental Protection Agency (EPA) to set national standards for drinking water, called the National Primary Drinking Water Regulations, to protect against both naturally-occurring and man-made contaminants. These standards set enforceable maximum contaminant levels in drinking water and require all water providers in the United States to treat water to remove contaminants, except for private wells serving fewer than 25 people. In California, the SWRCB conducts most enforcement activities. If a water system does not meet standards, it is the water supplier’s responsibility to notify its customers.

America’s Water Infrastructure Act of 2018

America's Water Infrastructure Act (AWIA), signed into law on October 23, 2018, authorizes federal funding for water infrastructure projects, expands water storage capabilities, assists local communities in complying with the Safe Drinking Water Act and Clean Water Act, reduces flooding risks for rural, western, and coastal communities, and addresses significant water infrastructure needs in tribal communities (USEPA 2023). Additionally, the AWIA requires that drinking water systems that serve more than 3,300 people develop or update risk assessments and emergency response plans. Risk assessments and emergency response plans must be certified by the EPA within the deadline specified by the AWIA.

State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act, which was passed in California in 1969 and amended in 2013, is the basic water quality control law for California. Under this act, the SWRCB has authority over state water rights and water quality policy. The act divided the state into nine regional basins, each under the jurisdiction of a RWQCB to oversee water quality on a day-to-day basis at the local and regional level. RWQCBs engage in a number of water quality functions in their respective regions. They regulate all pollutant or nuisance discharges that may affect either surface water or groundwater. As noted in Section 5.16.1, the city of Rio Vista is in Central Valley RWQCB (Region 5).

SWRCB Division of Drinking Water

The California Division of Drinking Water regulates public water systems within California; oversees water recycling projects; permits water treatment devices; and supports and promotes water system security. The Division of Financial Assistance provides funding opportunities for drinking water system improvements; provides support for small water systems and for improving technical, managerial, and financial capacity; and certifies drinking water treatment and distribution operators. The Field Operations Branch of the Division of Drinking Water is responsible for the enforcement of the federal and California Safe Drinking Water Acts and the regulatory oversight of approximately 7,500 public water systems to ensure the delivery of safe drinking water to all Californians. In this capacity, Field Operations Branch staff perform field inspections, issue operating permits, review plans and specifications for new facilities, take enforcement actions for noncompliance with laws and regulations, review water quality monitoring results, and support and promote water system security.

Urban Water Management Planning Act (Senate Bills 610 and 221)

The California Urban Water Management Planning Act and Section 10620 of the Water Code require that all urban water suppliers in California that provide water to more than 3,000 customers or supply more than 3,000 acre-feet per year (AFY)[3] prepare and adopt an Urban Water Management Plan (UWMP) and update it every five years. The act is intended to support efficient use of urban water supplies. It requires the UWMP to compare water supply and demand over the next 20 years for normal years, single dry years, and multiple dry years and to determine current and potential recycled water uses.

3 One acre-foot is the amount of water required to cover one acre of ground (43,560 square feet) to a depth of one foot.

Senate Bill (SB) 610 and SB 221 were enacted to 1) ensure better coordination between local water supply and land use decisions and 2) confirm that there is an adequate water supply for new development. The following projects that are subject to the California Environmental Quality Act (CEQA) are required at a minimum to prepare a Water Supply Assessment (WSA):

- Residential developments consisting of more than 500 dwelling units.
- Shopping centers or business establishments employing more than 1,000 persons or having more than 500,000 square feet of floor space.
- Commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.
- Hotel or motel, or both, having more than 500 rooms.
- Industrial, manufacturing, or processing plant or industrial park planned to employ more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.
- Mixed-use project that includes one or more of the projects specified above.
- Project that would demand an amount of water equivalent to, or greater than, the amount of water required for 500 dwelling units.

SB 221 requires written verification that there is sufficient water supply available for new residential subdivisions that include over 500 dwelling units. The verification must be provided before commencement of construction for the project.

Mandatory Water Conservation

Following the declaration of a state of emergency on July 15, 2014, due to drought conditions, the SWRCB adopted Resolution No. 2014-0038 for emergency regulation of statewide water conservation efforts. These regulations, which went into effect on August 1, 2014, were intended to reduce outdoor urban water use and persuade all California households to voluntarily reduce their water consumption by 20 percent. Water companies with 3,000 or more service connections were required to report monthly water consumption to the SWRCB. The SWRCB readopted the regulations several times, most recently requiring local water agencies to implement Level 2 drought contingency plans. In March 2023, Governor Newsom announced the lifting of some of the drought restrictions following a wet winter, including the Level 2 demand reduction actions.

However, there are portions of the water conservation emergency regulations that remain in effect. These include prohibiting the following wasteful water use practices: 1) the application of potable water to outdoor landscapes in a manner that causes excess runoff; 2) the washing of vehicles without an automatic shut-off nozzle; 3) the application of

potable water to driveways and sidewalks; 4) the use of potable water in nonrecirculating ornamental fountains; and 5) the application of potable water to outdoor landscapes during and within 48 hours after at least 0.25 inch of rainfall. In addition, watering decorative grass in commercial, industrial, and institutional areas, including common areas of homeowners' associations is currently prohibited but this restriction may be lifted in the future. Urban water suppliers are still required to submit monthly water monitoring reports to the SWRCB.

The Water Conservation Act of 2009 (Senate Bill X7-7)

The Water Conservation Act of 2009, SB X7-7, requires all water suppliers to increase water use efficiency. The legislation sets an overall goal of reducing per capita water use by 20 percent by 2020, with an interim goal of a 10 percent reduction in per capita water use by 2015. Effective in 2016, urban retail water suppliers who do not meet the water conservation requirements established by this bill are not eligible for state water grants or loans. The SB X7-7 requires that urban water retail suppliers determine baseline water use and set reduction targets according to specified standards. Each water purveyor is required under this regulation to report compliance with the SB X7-7 goals in their current and future UWMPs.

2018 Water Conservation Legislation

In 2018, the California Legislature enacted two policy bills (SB 606 and AB 1668) to establish long-term improvements in water conservation and drought planning to adapt to climate change and longer and more intense droughts in California. The Department of Water Resources and the SWRCB set new standards for indoor water use and are in the process of setting standards for outdoor residential water use; commercial, industrial, and institutional water use for landscape irrigation with dedicated meters, and water loss.

Urban water suppliers are required to stay within annual water budgets based on their standards for their service areas, and to calculate and report their urban water use objectives in an annual water use report. Based on recent legislation (SB 1157), the California Water Code defines a 55-gallon-per-person daily standard for indoor residential use until 2025, at which time it decreases to 47 gallons, and further decreases to 42 gallons by 2030.

The legislation also includes changes to UWMP preparation requirements. These changes include additional requirements for water shortage contingency plans, expansion of dry year supply reliability assessments to a five-year drought period, establishment of annual drought risk assessment procedures and reporting, and new

conservation targets referred to “annual water use objectives,” which require retailers to continue to reduce water use beyond the 2020 SB X7-7 targets.

Water Conservation in Landscaping Act of 2006 (AB 1881)

The Water Conservation in Landscaping Act (AB 1881) required the Department of Water Resources (DWR) to update the State of California’s Model Water Efficient Landscape Ordinance (MWELO). Under AB 1881, cities and counties are required to adopt the state’s MWELO or to adopt a different ordinance that is at least as effective in conserving water as the State’s MWELO.

The MWELO was revised in July 2015 via Executive Order B-29-15 to address the ongoing drought and to build resiliency for future droughts. The 2015 revisions to the MWELO increased water efficiency standards for new and retrofitted landscapes through more efficient irrigation systems, greywater usage, and on-site stormwater capture and by limiting the portion of landscapes that can be covered in turf. Each city and county are required to submit annual reports to DWR that document how the agency is achieving compliance with the state MWELO and how many projects were subject to the ordinance during the annual reporting period.

Chapter 17.68, Water Conservation and Landscaping, of the City of Rio Vista’s Municipal Code adopts an ordinance that incorporates updates consistent with the 2015 state MWELO update.

California Water Code

The California Water Code states that the water resources of the state must be put to beneficial use and that waste or unreasonable use of water should be prevented. The code is divided into several sections that include provisions regarding water quality, formation of irrigation districts and water districts, safe drinking water, and water supply and infrastructure improvements.

California Health and Safety Code

A portion of the State Health and Safety Code is dedicated to water issues, including testing and maintenance of backflow prevention devices, coloring of pipes carrying recycled water, and programs addressing cross-connection control by water users.

California Building Code: CALGreen

The California Building Standards Commission adopted the nation's first green building standards in July 2008, the California Green Building Standards Code, also known as CALGreen. CALGreen applies to the planning, design, operation, construction, use, and occupancy of every newly constructed building or structure in California. The code establishes planning and design standards for sustainable site development, including water efficiency and water conservation measures that typically reduce water consumption by 20 percent. CALGreen is updated every three years to allow for consideration and possible incorporation of new low-flow plumbing fixtures and water-efficient appliances. The mandatory provisions of CALGreen became effective January 1, 2011, and the latest version, the 2022 California Green Building Standards Code, became effective on January 1, 2023. The building efficiency standards are enforced through the local building permit process.

California Plumbing Code

The latest version of the California Plumbing Code was issued in 2022 and became effective as of January 1, 2023. The Plumbing Code is updated on a three-year cycle. It specifies technical standards for the design, materials, workmanship, and maintenance of plumbing systems. One of the purposes of the plumbing code is to prevent conflicting plumbing codes within local jurisdictions. Among many topics covered in the code are water fixtures, potable and non-potable water systems, and recycled water systems.

Sustainable Groundwater Management Act of 2014

On September 16, 2014, a three-bill legislative package was signed into law collectively known as the Sustainable Groundwater Management Act (SGMA). The Governor's signing message states "a central feature of these bills is the recognition that groundwater management in California is best accomplished locally." Under the roadmap laid out by the legislation, local and regional authorities in medium and high priority groundwater basins must form groundwater sustainability agencies (GSA) that oversee the preparation and implementation of groundwater sustainability plans (GSP).

The City of Rio Vista is within the Solano Subbasin. The Solano Subbasin is a medium priority basin and is regulated under SGMA (SGMA 2024).

Regional

Solano County Environmental Health Services Division

The Water Protection and Waste Management Program implements County programs in liquid waste, water systems, solid waste disposal, wells, and land use and provides assistance to the public in the planning and implementation. The State Small Water System Program is established to prevent waterborne disease in water wells and surface water through permitting, inspection, and regulation of state small water systems and to ensure that only potable water is provided to water system users. The Solano County Environmental Health Services Division also has the well and septic system program. Goals are to protect surface and groundwater from contamination so that a safe, plentiful supply of drinking water can be obtained and maintained, and to assure that sewage can be and is disposed of in such a manner so as not to create a public health hazard or pollute the environment (SCEHD 2023).

Solano County Water Agency

The Solano County Water Agency (SCWA) has two main functions: water supply and flood control. The water supply function consists of providing wholesale, untreated water supply to cities, districts, and state agencies. Additionally, SCWA leads efforts to protect rights to existing sources of water and participates in efforts to secure new sources of water for water supply reliability and future growth in the county. For flood control, SCWA is responsible for operations and maintenance of the Ulatis Flood Control Project and the Green Valley Flood Control Project. SCWA also has authority to deal with all flood control matters in county boundaries (SCWA 2023).

Solano Subbasin Groundwater Sustainability Plan

As a requirement of SGMA, high- and medium-priority basins must create and implement groundwater sustainability plans. Because the Solano Subbasin is designated a medium-priority basin, a GSP was prepared in 2022 and approved by DWR in January 2024. The GSP was the product of significant collaboration among various water management entities in the subbasin, including the five GSAs that make up the Solano Subbasin GSA Collaborative: the Solano GSA, City of Vacaville GSA, Sacramento County GSA, Solano Irrigation District GSA, and the Northern Delta GSA. The City of Rio Vista is served by the Solano GSA, which is a joint powers agency representing the city of Rio Vista, CITY of Dixon, Solano County, Dixon RCD, Solano RCD, Maine Prairie Water District, Reclamation District (RD) 2068, and associated members from the Solano Farm Bureau, Solano County Agricultural Advisory Committee, and California Water Service.

The purpose of the GSP is to provide a detailed road map for how the Solano Subbasin will achieve and maintain long-term sustainability. The GSP development process primarily included:

- Defining groundwater conditions, identifying data gaps and levels of uncertainty, and developing tools to improve data collection.
- Developing water budgets and sustainable yield estimates, and defining sustainable management criteria, including measurable objectives, minimum thresholds, and undesirable results.
- Establishing projects and management actions to achieve and maintain sustainability and avoid undesirable results.

Local

City of Rio Vista 2020 Urban Water Management Plan

The City of Rio Vista 2020 UWMP covers the management of urban water demands and efficient use of water to protect the people of Rio Vista and their water resources and as guiding criteria in public decisions. Urban water suppliers are required to develop water management plans to actively pursue the efficient use of available supplies (Rio Vista 2022b).

City of Rio Vista Municipal Code

Section 13.04.190: Wasting Water, Procedures and penalties

To eliminate waste of water and reduce the high per capita consumption of water, the City declares that it is unlawful for any person or entity to waste water. This section the procedures and penalties to enforce this regulation such as if waste persists without correction after notice, it will lead to service disconnection and a misdemeanor, punishable by a fine of $25 to $500 or six months in county jail, if determined by the police department.

Chapter 17.68, Water Conservation and Landscaping

The city has adopted the California State Model Water Efficient Landscaping Ordinance (AB 1881) and any subsequent amendments as its law. The MWELO provides for the conservation and protection of water resources through the efficient use of irrigation water; appropriate use of plant materials suitable for climate and location; and regular maintenance of landscaped areas.

The chapter also establishes regulations to for landscaping in order to conserve water ,such as no lawn/garden watering or other outdoor water use will be allowed between 9:00 am and 7:00 pm on any day; users with odd-numbered street addresses shall use outdoor water only on Sundays, Wednesdays, and Fridays; and users with even-numbered street addresses shall use outdoor water only on Saturdays, Tuesdays, and Thursdays.

Existing Conditions

Despite bordering the Sacramento River, water service in Rio Vista is provided entirely from water wells located within the city limits. The Public Works Department manages the contracts for the operation and maintenance of the City's water system. The water for the City of Rio Vista comes from eight wells at various locations within the city. The water distribution system includes over 18 miles of pipe and two reservoir tanks, each with a capacity of two million gallons. According to the Urban Water Management Plan, the City provided 2,025 AFY in 2020 for its entire service area (Rio Vista 2022b).

The City draws its water supply from the Solano subbasin at the southeastern limit of the Sacramento Valley Groundwater Basin. Rio Vista does not import or export surface water supplies currently, and it expects to rely on groundwater through 2045. If necessary, other water supply options are available to the city. Potential supplemental or emergency water sources include the Sacramento River and the North Bay Aqueduct (NBA). An agreement with the Solano County Water Agency, which controls the NBA water in Solano County, allows for access to the NBA supplemental water source. However, because Rio Vista is a significant distance from the NBA facility, it is more likely the City would exchange its rights to that water for additional Sacramento River water if needed. Future water sources may include additional wells, recycled water, the Sacramento River, and purchased water from the Solano County Water Agency (Rio Vista 2022b).

5.16.2.2 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:

U-3 Require or result in the construction of new water facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

U-4 Have insufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years.

5.16.2.3 PROPOSED GENERAL PLAN GOALS AND POLICIES

The following goals, policies, and actions from the proposed General Plan are applicable to water supply and distribution systems.

Open Space and Conservation

- **Goal OSC-3:** To utilize energy and water resources wisely, and to promote conservation programs for lower energy and water consumption in the City.
  - **Policy OSC-7:** Require use of native or compatible non-native plant species that are drought-resistant and water conserving in publicly owned landscape areas.

Public Facilities and Services Element

- **Goal PF-1:** To provide quality and reliable public facilities and services to members of the community.
- **Goal PF-2:** To provide public facilities and services in a cost-effective manner.
- **Goal PF-3:** To ensure public facilities and services will serve the community well through the year 2045.
  - **Policy PF-6:** The City shall ensure that new growth pays for the facilities and services it requires without an additional burden to existing residents. The City shall ensure appropriate funding is provided to construct, operate, and maintain capital facilities.
  - **Policy PF-7:** The Capital Improvement Program (CIP) shall include expansion of facilities to meet increasing demands as the City grows.
  - **Policy PF-8:** Community Facilities Districts (CFDs) shall be utilized to fund required City infrastructure improvements as well as improvements that directly serve and are within development projects.
  - **Policy PF-9:** Give high priority in capital improvement programming to funding rehabilitation or replacement of critical infrastructure that has reached the end of its useful life or has capacity constraints.

5.16.2.4 ENVIRONMENTAL IMPACTS

Impact 5.16-3: Water supply and delivery systems are adequate to meet project requirements. [Threshold U-3]

Buildout of the proposed project would result in an increase in water demand with the addition of 2,467 dwelling units and an increase of 142 acres of non-residential land use. The projected increase in water demand for the proposed project is provided in Table 5.16-2, *Water Demand Increase: Proposed Project*. For both residential and non-residential development, a weighted average water duty factor was determined based on the fraction of each land use in comparison to the total buildout.

Table 5.16-2 Water Demand Increase: Proposed Project

Category	Increase Due to Proposed Project	Water Duty Factor (Weighted Avg)	Water Demand (gallons per day)
Dwelling Units	2,467 du	481 gpd/du [1]	1,186,627
Industrial (Non-Residential Development)	54 acres	2,200 gpd/acre [2]	118,800
Commercial (Non-Residential Development)	88 acres	1,650 gpd/acre [2]	145,200
		Total	**1,450,627 1.45 MGD 1,625 AFY**

Notes: gpd – gallons per day; du – dwelling unit; MGD – millions of gallons per day; AFY – acre-feet per year
1 Residential water use is based on a use factor of 181 gallons/capita/day from the Rio Vista Urban Water Management Plan. Population projections are based on a persons per housing unit ratio of 2.66.
2 The non-residential wastewater generation factor is based on City Design Standards of 1,500 gpd/acre for commercial and 2,000 gpd/acre for industrial. Non-residential water use is estimated to be 110 percent of the total wastewater use.

The increase in water demand with buildout of the proposed project is estimated to be approximately 1.45 MGD or 1,625 AFY. According to the Urban Water Management Plan, the City provided 2,025 AFY in 2020 for their entire service area (Rio Vista 2022b). Therefore, the estimated total water demand from the City in 2045 with the proposed project buildout is estimated to be 3,650 AFY (existing demand of 2,025 AFY plus additional demand of 1,625 AFY).[4]

Additionally, new construction would be required to comply with the water efficient requirements of CALGreen, California Plumbing Code, and the City's MWELO. New construction for both residential and commercial land uses typically achieve a reduction

4 Existing Water Demand plus Water Demand from Proposed General Plan = Total Water Demand; 2,025 AFY + 1,625 AFY = 3,650 AFY.

in water usage rates of 20 percent through compliance with these regulations. Additionally, no credit for the increased use of recycled water for open space and landscaping irrigation was considered in the water demand calculations provided in Table 5.16-2; the use of recycled water would further reduce water demands.

As documented in the UWMP, the City can meet all customers' demands during normal year, single dry year, and multiple dry year conditions with excess water available (Rio Vista 2022b). In addition, the City will continue to partner with Solano County Water Agency to provide efficient and cost-effective water conservation and rebate programs for residents.

Furthermore, future development pursuant to the proposed project would be required to comply with the Proposed General Plan policies. For example, Policy OSC-7 would assist in water conservation and protection of water supply through the requirement of native or compatible non-native plant species that are drought resistant and water conserving in publicly owned landscape areas. Also, new development would be required to implement the water efficient requirements specified in the CALGreen and California Plumbing Codes and the MWELO requirements for water efficient landscaping. Future projects under the proposed project that meet the criteria under California Water Code Section 10912 would be required to prepare a WSA that demonstrates that project water demands would not exceed water supplies. In addition, residential, commercial, and industrial water usage can be expected to decrease in the future as a result of the implementation of the 2018 Water Conservation Legislation that sets new standards for indoor and outdoor residential water use, commercial water use for landscape irrigation with dedicated meters, and water loss standards. Therefore, impacts to water supplies would be less than significant.

Level of Significance Before Mitigation: Impact 5.16-2 would be less than significant.

Mitigation Measures

No mitigation measures are required.

Impact 5.16-4: The proposed project would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years. [Thresholds U-4]

Implementation of the proposed project would have a significant impact if it would result in the construction of new water treatment facilities or the expansion of existing facilities that would have a significant effect on the environment. Buildout of the proposed project would result in an increase in water demand throughout the city due to increases in population and employment.

As described in Impact 5.16-3, the City has sufficient water supplies available under normal, single-dry, and multi-dry year conditions. If the City projects that their future demand could exceed supplies, the City would implement its water shortage contingency plan, which provides water conservation procedures as a result of a drought or supply interruption. Therefore, the proposed General Plan would not significantly impact water supplies.

Future development from implementation of the proposed project could result in new and expanded water infrastructure. However, because the City's 2045 water supply is projected to meet the water demand with implementation of the proposed project, impacts would be less than significant. In addition, each future development under the proposed project would be required to demonstrate the availability of water to serve the development in the form of will-serve letters from the City or for larger projects, preparation of a WSA as required by Section 10910 of the California Water Code. Therefore, implementation of the proposed project would not result in the need to construct additional water supply or distribution systems, nor would it need to relocate existing water treatment facilities.

In summary, new construction or expansion of the water distribution system due to implementation of the proposed project would not significantly impact water treatment facilities or the City's distribution system. The City has a Capital Improvement Program (CIP) that replaces and upgrades the existing water system infrastructure to accommodate future development which is funded through a monthly fee that consumers pay. Additionally, the following policies would ensure that the City's existing water system infrastructure is upgraded and expanded to accommodate future growth:

- **Policy PF-6:** The City shall ensure that new growth pays for the facilities and services it requires without an additional burden to existing residents. The City shall ensure appropriate funding is provided to construct, operate, and maintain capital facilities.
- **Policy PF-7:** The Capital Improvement Program (CIP) shall include expansion of facilities to meet increasing demands as the City grows.
- **Policy PF-8:** Community Facilities Districts (CFDs) shall be utilized to fund required City infrastructure improvements as well as improvements that directly serve and are within development projects.
- **Policy PF-9:** Give high priority in capital improvement programming to funding rehabilitation or replacement of critical infrastructure that has reached the end of its useful life or has capacity constraints.

Compliance with the City's requirements for new construction, water-efficient landscaping, and implementation of the proposed General Plan policies would result in less-than-significant impacts with respect to the need for new and/or expanded water facilities.

Level of Significance Before Mitigation: Impact 5.16-3 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.16.2.5 CUMULATIVE IMPACTS

The area considered for cumulative impacts to water supply services is the City's service area. Existing and future development within the service area would require additional quantities of water. Rio Vista's 2020 UWMP projects population within the service area will increase from 10,000 to 14,850 residents by the year 2045, and the total water demand is expected to increase from 2,025 AFY in the year 2020 to 3,223 AFY in the year 2045. However, the City states that the water supply is currently considered adequate to meet projected water needs through the year 2045. The City's 2020 Urban Water Management Plan demonstrates adequate capacity to accommodate the demand through 2045 through a resilient portfolio that includes recycled water and conservation programs. Overall, long-term trends in groundwater levels are stable in the Solano Subbasin, with some declining levels evident in localized areas in the northwestern part of the subbasin. Furthermore, there is no evidence that groundwater levels are chronically declining in the Solano Subbasin, and they are not expected to do so in the future (Solano Collaborative and Solano County Water Agency 2021).

Other future projects within these service areas would result in increases in water demand. However, cumulative water demands are addressed through the City's UWMP and expansion and upgrades to water infrastructure are addressed through the City's CIP and UWMP. All new development projects would be required to obtain will-serve letters from the City. Projects that meet the SB 610 criteria, such as residential projects with more than 500 dwelling units, would be required to prepare WSAs. The City would review such projects for adequacy of water supply, and the City is required to update the UWMP every five years to ensure that there are adequate water supplies and contingency plans for future residents and customers. All future development under the proposed project would require the implementation of water efficiency and water conservation measures, as per the CALGreen Code and the MWELO irrigation requirements.

All cumulative projects would require compliance with City ordinances, as well as local, State, and federal regulatory requirements. New construction projects and continuing conservation efforts would result in a reduction in per capita water use over time, which would ensure that cumulative impacts with respect to water supply would be less than significant.

5.16.2.6 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Upon implementation of regulatory requirements and standard conditions of approval, all impacts would be less than significant.

5.16.2.7 MITIGATION MEASURES

No mitigation measures are required.

5.16.3 Storm Drainage Systems

5.16.3.1 ENVIRONMENTAL SETTING

Regulatory Background

The regulatory framework for stormwater is described in detail in Chapter 5.10, *Hydrology and Water Quality*, of this Draft EIR. The regulatory requirements that pertain solely to storm drain systems are repeated below.

Federal

National Pollutant Discharge Elimination System

Under the NPDES program, all facilities that discharge pollutants into waters of the United States are required to obtain an NPDES permit. Requirements for stormwater discharges

are also regulated under this program. The county is under the jurisdiction of the Central Valley RWQCB (Region 5) and is subject to the waste discharge requirements of the recently revised Municipal Separate Storm Sewer System (MS4) Permit (Order No. R2-2022-0018), which became effective on July 1, 2022. (CVRWQCB 2023).

State

State Water Resources Control Board General Construction Permit

Construction activities that disturb one or more acres of land must comply with the requirements of the SWRCB Construction General Permit (Order No. 2022-0057-DWQ), which was adopted in September 2022 and is effective as of September 1, 2023. Under the terms of the permit, applicants must file permit registration documents (PRD) with the SWRCB prior to the start of construction. The PRDs include a notice of intent, risk assessment, site map, Storm Water Pollution Prevention Plan (SWPPP), annual fee, and a signed certification statement. The PRDs are submitted electronically to the SWRCB via the Stormwater Multiple Application and Report Tracking System website.

Applicants must also demonstrate conformance with applicable BMPs and prepare a SWPPP containing a site map that shows the construction site perimeter, existing and proposed buildings, lots, roadways, stormwater collection, and discharge points, general topography both before and after construction, and drainage patterns across the project site. The SWPPP must list BMPs that would be implemented to prevent soil erosion and discharge of other construction-related pollutants that could contaminate nearby water resources. Additionally, the SWPPP must contain a weekly visual monitoring program and BMP inspections prior to, during, and after qualifying precipitation events. Water quality monitoring is also required with the schedule based on the risk level of the project site.

State Water Resources Control Board's Trash Amendments

On April 7, 2014, the SWRCB adopted an amendment to the Water Quality Control Plan for Ocean Waters of California to control trash. In addition, the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California added the section, Part 1: Trash Provisions. Together, they are collectively referred to as "the Trash Amendments." The purpose of the Trash Amendments is to provide statewide consistency for the RWQCBs in their regulatory approach to protect aquatic life, protect public health beneficial uses, and reduce environmental issues associated with trash in State waters, while focusing limited resources on high trash-generating areas (SWRCB 2015).

The Trash Amendments apply to all Phase I and II permittees under the NPDES MS4 permits. Compliance with the Trash Amendments requires municipalities to install certified trash treatment control systems on all catch basins no later than December 2, 2030 (SWRCB 2023).

Local

City of Rio Vista Design Standards

These standards provide minimum requirements for the design of storm drainage and related appurtenances within the City of Rio Vista rights-of-way and easements. The design criteria of proposed improvements not included in these standards shall be subject to the approval of the City Engineer.

City of Rio Vista Municipal Code

Chapter 13.20: Storm Water Management

The stormwater management ordinance is intended to protect and promote the health, safety, and general welfare of the citizens of the city by controlling non-storm water discharges. The purpose of the ordinance is to assist in the protection and enhancement of the water quality of watercourses, water bodies, and wetlands in a manner pursuant to and consistent with the Federal Water Pollution Control Act (Clean Water Act, 33 USC, Section 1251 et seq.), Porter-Cologne Water Quality Control Act (California Water Code Section 13000 et seq.), the National Pollutant Discharge Elimination System, and the California General Permit for the Discharge of Storm Water from Small Municipal Separate Storm Sewer Systems.

Chapter 13.24: Grading, Erosion, and Sediment Control

The grading ordinance is enacted for the purpose of regulating grading on property within the city limits to safeguard life, limb, health, property, and the public welfare, and to avoid pollution of watercourses with nutrients, sediments, or other materials generated or caused by surface water runoff in a manner pursuant to and consistent with the Federal Water Pollution Control Act (Clean Water Act, 33 USC, Section 1251 et seq.), Porter-Cologne Water Quality Control Act (California Water Code Section 13000 et seq.), the National Pollutant Discharge Elimination System (NPDES), and the California General Permit for the Discharge of Storm Water from Small Municipal Separate Storm Sewer Systems (MS4).

Chapter 15.16: Flood Hazard Protection

The purpose of the flood hazard protection ordinance is to promote public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas. This chapter outlines methods and provisions for managing flood-related risks and protecting both property and natural flood mitigation systems. These provisions form a comprehensive approach to flood management and risk mitigation.

Chapter 17.34: Floodplain District

The floodway or F-W district is designed to be applied to lands that lie within sloughs and adjacent to areas which are periodically inundated, or which will be inundated by a design flood. The "design flood" shall be specifically defined for each particular development. The purpose of the district is to provide open space to protect natural water courses, drainage ways, and floodways which are necessary to safeguard the health, safety, and welfare of the people who will live in the new neighborhoods to the northwest of the city.

Existing Conditions

Storm drainage in Rio Vista is accomplished through a network of drainage pipes and open swales, all leading to the Sacramento River. The City generally slopes and drains from the northwest to the southeast toward the Sacramento River, draining through Industrial Creek, Marina Creek, and underground storm drains. Industrial Creek is located approximately 500 feet to the north of the Rio Vista Bridge on SR-12. This creek drains through a pipe directly to the Sacramento River. Marina Creek, located at the southern end of the city, flows through the Delta Marina Yacht Harbor and into the Sacramento River.

The existing stormwater infrastructure in Rio Vista comprises several critical components designed to manage and convey stormwater effectively. These components include roads with drainage systems, catch basins, natural channels, creeks, ditches, curbs and gutters, and parking lots and impervious surfaces.

Rio Vista's downtown area presents drainage challenges due to the lack of construction of drainage facilities during historic development. During major storms, the City must pump stormwater into the Sacramento River from Downtown and from the Edgewater neighborhood, resulting in significant ongoing costs to the City.

The SWRCB, as the implementing agency for the Trash Amendments, mandates that all MS4 permittees, which includes the City of Rio Vista, must install certified trash treatment control systems on all catch basins no later than December 2, 2030.

5.16.3.2 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:

U-5 Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

5.16.3.3 PROPOSED GENERAL PLAN GOALS AND POLICIES

The following goals, policies, and actions from the proposed General Plan are applicable to storm drainage systems.

Public Facilities and Services Element

- **Goal PF-1:** To provide quality and reliable public facilities and services to members of the community.
- **Goal PF-2:** To provide public facilities and services in a cost-effective manner.
- **Goal PF-3:** To ensure public facilities and services will serve the community well through the year 2045.
  - **Policy PFS-5:** Require on-site stormwater management system (i.e., “green infrastructure”) design and Low Impact Development (LID) techniques, per the City to improve runoff water quality and decrease runoff volume.
  - **Policy PF-6:** The City shall ensure that new growth pays for the facilities and services it requires without an additional burden to existing residents. The City shall ensure appropriate funding is provided to construct, operate, and maintain capital facilities.
  - **Policy PF-7:** The Capital Improvement Program (CIP) shall include expansion of facilities to meet increasing demands as the City grows.
  - **Policy PF-8:** Community Facilities Districts (CFDs) shall be utilized to fund required City infrastructure improvements as well as improvements that directly serve and are within development projects.
  - **Policy PF-9:** Give high priority in capital improvement programming to funding rehabilitation or replacement of critical infrastructure that has reached the end of its useful life or has capacity constraints.

5.16.3.4 ENVIRONMENTAL IMPACTS

Impact 5.16-5: Existing and/or proposed storm drainage systems are adequate to serve the drainage requirements of the proposed project. [Threshold U-5]

New development and/or redevelopment as part of the proposed project would result in an increase in impervious surfaces, which in turn could result in an increase in stormwater runoff, higher peak discharges to drainage channels, and the potential to cause nuisance flooding in areas without adequate drainage facilities. The Regional MS4 permit defines priority development projects as projects that create 10,000 square feet or more of impervious surfaces or replace 5,000 square feet or more of impervious surface; these projects would be required to implement site design, source control, and stormwater treatment and runoff measures using specific numeric sizing criteria based on the volume and flow rate of stormwater that is generated by the project. Also, the City's Planning Department would apply conditions of approval to each project to ensure that the requirements of the MS4 permit have been met. Compliance with the MS4 permit would minimize increases in the amount of stormwater runoff from future development in the city.

The MS4 permit requires that all projects that generate runoff from an 85th percentile, 24-hour storm event must treat stormwater onsite. Priority development projects must adhere to the hydromodification requirements of the MS4 permit and demonstrate that post-construction runoff flow rates and durations do not exceed pre-development conditions by more than 10 percent. This would minimize the amount of stormwater runoff from new development and redevelopment sites within the city. Also, as part of the permitting process, future development would be required to pay fees to the City, which is designed to mitigate impacts of stormwater discharged to flood control channels and storm drains. Planned improvements to the City's storm drainage system are implemented through the CIP.

Additionally, the following policies would ensure that the City's existing stormwater infrastructure is adequate to serve the drainage requirements as a result of future growth.

- **Policy PFS-5:** Require on-site stormwater management system (i.e., "green infrastructure") design and Low Impact Development (LID) techniques, per the City to improve runoff water quality and decrease runoff volume.

- **Policy PF-6:** The City shall ensure that new growth pays for the facilities and services it requires without an additional burden to existing residents. The City shall ensure appropriate funding is provided to construct, operate, and maintain capital facilities.
- **Policy PF-7:** The Capital Improvement Program (CIP) shall include expansion of facilities to meet increasing demands as the City grows.
- **Policy PF-8:** Community Facilities Districts (CFDs) shall be utilized to fund required City infrastructure improvements as well as improvements that directly serve and are within development projects.
- **Policy PF-9:** Give high priority in capital improvement programming to funding rehabilitation or replacement of critical infrastructure that has reached the end of its useful life or has capacity constraints.

Compliance with the MS4 permit and the proposed General Plan policies and implementation of BMPs and on-site stormwater control measures would ensure that the implementation of the proposed project would not result in significant increases in runoff and would not contribute to the construction of new storm drain facilities or expansion of existing facilities that would cause significant environmental impacts. In addition, the City would continue to repair, rehabilitate, and upgrade the storm drain system through implementation of the CIP. Therefore, impacts with respect to stormwater infrastructure would be less than significant.

Level of Significance Before Mitigation: Impact 5.16-4 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.16.3.5 CUMULATIVE IMPACTS

Cumulative impacts are considered for the Sacramento River Watershed in Solano County. Cumulative projects could result in an incremental increase in impervious surfaces that could increase stormwater runoff and impact existing storm drain facilities. However, all cumulative projects would be required to comply with City or County ordinances, as well as the MS4 permit, which would minimize stormwater runoff.

Development within the watershed would require conformance with State and City regulations that would reduce hydrology and infrastructure construction impacts to less than significant levels. Any new development in the city would be subject to the proposed General Plan policies and City design guidelines, zoning codes, and other applicable City

requirements that reduce impacts related to hydrology and stormwater drainage facilities. More specifically, potential changes related to stormwater flows, drainage, impervious surfaces, and flooding would be minimized by the implementation of stormwater control measures, retention, infiltration, and LID measures and review by the City's Public Works Department to integrate measures to reduce potential stormwater drainage and flooding impacts.

All cumulative projects in unincorporated Solano County and other municipalities within the watershed areas would be subject to similar permit requirements and would be required to comply with various municipal codes and policies and County ordinances, as well as numerous water quality regulations that control construction-related and operational discharge of pollutants in stormwater. The MS4 Permit applies to Solano County, SCWA, and other municipalities within the County to manage stormwater systems and collectively protect water quality. For these reasons, impacts from future development within the watershed areas related to stormwater infrastructure construction are not cumulatively considerable.

In combination with past, present, and reasonably foreseeable projects, proposed implementation of the proposed project would not result in a cumulatively considerable impact to stormwater infrastructure, and cumulative impacts would be less than significant.

5.16.3.6 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Upon implementation of regulatory requirements and standard conditions of approval, all impacts would be less than significant.

5.16.3.7 MITIGATION MEASURES

No mitigation measures are required.

5.16.4 Solid Waste

5.16.4.1 ENVIRONMENTAL SETTING

Regulatory Background

Federal

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act of 1976 (Title 40 of the Code of Federal Regulations, Part 258), contains regulations for municipal solid waste landfills and requires states to implement their own permitting programs incorporating the federal landfill criteria. The federal regulations address the location, operation, design (liners, leachate collection, run-off control, etc.), groundwater monitoring, and closure of landfills.

State

Integrated Waste Management Act

California's Integrated Waste Management Act of 1989 (AB 939) set a requirement for cities and counties to divert 50 percent of all solid waste from landfills as of January 1, 2000, through source reduction, recycling, and composting. The act required that each city and county prepare a source reduction and recycling element to be submitted to the Department of Resources Recycling and Recovery (CalRecycle), a department within the California Natural Resources Agency. AB 939 also established a goal for all California counties to provide at least 15 years of ongoing landfill capacity.

In 2007, SB 1016 amended AB 939 to establish a per capita disposal measurement system. The per capita disposal measurement system is calculated as a jurisdiction's reported total disposal of solid waste divided by a jurisdiction's population. CalRecycle sets a target per capita disposal rate for each jurisdiction. Each jurisdiction must submit an annual report to CalRecycle with an update of its progress in implementing diversion programs and its current per capita disposal rate.

California Solid Waste Reuse and Recycling Access Act of 1991

The California Solid Waste Reuse and Recycling Access Act (AB 1327) requires development projects to set aside areas for collecting and loading recyclable materials. The act required CalRecycle to develop a model ordinance for adoption by any local agency relating to adequate areas for collection and loading of recyclable materials as part of development projects. Local agencies are required to adopt the model or an

ordinance of their own governing adequate areas in development projects for collection and loading of recyclable materials.

California Short-Lived Climate Pollutants Act (Senate Bill 1383)

SB 1383 focuses on the elimination of methane gas created by organic materials in landfills and sets targets to achieve a 50 percent reduction in the statewide disposal of organic waste by 2020 and a 75 percent reduction by 2025. It also set a goal to rescue at least 20 percent of currently disposed edible food by 2025 and redirect that food to people in need. Organic waste makes up half of what Californians send to landfills. SB 1383 requires all businesses and residents to divert organic materials (including food waste, yard waste, and soiled paper products) from the landfill. The regulation took effect on January 1, 2022, and requires that organics collection service be provided to all residents and businesses.

Mandatory Commercial Recycling Act (Assembly Bill 341)

Assembly Bill 341 (Chapter 476) increases the statewide solid waste diversion goal to 75 percent by 2020 and mandates recycling for businesses producing four or more cubic yards of solid waste per week or multifamily residential dwellings of five or more units. AB 341 is designed to reduce greenhouse gas emissions in the state by 5 million metric tons of carbon dioxide equivalence. Mount Diablo Resource Recovery provides businesses and property owners with composting and recycling services in the City of Rio Vista.

Mandatory Organics Recycling Act (Assembly Bill 1826)

AB 1826, which was enacted in 2014 and took effect in 2016, mandates organic waste recycling for businesses and multifamily dwellings with five or more units. Starting January 1, 2020, all generators of two cubic yards or more of garbage, recycling, and compost combined per week must recycle organic waste. Organic waste includes food scraps, food-soiled paper waste, yard trimmings, and landscape materials. Organic waste can be recycled through composting, mulching, and anaerobic digestion, which produces renewable energy and fuel. In addition to recycling food scraps, donating surplus food to local food banks can be part of the AB 1826 compliance effort. Multifamily dwellings do not need to have food-waste recycling on-site but must recycle yard and landscape materials. Mount Diablo Resource Recovery offers these services to businesses and residents to comply with the requirements of AB 1826.

CALGreen Building Code

The latest 2022 CALGreen Code became effective on January 1, 2023. Section 5.408, Construction Waste Reduction Disposal and Recycling, mandates that, in the absence of a more stringent local ordinance, a minimum of 65 percent of non-hazardous construction and demolition debris must be recycled or salvaged. The code requires applicants to prepare and submit a Construction and Demolition Recycling & Waste Reduction Plan, which is submitted to the City for approval. For on-site sorting of construction debris, which is submitted to the City for approval. The plan must:

- Identify the materials to be diverted from disposal by recycling, reuse on the project, or salvage for future use or sale.
- Specify if materials will be sorted on-site or mixed for transportation to a diversion facility.
- Identify the diversion facility where the material collected will be taken.
- Supply weight tags for the entire period of the project for compliance review.

Regional Regulations

Solano County Environmental Health Services Division

Solano County Environmental Health Services Division is the local enforcement agency for the landfills in Solano County and is certified by CalRecycle to regulate landfills, transfer stations, and composting sites and administer the solid waste collectors in the county areas. Solano County Environmental Health Services Division conducts inspections of landfills and other regulated facilities to verify they comply with their permit conditions.

Local

City of Rio Vista Municipal Code

Chapter 8.12: Waste Collection and Reduction

The purpose of this chapter is to set the terms and conditions by which solid waste, including garbage, organic waste, and recyclable collection services, may be administered, and to promote the public health, welfare, and safety of the community by establishing reasonable regulations relating to the storage, accumulation, collection, and disposal of such materials.

Existing Conditions

Solid Waste Collection and Recycling

Disposal of solid waste is a service managed by the City and provided by contracted vendors. As of 2022, the City contracted with Mount Diablo Resource Recovery for solid waste disposal services. The City of Rio Vista currently has a franchise with Rio Vista Sanitation Service to provide curbside recycling to the residents of Rio Vista.

Landfills

Non-hazardous solid waste from the city is disposed of at 12 landfills, with the Potrero Hills Landfill receiving approximately 76 percent of all landfilled waste (CalRecycle 2019a). The following landfills also receive solid waste from the City:

- Altamont Landfill & Resource Recovery
- Fink Road Landfill
- Foothill Sanitary Landfill
- Forward Landfill, Inc.
- Keller Canyon Landfill
- L and D Landfill
- North County Landfill & Recycling Center
- Recology Hay Road
- Sacramento County Landfill (Kiefer)
- Vasco Road Sanitary Landfill
- Yolo County Central Landfill

The Potrero Hills Landfill is permitted for a maximum throughput of 4,330 tons per day (TPD), has a remaining capacity of approximately 13.8 million cubic yards as of January 1, 2006, and an estimated closure date of February 14, 2048 (CalRecycle 2019b). The landfill receives approximately 3,657 TPD per day and has a residual daily capacity of 673 TPD (CalRecycle 2023).[5] Landfills are subject to regular inspections from CalRecycle, Solano County Department Environmental Health Services, the RWQCB, and the Bay Area Air District.

Compliance with AB 939 is measured in part by comparing actual disposal rates for residents and employees to target rates; actual rates at or below target rates are consistent with AB 939. Target disposal rates for Rio Vista in 2023 were 9.7 pounds per day (ppd) per resident and 39.7 ppd per employee; actual disposal rates were 4.4 ppd per resident and 23.8 ppd per employee (CalRecycle 2023). Therefore, the solid waste diversion goals for the City of Rio Vista have been met.

5 The landfill received 1,141,000 tons of waste in 2023 and is assumed to operate 312 days per year.

5.16.4.2 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:

U-6 Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.

U-7 Not comply with federal, State, and local management and reduction statutes and regulations related to solid waste.

5.16.4.1 PROPOSED GENERAL PLAN GOALS AND POLICIES

The following goals, policies, and actions from the proposed General Plan are applicable to solid waste disposal systems.

- **Goal ED-1:** A vibrant community that serves and attracts visitors, residents, and businesses.
- **Goal ED-2:** A business climate that enables and promotes the expansion of existing businesses and the attraction of new businesses.
- **Goal ED-3:** Increased employment in Rio Vista, and an educated, skilled, and competitive workforce in line with current future jobs in the City.

There are no applicable policies relating to solid waste disposal systems in the Proposed General Plan.

5.16.4.2 ENVIRONMENTAL IMPACTS

Impact 5.16-6: Existing and/or proposed facilities would be able to accommodate project-generated solid waste. [Threshold U-6]

Under the proposed General Plan, the population is anticipated to increase by 8,039 residents and approximately 776 jobs are projected to be generated. As shown in Table 5.16-3, *Solid Waste Increase: Proposed Project,* this projected growth would result in an increase in solid waste of approximately 27 tons/day or 9,855 tons/year. These numbers are conservative because, with continued recycling and waste reduction programs implemented by the City and Mount Diablo Resource Recovery, the waste generation rates would be reduced over time.

Table 5.16-3 Solid Waste Increase: Proposed Project

Category	Increase Due to Proposed Project	Solid Waste Generation Rate (ppd)	Increase in Solid Waste (tons per day)	Increase in Solid Waste (tons per year)
Residents	8,039	4.4	18	6,570
Jobs	776	23.8	9	3,285
		Total	**27**	**9,855**

CalRecycle 2023; PlaceWorks 2023.
Notes: ppd – pounds per day

The increase of 27 tons per day with buildout of the proposed project, as shown in Table 5.16-3, would be about 4.0 percent of the current residual capacity of 673 tons/day at Potrero Hills Landfill.[6] This estimate conservatively assumes that all the generated waste is landfilled. In addition, approximately 24 percent of the solid waste from the City of Rio Vista is transported to other landfills in Solano County and northern California, and a portion of the waste generated in the city is diverted from landfill disposal through recycling and composting. Although CalRecycle does not provide the recycling rate for Rio Vista, California as a whole diverted 42 percent of total waste in 2020 (CalRecycle 2021). As such, the proposed project would not generate solid waste in excess of the capacity of the landfills that serve the city.

With continued compliance with the applicable regulations, leading to increased recycling and waste diversion, anticipated rates of solid waste disposal from the proposed project would be less than significant with respect to permitted landfill capacity. In addition, the City is below the CalRecycle target disposal rates of 9.7 ppd for residents and 39.7 ppd for employees and meets the regulatory requirements of AB 939.[7] Therefore, implementation of the proposed project would not generate solid waste in excess of State and local standards, or in excess of the capacity of the landfills, or otherwise impair the attainment of solid waste reduction goals, and the impact is less than significant.

Level of Significance Before Mitigation: Impact 5.16-5 would be less than significant.

Mitigation Measures

No mitigation measures required.

6 27 tons per day divided by 673 tons per day = 0.040 = 4.0 percent.
7 In 2023, Rio Vista's disposal rates were 4.4 ppd per resident and 23.8 ppd per employee (CalRecycle 2019c).

Impact 5.16-7: The proposed project would comply with federal, State, and local statutes and regulations related to solid waste. [Threshold U-7]

As discussed under Impact 5.16-6, Mount Diablo Resource Recovery and the City of Rio Vista comply with all state requirements to reduce the volume of solid waste through recycling and organic waste diversion. The City's per capita disposal rates of 4.4 ppd per resident and 23.8 ppd per employee are below the CalRecycle targets of 9.7 ppd for residents and 39.7 ppd for employees. In addition, all potential future development pursuant to the proposed project would comply with Division 4.4, Material Conservation and Resource Efficiency, of the CALGreen Building Code, which requires that at least 65 percent of nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse.

Potential future development would also comply with AB 341, which mandates recycling for commercial and multifamily residential land uses as well as schools and school districts. All jurisdictions in California are required to provide organic waste collection services to all residents and businesses, beginning in 2022 and in accordance with SB 1383. The City and Mount Diablo Resource Recovery currently comply with all applicable federal, state, and local solid waste regulations, and solid waste, recycling, and green waste collection services are available to all residents and commercial businesses in Rio Vista. Therefore, the proposed project would comply with all current and future regulatory requirements, and impacts would be less than significant.

Level of Significance Before Mitigation: Impact 5.16-6 would be less than significant.

Mitigation Measures

No mitigation measures required.

5.16.4.3 CUMULATIVE IMPACTS

Cumulative impacts are considered for the service area of the Potrero Hills Landfill. Cumulative projects would result in increased generation of solid waste that would need to be processed at the landfill. The Potrero Hills Landfill has a daily maximum throughput of 4,330 TPD, a remaining capacity of approximately 13.8 million cubic yards, and an estimated closure date of February 14, 2048. In addition to the Potrero Hills Landfill, 11 additional regional landfills are available for disposal in Solano County. As reported by the California Department of Finance, the total population of Solano County is expected to increase from 442,679 to 485,713 by 2045 (CDF 2024). Assuming that solid waste generation increases at the same rate as the population (9 percent), the increase in the

amount of waste generated in Solano County by 2045 would be about 3,986 TPD. Conservatively assuming that all of this waste is landfilled, the additional waste generated by Solano County, including the waste generated by Rio Vista with the proposed General Plan buildout, would be about 4.0 percent of the daily capacity of Potrero Hills Landfill.[8]

5.16.4.4 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Upon implementation of regulatory requirements and standard conditions of approval, all impacts would be less than significant.

5.16.4.5 MITIGATION MEASURES

No mitigation measures are required.

8 (2045 Solano County waste generation plus Proposed General Plan waste generation) divided by Maximum Landfill Capacity = Landfill Capacity Percent; (3,986 TPD + 27 TPD) / 4,330 TPD = 93 percent.

5.16.5 References

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5.17 WILDFIRE

This section of the DEIR evaluates the potential for implementation of the proposed project to exacerbate wildfires in the City of Rio Vista. Cumulative impacts related to wildfire are based on Fire Hazard Severity Zones (FHSZ) mapped by the California Department of Forestry and Fire Protection (CAL FIRE).

5.17.1 Environmental Setting

5.17.1.1 REGULATORY BACKGROUND

Federal

National Cohesive Wildfire Management Strategy

In the Federal Land Assistance, Management, and Enhancement Act of 2009 (FLAME Act), Congress mandated the development of a National Cohesive Wildland Fire Management Strategy for all lands in the United States. Wildfire management is guided by the National Cohesive Wildland Fire Management Strategy, which has three primary goals—resilient landscapes, fire-adapted communities, and safe and effective wildfire response. These three goals enable land managers to manage vegetation and fuels; protect homes, communities, and other values at risk; manage human-caused ignitions; and effectively and efficiently respond to wildfires. California is part of the Western Regional Strategy Committee, chartered to support and facilitate the implementation of the National Cohesive Wildland Fire Strategy.

National Fire Protection Association Standards

National Fire Protection Association (NFPA) codes, standards, recommended practices, and guides are developed through a consensus standards development process approved by the American National Standards Institute. NFPA standards are recommended (advisory) guidelines for fire protection that are referenced in the California Fire Code, which is adopted by Contra Costa County every three years. Specific standards applicable wildland fire hazards include, but are not limited to:

- **NFPA 1141,** Fire Protection Infrastructure for Land Development in Wildlands
- **NFPA 1142,** Water Supplies for Suburban and Rural Fire Fighting
- **NFPA 1143,** Wildland Fire Management
- **NFPA 1144,** Reducing Structure Ignition Hazards from Wildland Fire
- **NFPA 1710,** Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations

State

California Department of Forestry and Fire Protection

CAL FIRE is dedicated to the fire protection and stewardship of over 31 million acres of California's wildlands. CAL FIRE provides fire assessment and firefighting services for land in State Responsibility Areas (SRA), conducts educational and training programs, provides fire planning guidance and mapping, and reviews general plan safety elements to ensure compliance with State fire safety requirements. CAL FIRE staff, or a designee, also reviews building permit applications, parcel maps, and use permits for construction or development in SRAs and Local Responsibility Areas.

The Board of Forestry and Fire Protection is a government-appointed approval body within CAL FIRE. It is responsible for developing the general forest policy of the state, determining the guidance policies of CAL FIRE, and representing the state's interest in federal forestland in California. The Board of Forestry and Fire Protection also promulgates regulations and approves general plan safety elements that are adopted by local governments for compliance with State statutes.

The California Office of the State Fire Marshal supports the mission of CAL FIRE by focusing on fire prevention. These responsibilities include regulating buildings in which people live, congregate, or are confined; controlling substances and products that may, in and of themselves or by their misuse, cause injuries, death, and destruction by fire; providing statewide direction for fire prevention in wildland areas; regulating hazardous liquid pipelines; developing and renewing regulations and building standards; and providing training and education in fire protection methods and responsibilities. These are accomplished through major programs, including engineering, education, enforcement, and support from the Board of Forestry and Fire Protection.

Together, the Board of Forestry and Fire Protection, Office of State Fire Marshal, and CAL FIRE protect and enhance the forest resources of all wildland areas of California that are not under federal jurisdiction.

Fire Hazard Severity Zones and Responsibility Areas

CAL FIRE designates FHSZs as authorized under California Government Code Sections 51175 et seq. FHSZs may be designated Very High, High, or Moderate. CAL FIRE considers many factors when designating fire severity zones, including fire history, existing and potential vegetation fuel, flame length, blowing embers, terrain, and weather

patterns for the area. CAL FIRE designates FHSZ in two types of areas depending on which level of government is financially responsible for fire protection:

- **LRA: Local Responsibility Area.** Incorporated communities are financially responsible for wildfire protection.
- **SRA: State Responsibility Area.** CAL FIRE and contracted counties are financially responsible for wildfire protection.

CAL FIRE Strategic Plans

CAL FIRE produced the *2018 Strategic Fire Plan for California*, which contains goals, objectives, and policies to prepare for and mitigate the effects of fire on California's natural and built environments. The *2018 Strategic Fire Plan for California* focuses on fire prevention and suppression activities to protect lives, property, and ecosystems (State Board of Forestry and Fire Protection and CAL FIRE 2018). In addition, CAL FIRE provides regulatory oversight to enforce state fire laws and delivers a land use planning and defensible space inspection program to local governments across the state (CAL FIRE 2019).

The California Strategic Plan is implemented through individual "unit plans" that are prepared for different regions of the state. CAL FIRE's fire suppression operations are organized into 21 geographic units that follow county lines. CAL FIRE has adopted a Sonoma-Lake Napa Unit Fire Plan that covers Solano County. The unit plan sets forth the agency's priorities for the prevention, protection, and suppression of wildfires. The overall goal of the Sonoma-Lake Napa County Unit Fire Plan is to reduce total costs and losses from wildland fire in the unit by protecting assets at risk through focused, prefire management prescriptions, increasing initial attack success.

2021 California's Wildfire and Forest Resilience Action Plan

The Governor's Forest Management Task Force developed California's Wildfire and Forest Resilience Action Plan, which is a framework for establishing healthy and resilient forests that can withstand and adapt to wildfire, drought, and climate change. The Wildfire and Forest Resilience Action Plan accelerates efforts to restore the health and resilience of California's forests, grasslands, and natural places; improves the fire safety of communities; and sustains the economic vitality of rural forested areas. CAL FIRE, in partnership with the US Forest Service, intends to scale up forest thinning and prescribed fire, integrate climate adaptation into the statewide network of regional forest and community fire resilience plans, improve the electricity grid resilience, and promote sustainable land use.

Public Resources Code Sections 4291 and 4442

Public Resources Code Section 4291 is intended for any person who owns, leases, controls, operates, or maintains a building or structure in a mountainous area, forest-covered lands, shrub-covered lands, grass-covered lands, or land that is covered with flammable material, regardless of whether the property is in an SRA or Very High FHSZ. This section requires the following:

- Develop and maintain defensible space within 100 feet of each side of a structure. Fuels shall be maintained and spaced in a condition so that a wildfire burning under average weather conditions would be unlikely to ignite the structure.
- An ember-resistant zone within 5 feet of a structure.
- A more intense fuel reduction between 5 and 30 feet of a structure.
- Remove portions of trees that extend within 10 feet of a chimney or stovepipe.
- Maintain trees, shrubs, and other plants adjacent or overhanging a building free of dead or dying wood.
- Maintain the roof of structures free of leaves, needles, or other vegetative materials.

Section 4442 regulates the use of internal combustion engines that use hydrocarbon fuels on land covered with forest, brush, and grass. Internal combustion engines, like those used in construction and maintenance, must be equipped with a spark arrester, which is a device used for removing and retaining carbon and other flammable particles from the exhaust flow. These engines must be maintained in effective working order or be constructed, equipped, and maintained for the prevention of fire.

State Responsibility Area and Very High FHSZ Fire Safe Regulations

California Code of Regulations (CCR) Title 14, Division 1.5, Chapter 7, Subchapter 2, SRA/Very High FHSZ Fire Safe Regulations, establishes minimum wildfire protection standards for construction and development in the SRA and Very High FHSZs and requires CAL FIRE to review development proposals and enact recommendations that serve as conditions of approval in these zones. These regulations apply to all residential, commercial, and industrial buildings, and all tentative and parcel maps in the SRA and Very High FHSZs. These standards include basic emergency access and perimeter wildfire protection measures, signing and building numbering, private water supply resources for emergency fire use, and vegetation modification. Fire Safe Regulations also include a minimum setback of 30 feet for all buildings from property lines and/or the center of a road. Section 1273.08, Dead-End Roads, of these standards provides regulations for the maximum lengths of single-access roadways:

- Parcels zoned for less than one acre: 800 feet
- Parcels zoned for 1 acre to 4.99 acres: 1,320 feet
- Parcels zoned for 5 acres to 19.99 acres: 2,640 feet
- Parcels zoned for 20 acres or larger: 5,280 feet

Fire Safe Regulations, Section 1299.03, Fire Hazard Reduction Around Buildings and Structure Requirements, provides defensible space requirements for areas within 30 feet of a structure (Zone 1) and between 30 and 100 feet from a structure (Zone 2). In Zone 1, all dead and dying plants must be removed, as must any vegetation that could catch fire. In Zone 2, horizontal and vertical spacing among shrubs and trees must be created and maintained.

California Building Standards Code

The California Buildings Standards Code (CCR Title 24) encompasses 12 different codes for construction and buildings in California. This code is updated every three years, with the most recent version effective January 1, 2023. The City of Rio Vista regularly adopts the most recent version of the California Building Standards Code, with modifications, into the City of Rio Vista Municipal Code, Title 15, Buildings and Construction.

The California Building Code (CBC), Part 2 of CCR Title 24, identifies building design standards, including those for fire safety. It is effective statewide, but a local jurisdiction may adopt more restrictive standards based on local conditions under specific amendment rules prescribed by the State Building Standards Commission. Residential, commercial, and industrial buildings are plan-checked by local city building officials for compliance with the CBC and any applicable local edits. Typical fire safety requirements of the CBC include the installation of fire sprinklers in buildings and other facilities; requirements for smoke and fire barriers in building materials; requirements for smoke-detection systems; and exiting requirements.

California Fire Code

The CFC incorporates by adoption the International Fire Code of the International Code Council, with California amendments. This is the official fire code for the state and all political subdivisions. It is found in 24 CCR Part 9, and like the CBC is revised and published every three years by the California Building Standards Commission. Also like the CBC, the CFC is effective statewide, but a local jurisdiction may adopt more restrictive standards based on local conditions. The CFC includes provisions and standards for emergency planning and preparedness, fire service features, fire protection systems, hazardous materials, fire flow requirements, and fire hydrant locations and distribution.

Typical fire safety requirements include installation of sprinklers in all buildings; the establishment of fire resistance standards for fire doors, building materials, and particular types of construction; and the clearance of debris and vegetation within a prescribed distance from occupied structures in wildfire hazard areas.

Chapter 33 of the CFC provides requirements for fire safety precautions during construction and demolition of a project. The purpose is to provide reasonable safety to life and property from fire during construction and demolition operations, including those in underground locations. Specific requirements include a prohibition on smoking on-site except in approved areas and management of combustible materials and debris, cutting and welding, electrical wiring, and cooking. Chapter 33 also includes several requirements to ensure access for firefighting personnel and equipment, means of egress for buildings, and water supply for fire protection. Other requirements include requiring landowners or an authorized agent to prepare a site safety plan prior to building permit issuance; provide a fire watch during nonworking hours for new construction exceeding 40 feet in height; and provide a water supply for fire protection as soon as combustible materials arrive on the site.

Governor's Office of Land Use and Climate Innovation's Fire Hazard Technical Advisory

LCI (formerly the Governor's Office of Planning and Research) published the Fire Hazard Technical Advisory in 2015 and revised it in 2022 as a planning guide for addressing fire hazards, reducing risk, and increasing resilience across California's diverse communities and landscapes. The guide provides a range of goals, policies, and programs for fire hazard prevention and mitigation, disaster preparedness, and emergency response and recovery. The 2022 update includes specific land use strategies to reduce fire risk to buildings, infrastructure, and communities.

California Public Utilities Commission

In 2007, wildfires in southern California were ignited by overhead utility power lines and aerial communication facilities near power lines. In response, the California Public Utilities Commission began considering and adopting regulations to protect the public from fire hazards posed by overhead power lines and nearby aerial communication facilities. The commission published a fire threat map—under Rulemaking 15-05-006, following procedures in Decision 17-01-009, revised by Decision 17-06-024—that adopted a work plan for the development of a utility high-fire-threat district where enhanced fire safety regulations in Decision 17-12-024 apply (CPUC 2024). The fire regulations require electrical utilities to:

- Prioritize the correction of safety hazards.
- Correct nonimmediate fire risks in “Tier 2” (elevated fire threat) areas in the high fire-threat district within 12 months, and in “Tier 3” (extreme fire threat) areas within 6 months.
- Maintain increased clearances between vegetation and power lines in the high fire-threat district.
- Maintain stricter wire-to-wire clearances for new and reconstructed facilities in Tier 3 areas.
- Conduct annual inspections of overhead distribution facilities in rural areas of Tier 2 and Tier 3 areas.
- Prepare a fire prevention plan annually if overhead facilities exist in the high fire-threat district. (CPUC 2017)

Regional

Solano County Multi-Jurisdiction Mitigation Plan

In collaboration with the City of Rio Vista and other local agencies and special districts, the County of Solano prepared the 2022 MJHMP in accordance with the federal Disaster Mitigation Act of 2000 and the Federal Emergency Management Agency’s (FEMA) hazard mitigation assistance guidance. The MJHMP is a countywide plan that identifies hazards, reviews and assesses past disaster occurrences, estimates the probability of future occurrences, and sets goals to reduce or eliminate long-term risk to people and property from natural and man-made hazards.

The mitigation actions in the MJHMP include both short-term and long-term strategies and involve planning, policy changes, programs, projects, and other activities. These mitigation actions are identified based on assessments of hazards, vulnerabilities, and risks and the participation of a wide range of stakeholders and the public in the planning process. Local governments are required to develop a hazard mitigation plan as a condition for receiving certain types of emergency disaster assistance and funding. The plan must be updated and adopted by FEMA and the County every five years. The 2022 MJHMP was approved by FEMA in December 2021 and adopted by the City Council in March 2022.

Local

City of Rio Vista 2001 General Plan

The existing General Plan contains the Resource Conservation and Management Element and the Safety and Noise Element, which include the following policies related to wildfire (Rio Vista 2001):

Resource Conservation and Management Element

- **Policy 10.11.F:** The City shall require new development to incorporate sound soil conservation practices and minimize land alterations and shall comply with the following guidelines
  - Limit grading to the smallest practical area of land.
  - Limit land exposure to the shortest practical amount of time.
  - Use erosion and sediment control measures, including temporary vegetation sufficient to stabilize disturbed areas.
  - Replant graded areas to ensure establishment of plant cover before the next rainy season.
  - Create grading contours that blend with the natural contours onsite or with contours on property immediately adjacent to the area of development.
  - Ensure that development near or on portions of hillsides does not cause or worsen natural hazards, such as erosion, sedimentation, increased risk of fire, or degraded water quality.
  - Maintain the character and visual quality of the hillside.

Safety and Noise Element

- **Policy 11.15.A:** The City shall continue to pursue fire prevention programs and standards.
- **Policy 11.5.C:** The City shall require that timing of construction of fire stations be phased to be ready to serve development as it occurs.
- **Policy 11.5.D:** The City shall monitor fire department service levels annually concurrent with the City budget process.

City of Rio Vista Municipal Code

Chapter 8.24: Weed and Rubbish Abatement

The city council declares that all weeds growing upon private property or streets in the city and all rubbish on private property or streets in the city are public nuisances, except for properties being exclusively or primarily used for agricultural purposes are excluded. It shall be the duty of every such person to remove or destroy such weeds and/or rubbish.

5.17.1.2 EXISTING CONDITIONS

Wildfire Background

"Wildfire" refers to a fire that usually results from the ignition of dry grass, brush, or timber. Historically, wildfires commonly occurred in steep or heavily vegetated areas, which makes suppression difficult. More recently, wildfires have encroached into more urban areas, that is, the wildland-urban interface (WUI), threatening homes, businesses, and essential infrastructure. Though wildfires play an important role in the ecology of many natural habitats, risks to human safety and property increase as urban development moves into areas susceptible to wildfire hazards. The following paragraphs summarize wildfire, the causes of wildfire, and the secondary effects of wildfires.

Types of Wildfires

There are three basic types of wildfires (NRC 2021):

- Crown fires burn up the entire lengths to the tops of trees and are the most intense and dangerous wildland fires.
- Surface fires burn surface litter and duff and are known for being the easiest fires to extinguish and causing the least damage. Brush and small trees enable surface fires to reach treetops, and so are referred to as ladder fuels.
- Ground fires occur in deep accumulations of dead vegetation that become dry enough to burn. These fires move very slowly but can be difficult to extinguish.

Wildfires burn in many types of vegetation—forest, woodland, scrub, chaparral, and grassland. Many species of native California plants are adapted to fire, and habitats such as chaparral shrubs and conifer forests can recover from fire. For example, some species of chaparral plants, such as ceanothus, require intense heat for germination and therefore have flammable resins on leaves and roots that can quickly sprout up in burned areas (NPS 2018). Annually since 2000, the average annual acres burned in California has more than doubled from the average of the 1960s (CAL FIRE 2018). Wildfires have been

observed to be more frequent and growing in intensity, with 4,304,379 acres burned in 2020, 2,569,386 acres burned in 2021, 331,360 acres in 2022, and 257,220 acres burned in 2023 (CAL FIRE 2020, 2021, 2022, 2023).

Wildfire Causes

Although the term "wildfire" suggests natural origins, a 2017 study that evaluated 1.5 million wildfires in the United States between 1992 and 2012 found that humans were responsible for igniting 84 percent of wildfires, accounting for 44 percent of acreage burned (Balch et al. 2017). The three most common initiators of human-caused wildfires are debris burning (logging slash, farm fields, trash, etc.), arson, and equipment use (Pacific Biodiversity Institute 2007). Power lines can also ignite wildfires through downed lines, vegetation contact, conductors that collide, and equipment failures (Texas Wildfire Mitigation Project 2018).

An analysis of US Forest Service wildfire data from 1986 to 1996 determined that 95 percent of human-caused wildfires and 90 percent of all wildfires were within 0.5 mile of a road, and that about 61 percent of all wildfires and 55 percent of human-caused wildfires were within approximately 650 feet (200 meters) of a road. The study concluded that the increase in human-caused ignition greatly outweighs the benefits of increased access for firefighters (Pacific Biodiversity Institute 2007).

There are three primary methods of wildfire spread:

- **Embers.** Embers are the most prolific cause of home ignition, at a rate of two out of every three homes destroyed. Embers are glowing or burning pieces of vegetation or construction debris that are lofted during a wildfire and can move up to a mile ahead of a wildfire, especially during high winds. These small embers or sparks may fall on the vegetation near a home (on dry leaves, needles, or twigs on the roof) and subsequently ignite the home. Embers can travel several miles during high wind events, such as the Diablo winds, posing a potential risk to all structures without fire-resistant landscaping and construction within a mile of the fire.
- **Direct Flame Contact.** Direct flame contact refers to the transfer of heat by direct flame exposure. Direct contact will heat the building materials of the home, and if the time and intensity of exposure is severe enough, windows will break and materials will ignite.

- **Radiant Heat.** A house can catch fire from the heat that is transferred to it from nearby burning objects, even in the absence of direct flames or embers. By creating defensible space around homes, the risk from radiant heat is significantly reduced.

Secondary Effects

Secondary effects of wildfire include additional hazards such as poor air quality, landslides, and power outages.

- **Air Pollution.** Smoke is made up of a complex mixture of gases and fine particles produced when wood and other organic materials burn. The biggest health threat from smoke is from fine particles that can penetrate the lungs and cause a range of health problems, from burning eyes and a runny nose to aggravated chronic heart and lung diseases. Exposure to particulate pollution is even linked to premature death. Some populations are more sensitive than others to smoke, including people with heart or lung diseases, seniors, children, people with chronic illnesses, and pregnant women (USEPA 2021).

- **Landslides and Debris Flows.** After a high intensity wildfire is suppressed, the burn scar is typically bare of its vegetative cover, which had supported the hillsides and steeper slopes. When supporting vegetation is burned away, hillsides become prone to destabilization and erosion, increasing the risk of landslides. Post-fire landslide hazards include fast-moving, highly destructive debris flows that can occur in the period immediately following wildfires in response to high intensity rainfall events, and flows that are generated over longer time periods that are accompanied by root decay and loss of soil strength. Fires increase the potential for debris flows by increasing the imperviousness of soil so that it repels water, and by destroying vegetation that would slow and absorb rainfall and whose roots would help stabilize soil (USGS 2018). The burning of vegetation and soil on slopes more than doubles the rate that water will run off into watercourses (CGS 2019). Post-fire debris flows are particularly hazardous because they can happen with little warning, exert great impulsive loads on objects in their paths, strip vegetation, block drainage ways, damage structures, and endanger human life. Post-fire debris flows are most common in the two years after a fire and are usually triggered by heavy rainfall. It takes much less rainfall to trigger debris flows from burned basins than from unburned areas.

Wildfire in Rio Vista

Wildfire Classifications

CAL FIRE establishes FHSZs, designating each as moderate, high, or very high severity. Incorporated areas such as Rio Vista are considered local responsibility areas, within which CAL FIRE designates moderate, high, and very high FHSZs (Government Code 51178). As shown in Figure 5.17-1, moderate and high FHSZs are located on vacant land west of Liberty Island Road and north of Highway 12, in the northwestern portion of the city.

WUI areas occur when urban development is intermixed with wildland vegetation, or when pockets of wildland vegetation occur inside developed areas. The WUI is subdivided into the intermix zone (where houses and wildland vegetation directly mingle), the interface zone (housing adjacent to wildland vegetation, but not mingled with it), and the influence zone (areas of wildfire-susceptible vegetation surrounding the other zones). The interface and intermix zones carry the highest risk for wildfires affecting developed areas. Unlike wildfire in wildland areas, fires in WUI areas are more likely to damage or destroy buildings and infrastructure. Figure 5.17-2 identifies the WUI in Rio Vista.

Wildfire History

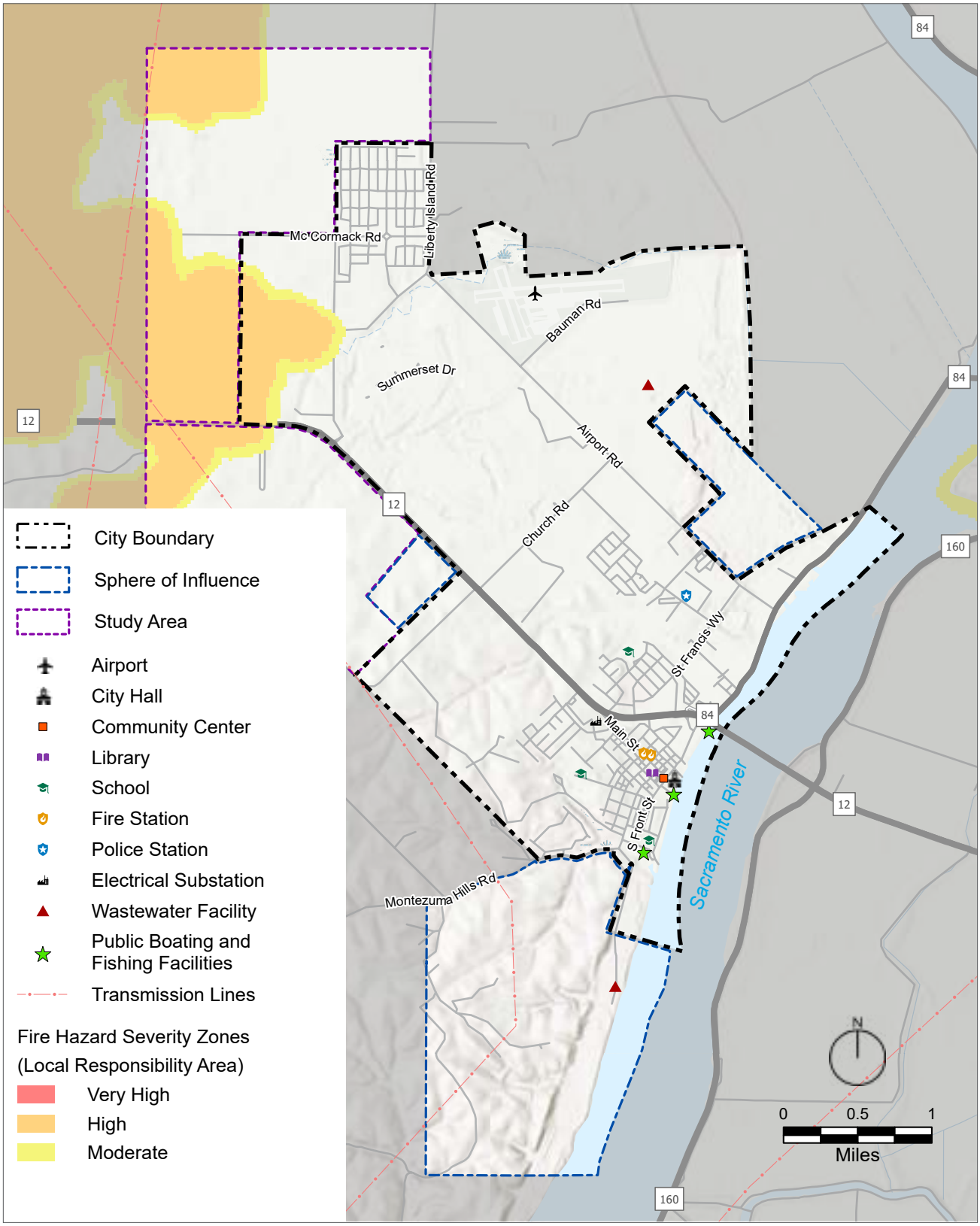
There is limited details on historical fires in the Rio Vista area. However, in July 2010, the Bradford Fire burned approximately 510 acres on Bradford Island in the Sacramento-San Joaquin River Delta, south of Rio Vista. The island is a reclaimed peat wetland that is only accessible by boat. The cause of the fire was unknown, and no injuries or deaths were reported, but five homes were destroyed. In August 2021, another fire, also called the Bradford Fire, burned approximately 212 acres on the 2,100-acre island. The cause of the fire was unknown, and no injuries or deaths were reported, but two structures were destroyed.

From 2005 to 2020, there were 15 wildfires in Solano County, some of which overlapped with neighboring counties, that burned over 100 acres in the county. Some burned considerably more acreage, most notably the 2017 Atlas Fire and the 2020 LNU Lightning Complex. Table 5.17-1, *Historic Wildfires in Solano County,* lists historic wildfire incidents in Solano County from 2005 to 2020.

Table 5.17-1 Historic Wildfires in Solano County

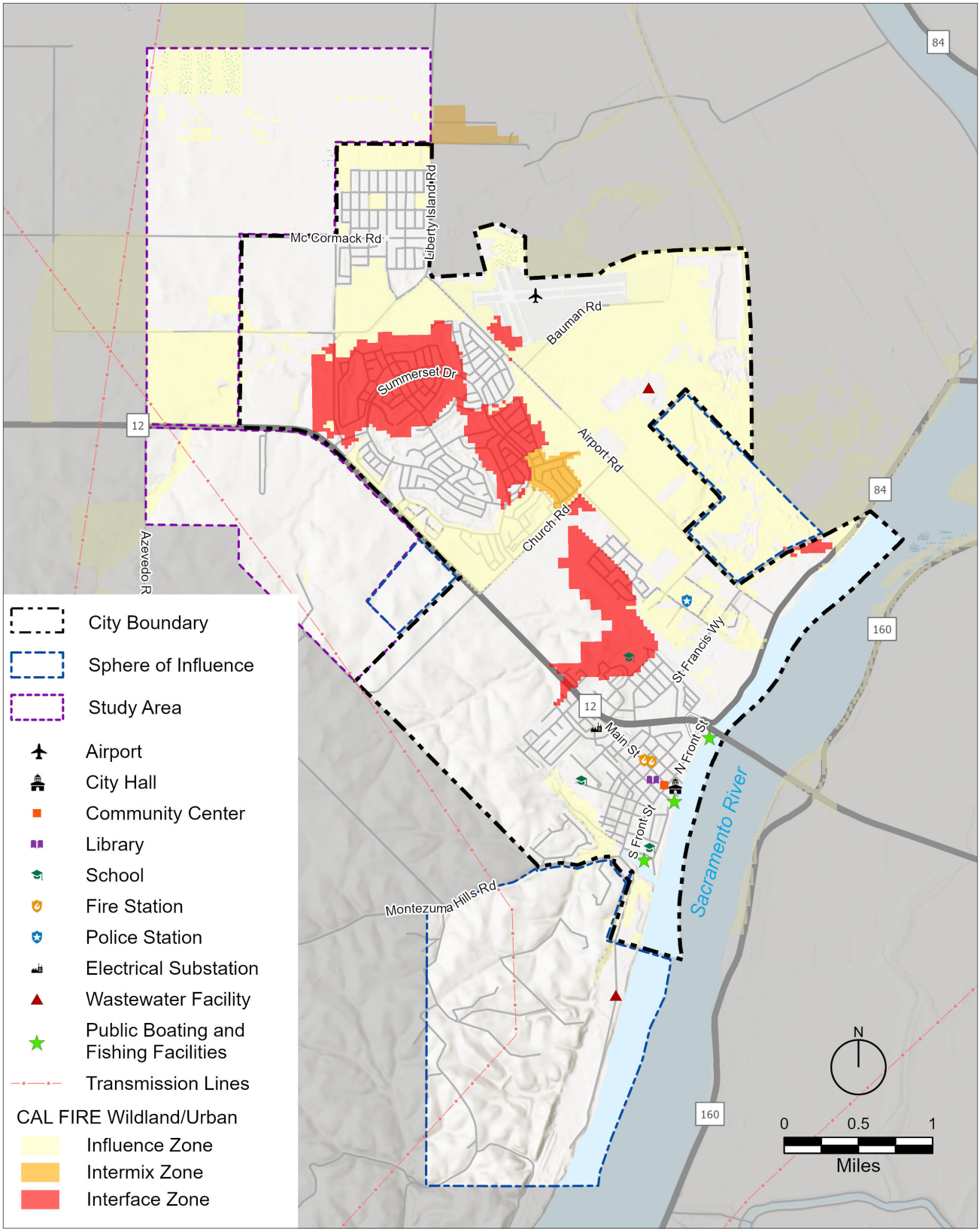
Year	Fire Name	Total Acreage
2000	Winters	404
2002	128	188
2003	Sacket	192
2004	Cement	1,007
2004	Mix	296
2005	Gordon	194
2006	Sky Valley	226
2008	Wild	4,102
2011	Beacon	703
2015	Wragg	8,049
2017	Timm	126
2017	Atlas	51,625
2018	Nelson	2,158
2019	American	527
2020	LNU Lightning Complex	160,260

Source: CAL FIRE 2024.



Source: CALFIRE 2025, City of Rio Vista, Solano County 2021, PlaceWorks 2025

Figure 5.17-1
Fire Hazard Severity Zones



Source: CalFire 2021, City of Rio Vista, Solano County 2021, PlaceWorks, 2023.

Figure 5.17-2
Wildland-Urban Interface Zones

Factors Influencing Wildfire

Several factors influence wildfire conditions and facilitate the spread of wildfires, including topography, fuels, weather conditions, and climate change. Human actions are also the leading cause of wildfires in California, increasing the risk of wildfire devastating natural lands and communities. This section describes these five factors in the context of the City of Rio Vista.

Fuel

The qualities of vegetation that directly influence fire risk include fuel type and size, loading, arrangement, chemical composition, and dead and live fuel moisture, which contribute to the flammability characteristics of the vegetation. Grass and brush fuel types react quickly to changes in weather such as low humidity or high wind speeds. Fires in areas covered by this vegetation type can spread quickly in gusty wind conditions. In Rio Vista, grassland habitat provides highly flammable fuel that is conducive to wildfires. These plant species are capable of regeneration after a fire, making periodic wildfires a natural part of the ecology of these areas; however, this fuel type can spread quickly throughout the landscape. The climate of Rio Vista keeps the grass dry and more readily combustible during fire season, and seasonal dry conditions exacerbate fire hazards.

Because areas of the city with natural vegetation are extremely flammable during late summer and fall, wildfire is a serious hazard in undeveloped areas and on large-lot home sites with extensive areas of unirrigated vegetation. Grassland fires are easily ignited, particularly in dry seasons. However, these fires are relatively easily controlled if they can be reached by fire equipment. Wildfires, particularly near the end of the dry season, tend to burn fast and very hot, threatening homes and leading to serious destruction of vegetative cover. High-intensity fires increase the likelihood of a fire growing and spreading quickly. Furthermore, embers carried by the wind can lead to spot fires beyond the immediate perimeter, and these are often the primary cause of ignition for structures.

While the grassland cover surrounding Rio Vista provides the potential for hot, fast burning fires, agricultural/grazing lands surrounding the city are regularly maintained through either harvesting or disking. These management practices substantially reduce the risk for severe wildfires that could intrude into the urban development of the Rio Vista community.

Topography

Steep terrain or slope plays a key role in the rate and direction that wildfires spread, since fires will normally burn much faster uphill. When the gradient of a slope doubles, the rate of spread of a fire will also likely double. Terrain that forms a funneling effect, such as chimneys, chutes, or saddles on the landscape, can result in especially intense fire behavior. Conversely, flat terrain tends to have little effect on fire spread, resulting in fires that are driven by vegetation and wind.

The Montezuma Hills lie to the west and south; these landforms create the hilly topography westward from downtown Rio Vista and State Route 12 (SR-12). The rolling terrain levels out gradually toward SR-12. Elevations shift more abruptly over a one-mile stretch north of SR-12 and east of Church Road but the shift is even more pronounced on the south side of SR-12. The hilly terrain is very pronounced south of the existing neighborhoods and the high school. The Montezuma Hills are the most significant topographic feature of Rio Vista.

Weather and Wind

Rio Vista has a Mediterranean climate, with rain in the winters and hot, dry summers, and Diablo winds occur throughout the year. Diablo winds are hot, dry winds from the north and northeast that carry extremely dry air at a high velocity through the Sacramento-San Joaquin Delta and into the San Francisco Bay Area. Rio Vista's climate is typical of the northern Central Valley, just inland of the Bay Area. On average, annual high temperatures in Rio Vista range from 56 degrees Fahrenheit (°F) in December and January to 91°F in July. Low temperatures range from 41°F in December and January to 59°F in July and August (Weather Spark 2024). The city receives an average of approximately 15.5 inches of precipitation annually (Cal-Adapt 2024a). Most precipitation falls during the winter months, with rare occurrences of summer storms.

Human Actions

Most wildfires are ignited by human action, the result of direct acts of arson, carelessness, or accidents. Many fires originate in populated areas along roads and around homes and are often the result of the careless disposal of cigarettes, mowing of dead grass, electrical equipment malfunction, use of equipment, or burning of debris. Recreation areas with increased human activity that are in high or very high fire hazard areas also increase the potential for wildfires.

Rio Vista is also at risk from structural fires. These fires occur in built environments, destroying buildings and other human-made structures. Structural fires are often due to faulty wiring, mechanical equipment, or combustible construction materials. The absence of fire alarms and fire sprinkler systems are also conditions that exacerbate the damages associated with a structural fire. Structural fires are largely from human accidents, although arson might cause some events. Older buildings that lack modern fire safety features may face greater risk of damage from fires.

Climate Change

Climate change is likely to increase annual average maximum temperatures in Rio Vista from a historical 73.6°F to 78.7°F by 2050 and 82.0°F by 2100 (Cal-Adapt 2023a). This will likely create warmer temperatures earlier and later in the year. Precipitation levels are projected to increase slightly over the course of the century, changing from a historical annual average of 15.5 inches to an annual average of 18.5 inches by 2099 (Cal-Adapt 2023a). Variations in precipitation patterns will also lead to an increase in frequency and intensity of heavy precipitation events as well as prolonged periods of drought. The combination of extreme heat and droughts can cause soils and vegetation to dry out, creating more fuel for wildfires. These factors are expected to increase wildfire conditions, creating the risk of more frequent and intense wildfires. Because wildfires burn the trees and other vegetation that help stabilize a hillside and absorb water, more areas burned by fire may also lead to an increase in landslides and floods. Historically, an average of 70.7 acres burned annually in the city of Rio Vista (Cal-Adapt 2023b). Wildfires are projected to increase to an annual average in the city of 104.8 acres burned by 2050 and an annual average of 117.9 acres burned by 2100 (Cal-Adapt 2023b).

Fire Protection Services

Fire protection in Rio Vista is provided by the City of Rio Vista Fire Department. The Rio Vista Fire Department operates one station at 350 Main Street. The City is a signatory to the California Mutual Aid Fire Protection System. This agreement was established to aid with major emergency incidents anywhere in the state. The City maintains mutual aid agreements with several agencies. When major incidents occur, the Rio Vista Fire Department must deploy all its resources and depend on mutual aid agreements with neighboring jurisdictions. This includes all other fire departments in Solano County. Mutual aid agreements help ensure adequate response times in the outlying areas. The City also has a contract with the State Office of Emergency Services and an automatic aid agreement with the city of Isleton in Sacramento County.

Evacuation and Access

Evacuation routes are designated roadways that allow many people to quickly leave an area due to a potential or imminent disaster. These routes should have sufficient capacity to accommodate the needs of the community, be safely and easily accessible, and allow people to travel far enough away to be safe from emergency conditions.

Primary emergency access and evacuation routes include SR-12, which intersects the city from northwest to southeast along the western portion of the city; SR-84, which intersects the city from southwest to northeast along the southeastern portion of the city; and other local roadways that connect to these primary evacuation routes.

5.17.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if located in or near state responsibility areas or lands classified as very high fire hazard severity zones the project would:

W-1 Substantially impair an adopted emergency response plan or emergency evacuation plan.

W-2 Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.

W-3 Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.

W-4 Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

5.17.3 Proposed General Plan Goals and Policies

The following goals, policies, and actions from the proposed General Plan are applicable to wildfire hazards.

Public Facilities and Services

- **Goal PFS-1:** To provide high quality and reliable public facilities and services to members of the community.
- **Goal PFS-3:** To ensure public facilities and services will be adequate to serve the community through the year 2045.
- **Goal PFS-4**: To work effectively with outside agencies that provide public facilities and services to the Rio Vista community.
  - **Policy PFS-11:** Maintain emergency response and fire prevention services at levels that minimize the risk of injury and loss of property in the community.
  - **Policy PFS-12:** Construct facilities and maintain equipment to provide effective and responsive police and fire protection services throughout the community.
  - **Policy PFS-13:** Establish and maintain mutual aid agreements that provide supplemental aid from partnering law enforcement and fire agencies.

Safety Element

- **Goal SE-1:** To avoid loss of life and minimize damage to property from natural and human-caused hazards.
- **Goal SE-2:** To maintain emergency response services that meet the needs of the community.
- **Goal SE-3:** To increase the resilience of the community to climate change
  - **Policy SE-2:** The City will strive to ensure that emergency preparation and response materials are available to all residents in multiple languages and in formats appropriate for people with access and functional needs.
  - **Policy SE-3:** Coordinate with emergency responders to maintain potential evacuation routes, including roadway improvements as needed.
  - **Policy SE-4:** Ensure City infrastructure in 100-year, 200-year, and 500-year floodplains conform to existing 100-year and 200-year floodplain elevation standards and can adapt to increased flooding.
  - **Policy SE-5:** Site critical and lifeline facilities, including police and fire stations, hazardous material storage facilities, bridges, and large public assembly halls, outside of hazardous, including flood hazard zones, sea level rise hazard

areas, seismic and geologic hazard areas, and adjacent to hazardous materials facilities.

- **Policy SE-6:** Plan for adequate firefighting infrastructure, including water supply and pressure, road and building clearance for firefighting vehicles, and clear and legible street signage throughout the community.
- **Policy SE-7:** Minimize the potential for loss of life and property resulting from wildfire through community outreach and the development review process.
- **Policy SE-9:** When reviewing any entitlements for residential uses on lands that contain natural gas wells or facilities, require a well/facility maintenance plan and a detailed safety plan that includes emergency response procedures.

5.17.4 Environmental Impacts

Impact 5.17-1: Development under the proposed project would not substantially impair an adopted emergency response plan or emergency evacuation plan. [Threshold W-1]

The City of Rio Vista does not have an adopted emergency response plan or emergency evacuation plan. However, the Solano County Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) provides strategies and mitigation measures to address local fire hazards. The proposed project include updates to existing goals, policies, and actions, which would not increase future development potential in wildfire-prone areas. Buildout under the proposed project would not result in substantial changes to the circulation patterns or emergency access routes in the city.

In the case of an emergency, primary emergency access and evacuation routes include SR-12, which intersects the city from northwest to southeast along the western portion of the city; SR-84, which intersects the city from southwest to northeast along the southeastern portion of the city; and other local roadways that connect to these primary evacuation routes.

During an emergency, standard emergency response procedures of the Rio Vista Fire Department and Police Department are conducted in tandem. The City is a signatory to the California Mutual Aid Fire Protection System, which is an agreement to aid with major emergency incidents anywhere in the state. The City maintains mutual aid agreements with several agencies which helps ensure adequate response times in the outlying areas. When major incidents occur, the Rio Vista Fire Department must deploy all its resources and depend on mutual aid agreements with neighboring jurisdictions. This includes all other fire departments in Solano County. The City also has a contract with the State Office

of Emergency Services and an automatic aid agreement with the city of Isleton in Sacramento County.

Future development would be required to comply with applicable fire and building codes. To ensure emergency services in the city are not impaired by future development, all development projects in the city is reviewed by Rio Vista Fire Department prior to approval. The Rio Vista Fire Department requires site design to consider fire access. Several of these requirements include vegetation management requirements, construction standards, and subdivision and building access, among others. New development is required to comply with these regulations to provide sufficient clear emergency vehicle access.

Additionally, the proposed General Plan contains the following policies that would ensure effective emergency response:

- **Policy PFS-12:** Construct facilities and maintain equipment to provide effective and responsive police and fire protection services throughout the community.
- **Policy PFS-13:** Establish and maintain mutual aid agreements that provide supplemental aid from partnering law enforcement and fire agencies.
- **Policy SE-2:** The City will strive to ensure that emergency preparation and response materials are available to all residents in multiple languages and in formats appropriate for people with access and functional needs.
- **Policy SE-3:** Coordinate with emergency responders to maintain potential evacuation routes, including roadway improvements as needed.
- **Policy SE-6:** Plan for adequate firefighting infrastructure, including water supply and pressure, road and building clearance for firefighting vehicles, and clear and legible street signage throughout the community.
- **Policy SE-9:** When reviewing any entitlements for residential uses on lands that contain natural gas wells or facilities, require a well/facility maintenance plan and a detailed safety plan that includes emergency response procedures.

Although the City of Rio Vista does not have an adopted emergency response plan or emergency evacuation plan, construction of new development or redevelopment could cause a temporary impairment of a roadway serving as an evacuation route due to road closure. However, all future development, regardless of whether new development or redevelopment, is required to comply with adopted local, regional, and State plans and regulations addressing emergency access, response, and evacuation. Therefore, impacts would be less than significant.

Level of Significance Before Mitigation: Impact 5.17-1 would be less than significant.

Mitigation Measures

No mitigation measures are required.

Impact 5.17-2: Development under the proposed project could exacerbate wildfire risks due to slope, prevailing winds, and other factors, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire. [Threshold W-2]

The City of Rio vista is vulnerable to and at risk of wildfires. As shown in Figure 5.17-1, moderate and high FHSZs are located on vacant land west of Liberty Island Road and north of Highway 12, in the northwestern portion of the city. This area consists primarily of flat terrain with grassland vegetation. Additionally, wildfire remains a serious hazard in the WUI, including undeveloped areas and on large lot home sites with extensive areas of unirrigated vegetation since these areas of the city consist of natural vegetation which are extremely flammable during late summer and fall. In Rio Vista, grassland habitat provides highly flammable fuel that is conducive to wildfires. Moreover, the climate of Rio Vista keeps the grass dry and more readily combustible during fire season, and seasonal dry conditions exacerbate fire hazards.

The Montezuma Hills lie to the west and south; these landforms create the hilly topography westward from downtown Rio Vista and State Route 12 (SR-12). The rolling terrain levels out gradually toward SR-12. Elevations shift more abruptly over a one-mile stretch north of SR-12 and east of Church Road but the shift is even more pronounced on the south side of SR-12. The hilly terrain is very pronounced south of the existing neighborhoods and the high school. The Montezuma Hills are the most significant topographic feature of Rio Vista. A majority of the city is within a low to medium landslide susceptibility class. However, there are some areas with a high landslide susceptibility class in the southwestern portion of the city, east of SR-12.

Construction of potential future development in these areas may require grading and site preparation activities that could change the slope of a single parcel or site. However, all potential future development within Rio Vista would be required to comply with the CBC; City municipal code; and all state, regional, and local requirements pertaining to geotechnical hazards and constraints, including soil conditions. Implementation of the proposed project would not increase the risk of landslides after a wildfire compared to existing conditions.

Future development under the proposed project could exacerbate wildfire risks by adding more residents to wildfire prone areas such as the WUI, thereby exposing people in the city to elevated levels of particulates from wildfire smoke. Wildfire smoke consists of a mix of gases and fine particulate matter from burning vegetation and materials. The pollutant of most concern from wildfire smoke is fine particulate matter ($PM_{2.5}$), which is damaging to human health due to its ability to deeply penetrate lung tissue and affect the heart and circulatory system. Implementation of the proposed project would not change or affect wind patterns in the city; however, wildfires and wildfire smoke hazards could be spread by prevailing or Diablo Winds.

Section 5.17.1.1, *Regulatory Framework*, describes plans, policies, regulations, and procedures that help to reduce wildfire risks. The 2018 Strategic Fire Plan for California, 2021 California Wildfire and Forest Resilience Action Plan, Fire Risk Reduction Community designation, and Solano County MJHMP are intended to reduce wildfire hazards and respond to these hazards on a statewide and regional scale. In addition, the Yolo-Solano Air Quality Management District provides air quality alerts, advisories, and provides resources for an interactive online map to view current air quality conditions in the region. Furthermore, all development projects in the City would be required to comply with the 2022 California Building Code and 2022 California Fire Code (or most recent versions) and compliance with the vegetation management requirements in California Fire Code Section 4906 and California Government Code Section 51182, respectively.

Other factors, such as vegetation, have the potential to exacerbate wildfire risks. All potential future development within wildfire-prone areas in Rio Vista would be required to comply with Public Resources Code Section 4291, and the California Fire Code. These regulations have specific requirements for new development to create defensible space and extensive fuel reduction within 100 feet of a structure, an ember-resistant zone within 5 feet of a structure, and the overall maintenance of properties to reduce the risk of uncontrolled fires or the spread of fires to other properties. Adherence to these building practices, fire safety regulations, and vegetation fuel management requirements would reduce the potential for exacerbating wildfire risks.

Implementation of the Proposed General Plan policies and applicable plans, as well as compliance with the California Fire Code and California Building Code would ensure that wildfire risks due to slopes, prevailing winds, and other factors are not exacerbated. As such, impacts would be less than significant.

Level of Significance Before Mitigation: Impact 5.17-2 would be less than significant.

Mitigation Measures

No mitigation measures are required.

Impact 5.17-3: Development under the proposed project could require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities), but it would not exacerbate fire risk or result in temporary or ongoing impacts to the environment. [Threshold W-3]

Development under the proposed project would result in additional infrastructure, such as roadways, transmission lines, and other utilities, to serve new residential development. Some of this new infrastructure would likely be constructed in the WUI. Fuel breaks and emergency water sources would also be required to comply with state and local development regulations. These types of improvements would involve temporary construction and result in changes to the existing built environment. The installation and operation of new aboveground power transmission lines would create a higher risk of exacerbating wildfire risks compared to other infrastructure. However, the CPUC requires maintenance of vegetation around power lines, strict wire-to-wire clearances, annual inspections of aboveground power lines, and the preparation of fire prevention plans for aboveground power lines in high fire-threat districts. These measures would reduce the reduce the wildfire risks associated with the installation and maintenance of power lines.

Any development or redevelopment in wildfire-prone areas of the city would also be required to comply with building and design standards in the California Building Code and California Fire Code, which include provisions for fire-resistant building materials, the clearance of debris, and fire safety requirements during demolition and construction activities. Public Resources Code Section 4291 also requires vegetation around buildings or structures to maintain defensible space within 100 feet of a structure and an ember-resistant zone within 5 feet of a structure.

These measures, along with Policy SE-6, which plans for adequate firefighting infrastructure, including water supply and pressure and road and building clearance for firefighting vehicles, would minimize wildfire risks associated with the installation and maintenance of infrastructure.

Such infrastructure and maintenance activities would also be required to comply with the adopted State regulations, City Municipal Code standards, and the proposed General Plan policies and actions to mitigate the impact of infrastructure on the environment. Therefore, impacts would be less than significant.

Level of Significance Before Mitigation: Impact 5.17-3 would be less than significant.

Mitigation Measures

No mitigation measures are required.

Impact 5.17-4: The project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. [Threshold W-4]

Catastrophic wildfires can create favorable conditions for other hazards, such as flooding and landslides during the rainy season. Wildfires on steep slopes can burn the vegetation that stabilizes the slope and create hydrophobic conditions that prevent the ground from absorbing water. This can lead to landslides, debris flows, and flooding. A project would result in a significant impact if—due to slopes, drainage patterns, or post-fire slope instability—it would expose people or structures to significant risks from landslides, debris flows, or flooding.

As discussed in Chapter 5.10, *Hydrology and Water Quality*, the City of Rio Vista has areas within the 100-, 200-, and 500-year floodplains. Most land in the city limits lies outside the 100-year flood zone and is partially protected by levees along the north side of the city. The 100- and 500-year floodplains in Rio Vista include areas along the shoreline of the Sacramento River as well as inland areas surrounding residential development. Public boating and fishing facilities along the shoreline lie within the 100- and 500-year floodplains. The northern portion of the city is in the 200-year flood zone, which also encompasses residential development and the wastewater facility. The 100-, 200-, and 500-year floodplains encompass the Rio Vista Golf Club.

As discussed in Chapter 5.7, *Geology, Soils, and Mineral Resources*, a majority of the city is in a low to medium landslide susceptibility class. However, there are some areas with a high landslide susceptibility class in the southwestern portion of the city, east of SR-12.

Potential future development under the proposed project could contribute to post-fire slope instability or drainage changes upstream. However, all new development in the county is required to comply with state and local regulations, such as the CBC and City municipal code, which have provisions to reduce downslope or downstream landslides and flooding. For example, Section 1803 of the 2022 CBC requires a geotechnical investigation that must assess existing landslide susceptibility on a project site. Rio Vista

Municipal Code, Chapter 13.24, Grading, Erosion and Sediment Control, also requires a grading permit to control erosion and slope stability.

Moreover, new development under the proposed project would be subject to several state and local regulations that would ensure future development would not substantially alter the existing drainage pattern of a site, resulting in increased runoff or erosion. For example, future development would be required to request coverage under the National Pollutant Discharge Elimination System General Permit, Order No. Water Quality Order No. 2009-0000-DWQ (as amended by Order No. 2010-0014-DWQ and Order No. 2012-0006-DWQ), if the proposed project would result in one or more acres of land disturbance. To conform to the requirements of the MS4 General Permit, a Storm Water Pollution Prevention Plan would need to specify best management practices to prevent construction pollutants, including eroded soils (such as topsoil), from moving off-site.

All potential future development within wildfire-prone areas would be required to comply with Public Resources Code Section 4291 and the California Fire Code. These regulations would ensure fire-resilient structures and properties, and therefore would reduce the potential for post-wildfire flooding or landslides downstream or downslope.

New development complying with state and local regulations would not expose people or structures to downslope landslides or downstream flooding due to post-fire hazards. All future development, regardless of the location, is required to comply with adopted local, regional, and state plans and regulations addressing wildfire prevention, which would minimize risks of post-fire hazards. As such, compliance with these policies and regulatory requirements would ensure that impacts from post-fire instability would be less than significant.

Level of Significance Before Mitigation: Impact 5.17-4 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.17.5 Cumulative Impacts

Implementation of the proposed project would result in new development in the wildfire-prone areas such as the WUI. To protect development in the City, including in the WUI, the City requires that future development adhere to state and local regulations and plans. With adherence to these building practices and wildfire management requirements, development associated with the proposed project would reduce wildfire risk to the extent possible. However, when combined with past and future development in the adjacent

cities and unincorporated county areas, the proposed project's contribution to the cumulative impact would be cumulatively considerable. Cumulative development in adjacent jurisdictions would, however, be subject to the same state regulations applicable to future projects under the proposed project.

5.17.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, all impacts would be less than significant.

5.17.7 Mitigation Measures

No mitigation measures are required.

5.17.8 Level of Significance After Mitigation

Impacts would be less than significant.

5.17.9 References

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6. Unavoidable Impacts, Irreversible Changes, and Growth-Inducing Impacts

6.1 SIGNIFICANT UNAVOIDABLE AND ADVERSE IMPACTS

At the end of Chapter 1, *Executive Summary*, is a table that summarizes the impacts, mitigation measures, and levels of significance before and after mitigation. Mitigation measures would reduce the level of impact, but the following impacts would remain significant, unavoidable, and adverse after mitigation measures are applied:

6.1.1 Air Quality

- **Impact 5.3-2:** Short-term construction activities associated with the proposed project would result in a cumulatively considerable net increase of criteria pollutants for which the project region is in non-attainment under applicable federal or state ambient air quality standards.
- **Impact 5.3-3:** Development under the proposed project would result in a cumulatively considerable net increase of criteria pollutants for which the project region is in non-attainment under applicable federal or state AAQS.

6.1.2 Cultural and Tribal Cultural Resources

- **Impact 5.5-1:** Implementation of the proposed project could cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines, Section 15064.5.

6.1.3 Greenhouse Gas Emissions

- **Impact 5.8-1:** Implementation of the proposed project could result in emissions that would exceed project-level construction significance threshold established by the SMAQMD.
- **Impact 5.8-2:** Implementation of the proposed project could conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing GHG emissions.

6.1.4 Noise

- **Impact 5.12-1:** The proposed project would result in the generation of substantial temporary and 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.

6.1.5 Transportation

- **Impact 5.15-2:** Implementation of the proposed project would conflict or be inconsistent with CEQA Guidelines Section 15064.3(b).

6.2 SIGNIFICANT IRREVERSIBLE CHANGES DUE TO THE PROPOSED PROJECT

Section 15126.2(c) of the CEQA Guidelines requires an environmental impact report (EIR) to describe any significant irreversible environmental changes that would be caused by the proposed project if it is implemented. Specifically, the CEQA Guidelines state:

> Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highways improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also, irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.

The following are the significant irreversible changes that would be caused by the proposed project, should it be implemented:

- Implementation of the proposed project would include construction activities that would entail the commitment of nonrenewable and/or slowly renewable energy resources; human resources; and natural resources such as lumber and other forest products, sand and gravel, asphalt, steel, copper, lead, other metals, water, and fossil fuels. Operation of the proposed project would require the use of natural gas and electricity, petroleum-based fuels, fossil fuels, and water. The commitment of resources required for the construction and operation of the

proposed project would limit the availability of such resources for future generations or for other uses during the life of the project.

- As increased commitment of social services and public maintenance services (e.g., police, fire, schools, libraries, and sewer and water services) would also be required. The energy and social services commitments would be long-term obligations in view of the low likelihood of returning the land to its original condition once it has been developed.
- An increase in vehicle trips would accompany project-related population growth. Over the long term, emissions associated with such vehicle trips would continue to contribute to the Sacramento Valley Air Basin's nonattainment designations.
- The visual character of the planning area would be altered by the construction of new developments and redevelopment. Additional landscaping, grading, and construction in the planning area would also contribute to an altered visual character of the existing area. This would result in a permanent change in the character of the planning area.

Given the low likelihood that the sites would revert to their original forms, the proposed project would generally commit future generations to these environmental changes.

6.3 GROWTH-INDUCING IMPACTS OF THE PROPOSED PROJECT

Pursuant to Sections 15126(d) and 15126.2(d) of the CEQA Guidelines, this section is provided to examine ways in which the proposed project could foster economic or population growth or the construction of additional housing in the surrounding environment, either directly or indirectly. Also required is an assessment of whether the project would foster other activities that could affect the environment, individually or cumulatively. To address this issue, potential growth-inducing effects will be examined through analysis of the following questions:

- Would this project remove obstacles to growth, e.g., through the construction or extension of major infrastructure facilities that do not presently exist in the project area, or through changes in existing regulations pertaining to land development?
- Would this project result in the need to expand one or more public services to maintain desired levels of service?
- Would this project encourage or facilitate economic effects that could result in other activities that could significantly affect the environment?

- Would approval of this project involve some precedent-setting action that could encourage and facilitate other activities that could significantly affect the environment?

Please note that growth-inducing effects are not to be construed as necessarily beneficial, detrimental, or of little significance to the environment. This issue is presented to provide additional information on ways in which this project could contribute to significant changes in the environment, beyond the direct consequences of developing the land use concept examined in the preceding sections of this EIR.

Would this project remove obstacles to growth, e.g., through the construction or extension of major infrastructure facilities that do not presently exist in the project area, or through changes in existing regulations pertaining to land development?

The proposed General Plan allows growth in areas of the city either currently planned to accommodate development or planned to expand on existing development; it does not expand the potential development permit beyond the areas anticipated for development in the 2001 Rio Vista General Plan. The proposed General Plan would increase employment opportunities so that residents can live and work in the city. Reducing the need to commute outside the city will reduce vehicle miles traveled, thereby reducing greenhouse gas emissions. Because growth is generally directed to areas already developed, it is not anticipated that major new infrastructure will be needed. The proposed project aims to pursue urban infill projects that would allow for more accessible transit and walkability, further reducing vehicle miles traveled and subsequent greenhouse gas emissions.

Would this project result in the need to expand one or more public services to maintain desired levels of service?

Over time, the City anticipates the need to expand services to meet the needs of growth envisioned in the General Plan. An increase in development would require an increased commitment to public services that would be considered a long-term commitment to maintain a desired level of service. This is considered a growth-inducing impact. It is not known at this point when such public facilities would be required or what the exact nature of these facilities would be. As a result, it cannot be determined what project-specific environmental impacts would occur from their construction and operation. The potential impacts would be identified during the facility planning process. There are several mechanisms in place to ensure there is adequate funding for expansion, such as annual budgets, development impact fees, and coordination with local and regional

agencies. The growth anticipated in this General Plan is focused in areas of the city where development is already planned or served by public services.

Would this project encourage or facilitate economic effects that could result in other activities that could significantly affect the environment?

Development consistent with the General Plan may have significant impacts on the existing environment. Even though growth is directed to areas of the city that have already been graded or built up, planned development may impact sensitive biological resources. Impacts may also occur to historic resources, including historic landscapes, and tribal cultural resources, depending on the location of the development. Between the standard conditions of approval, existing City ordinances, and procedures such as tribal consultation, these impacts can either be reduced to less than significant or require preparation of a project-specific EIR. Although the proposed project would have a direct growth-inducing effect, indirect growth-inducing effects would be minimized due to the balance of land uses in the proposed project.

Would approval of this project involve some precedent-setting action that could encourage and facilitate other activities that could significantly affect the environment?

Approval of the proposed project would not set a precedent that could encourage and facilitate other activities that could significantly affect the environment. Cities and counties in California periodically update their general plans pursuant to California Government Code Sections 65300 et seq. As discussed in Chapter 3, *Project Description*, the proposed project consists of the preparation of the Rio Vista General Plan Update, which includes revisions to nine elements: Land Use and Community Character, Mobility and Circulation, Economic Development, Housing, Parks and Recreation, Open Space and Resource Conservation, Public Facilities and Services, Safety, and Noise. The Housing Element is a stand-alone element and not analyzed in this DEIR.

Buildout projections for the proposed project are based on the theoretical buildout (dwelling units, population, nonresidential square footage, and employment) of each land use designation, which are calculated using the range of allowable densities. Buildout projections for the proposed project are shown in Table 3-3, *City of Rio Vista Buildout Projections,* in Chapter 3, *Project Description*. As shown in Table 3-1 and Table 3-3, Rio Vista is projected to house an estimated 16,722residents by 2045. Additionally, 7,714 housing units, 3,842 jobs, 221 acres of mixed-use space, 50 acres of retail space, and 372 acres of industrial space are projected for 2045.

6. Unavoidable Impacts, Irreversible Changes, and Growth-Inducing Impacts

Although the proposed project does not include approval of specific physical development, it creates additional development capacity in the Planning Area. Furthermore, development projects would be induced more by market demands than by new development capacity created by land use changes in the proposed Land Use Diagram. However, because approval of the proposed project would ultimately result in subsequent projects that would have their own environmental impacts, including potentially significant impacts, the proposed project is a precedent-setting and growth-inducing action.

7. Alternatives to the Proposed Project

7.1 INTRODUCTION

7.1.1 Purpose and Scope

The California Environmental Quality Act (CEQA) requires that an environmental impact report (EIR) include a discussion of reasonable project alternatives that would "feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any significant effects of the project, and evaluate the comparative merits of the alternatives" (CEQA Guidelines Section 15126.6[a]). As required by CEQA, this chapter identifies and evaluates potential alternatives to the proposed project.

- Section 15126.6 of the CEQA Guidelines explains the foundation and legal requirements for the alternatives analysis in an EIR. Key provisions are:
  - "[T]he discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly." (15126.6[b])
  - "The specific alternative of 'no project' shall also be evaluated along with its impact." (15126.6[e][1])
  - "The no project analysis shall discuss the existing conditions at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services. If the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives." (15126.6[e][2])
  - "The range of alternatives required in an EIR is governed by a 'rule of reason' that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project." (15126.6[f])

- "Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries…, and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent)." (15126.6[f][1]).
- "Only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR." (15126.6[f][2][A])
- "An EIR need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative." (15126.6[f][3])

- For each development alternative, this analysis:
  - Describes the alternative.
  - Analyzes the impact of the alternative as compared to the proposed project.
  - Identifies the impacts of the project that would be avoided or lessened by the alternative.
  - Assesses whether the alternative would meet most of the basic project objectives.
  - Evaluates the comparative merits of the alternative and the project.

According to Section 15126.6(d) of the CEQA Guidelines, "[i]f an alternative would cause…significant effects in addition those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed."

7.1.2 Project Objectives

As described in Section 3.2, *Project Objectives*, of Chapter 3, *Project Description*, the following objectives have been established for the proposed project and will aid decision makers in their review of the project, the project alternatives, and associated environmental impacts.

1. **Revitalize Downtown and the Waterfront District**. Promote a downtown that is a vibrant destination with unique retail, entertainment, arts, dining, and lodging options. Support and attract businesses. Provide the infrastructure needed to support growth in the downtown and waterfront area. Promote, incentivize, and foster the expansion

of retail, commercial and housing uses in the downtown and waterfront area. Preserve the historic character of downtown while supporting new development.

2. **Improve Mobility and Access for All Users**. Provide a safe, efficient, and accessible roadway system that serves the mobility needs of all users. Improve the City's circulation network to provide safe travel for pedestrians, bicyclist, vehicles, and trucks. Efficiently move people and goods without compromising quality of life, safety, and smooth traffic flow for residents and businesses.
3. **Support a Variety of Housing Options.** Encourage a mix of housing types to create diverse neighborhoods that meet the needs of all Rio Vista residents. Promote the building, retention, and renovation of housing to meet the needs of all incomes, ages, and abilities.
4. **Foster a Sustainable Community**. Plan for public facilities that respond to the community's growing needs and a changing environment. Ensure today's needs are met without jeopardizing the community's ability to meet future needs. Promote high-quality, long-lasting development that allows residents to meet daily needs, such as education of our children, shopping, employment, and recreation, in close proximity to their homes. Encourage resource-efficient building techniques, materials, and other principles of green building design in new building construction and renovations.
5. **Offer Recreational Opportunities**. Ensure all residents have easy access to recreational opportunities, such as parks, play fields, river frontage, and walking and biking paths and trails. Expand parks and recreational programs to serve both residents and visitors. Provide a variety of sports and activities for Rio Vista residents of all ages.
6. **Foster Economic Growth**. Promote a strong local economy by fostering the growth and expansion of a diversified business community. Support businesses that create a wide range of jobs for Rio Vista's resident workforce. Make forward-thinking investments that position Rio Vista to respond successfully to an evolving economy.
7. **Promote Fiscal Strength**. Plan land uses at the appropriate scale, intensity, and location to provide the right balance of revenues and costs to allow the City to deliver the services expected by the community. Manage fiscal resources in a responsible, efficient, and effective manner.
8. **Promote a Healthy Community**. Create a community that has options for residents to live a healthy lifestyle and provides access to health care services. Address the impact of Highway 12 traffic. Rio Vista experiences heavy commuter traffic traveling

generally between Stockton and Fairfield on a daily basis, Monday through Friday. This traffic is not generated by Rio Vista homes or businesses, but significantly impacts the community. The proposed General Plan offers near-, mid-, and long-term strategies to reduce the impacts of this traffic on the community.

7.1.3 Summary of Significant Impacts

The following impacts associated with the General Plan Update are considered significant and unavoidable.

Air Quality

- **Impact 5.3-2:** Short-term construction activities associated with the proposed project would result in a cumulatively considerable net increase of criteria pollutants for which the project region is in non-attainment under applicable federal or state ambient air quality standards.
- **Impact 5.3-3:** Development under the proposed project would result in a cumulatively considerable net increase of criteria pollutants for which the project region is in non-attainment under applicable federal or state AAQS.

Cultural and Tribal Cultural Resources

- **Impact 5.5-1:** Implementation of the proposed project could cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines, Section 15064.5.

Greenhouse Gas Emissions

- **Impact 5.8-1:** Implementation of the proposed project could result in emissions that would exceed the project-level construction significance threshold established by the SMAQMD.
- **Impact 5.8-2:** Implementation of the proposed project could conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing GHG emissions.

Noise

- **Impact 5.12-1:** The proposed project would result in the generation of substantial temporary and 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.

Transportation

- **Impact 5.15-2:** Implementation of the proposed project would conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b).

7.2 ALTERNATIVES CONSIDERED AND REJECTED DURING THE SCOPING/PROJECT PLANNING PROCESS

This section discusses land use alternatives that were considered during the scoping and planning process and the reasons why they were not selected for detailed analysis in this EIR.

7.2.1 Alternative Development Areas

CEQA requires that the discussion of alternatives focus on alternatives to the project or its location that can avoid or substantially lessen any significant effects of the project. The key question and first step in the analysis is whether any of the significant effects of the project would be avoided or substantially lessened by putting the project in another location. Only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR (CEQA Guidelines Section 15126[5][B][1]). The city's potential to grow outward is limited by physical constraints, such as the Sacramento River and historical natural gas facilities and by competitive land ownership as part of the East Solano County New Community proposal. Given the nature of the proposed General Plan, it is not possible to consider an off-site alternative because the city boundaries have been established through incorporation, and the City does not have authority to carry out functions pursuant to its proposed General Plan outside of its boundaries. For this reason, an off-site alternative was considered infeasible pursuant to CEQA Guidelines Section 15126.6(c) and was rejected as a project alternative.

7.2.2 Reduced Density Alternative

A reduced density alternative would result in fewer residences and less non-residential development, which would theoretically reduce traffic and thereby reduce community impacts such as air quality, greenhouse gas (GHG) emissions, traffic, noise, and demand for utilities and public services. However, such an alternative would not achieve or would only partially achieve General Plan objectives of providing for growth of the city. This alternative would not provide needed housing as projected by the California Department of Housing and Community Development, increase jobs in the city, or foster growth in the focus areas and identified opportunity areas rather than in sensitive areas or through

annexation. By significantly restricting growth, the environmental impact of the projected growth would increase development pressure elsewhere in the region. Because a reduced development density conflicts with regional plans, would relocate impacts outside of the city, and would not meet the project objectives, this option was not evaluated in this EIR.

7.3 ALTERNATIVES SELECTED FOR FURTHER ANALYSIS

Based on the criteria listed in Section 7.1.1, the following alternatives have been determined to represent a reasonable range of alternatives that have the potential to feasibly attain most of the basic objectives of the project but may avoid or substantially lessen any of the significant effects of the project. These alternatives are analyzed in detail in Sections 7.4 and 7.5.

- **No Project/Existing General Plan.** This is the only EIR alternative that is specifically required by the CEQA Guidelines (Section 15126.6[e]) The No Project alternative does not represent a no-development or no-change scenario because the City has an existing General Plan. Further, the land use diagram in the existing General Plan is unchanged by the proposed project. This alternative will focus on the potential result of not updating the General Plan to include changes to state law since the adoption of the current plan in 2001 and not reducing the proposed Planning Area.
- **Increased Density.** As a General Plan Update, the City can consider changes to the land use pattern. A greater density and intensity would reduce the need for annexation in the future, which would reduce the potential to convert undeveloped land to urban uses and potentially protect biological resources. This alternative could also reduce VMT with corresponding reductions in air quality and GHG emission impacts.

An EIR must identify an “environmentally superior” alternative, and where the No Project Alternative is identified as environmentally superior, the EIR is then required to identify as environmentally superior an alternative from among the others evaluated. Each alternative's environmental impacts are compared to the proposed project and determined to be environmentally superior, neutral, or inferior. Section 7.6 identifies the environmentally superior alternative. The preferred land use alternative (proposed General Plan) is analyzed in detail in Chapter 5 of this Draft EIR.

7.4 NO PROJECT/ EXISTING GENERAL PLAN ALTERNATIVE

Under the No Project / Existing General Plan Alternative, the proposed General Plan and all of its updates to the Land Use Element, Mobility and Circulation Element, Economic Development Element, Housing Element, Parks and Recreation Element, Open Space and Resource Conservation Element, Public Facilities and Services Element, Safety Element, and Noise Element would not be implemented by the City, and the current General Plan would remain in effect.

7.4.1 Aesthetics

In this alternative, the city would be developed under the existing land use plan and would involve new development and redevelopment in the same areas as the proposed General Plan. Under this alternative, the proposed land use designation changes would not be implemented. The visual character under the proposed project and this alternative would be similar. Future development under this alternative would be required to comply with the design standards and guidelines for residential and commercial uses. Therefore, aesthetics impacts as a result of this alternative would be similar to the proposed General Plan and would be less than significant.

7.4.2 Agriculture and Forestry Resources

In this alternative, the city would be developed under the existing land use plan and would involve new development and redevelopment in similar areas as the proposed General Plan. The city does not have lands designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. Furthermore, there are no forestlands or Williamson Act contracts within city limits; outside of city limits, Rio Vista contains land with Williamson Act contracts. The status of these contracts include mixed-enrollment agriculture land and nonprime agriculture land. Therefore, agriculture and forestry resources impacts as a result of this alternative would be similar to the proposed General Plan and would be less than significant.

7.4.3 Air Quality

Similar to the proposed General Plan, this alternative would result in an increase in emissions in the city that have the potential to exceed the SMAQMD's significance thresholds. Therefore, like the proposed General Plan, implementation of this alternative would result in significant impacts regarding a cumulatively considerable net increase of pollutants for which the project region is in nonattainment. However, unlike the proposed General Plan, this alternative would not result in an update to the City’s General Plan,

which includes updated policies that have the potential to reduce air quality emissions and a more efficient land use plan. In comparison to the proposed General Plan, this alternative would have greater air quality impacts, and impacts would remain significant and unavoidable.

7.4.4 Biological Resources

This alternative would be within the same footprint as the proposed General Plan; therefore, under this alternative, biological resource impacts would be similar to the proposed General Plan. A number of special status plant species and special status wildlife species are known to occur in the vicinity of the city. Federal and state regulations require development projects to assess and mitigate potential biological resources within a project site. Similar to the proposed General Plan, the current General Plan would increase development and could result in loss of habitat. However, unlike the proposed General Plan, this alternative would not update the City's General Plan, which includes updated policies with the potential to reduce conflicts with wildlife corridors and sensitive natural communities. Because project-specific information is unknown, buildout under this alternative, as with the proposed project, could impact sensitive or special-status plant and animal species. Therefore, impacts would be similar and less than significant.

7.4.5 Cultural Resources and Tribal Cultural Resources

Cultural resource impacts are primarily associated with potential ground disturbance and development of previously undisturbed areas, or impacts to potential historic structures (building additions, demolition, etc.). Impacts to tribal cultural resources would primarily be associated with potential ground disturbance and development of previously undisturbed areas. This alternative would be within the same footprint as the proposed General Plan. As future ground-disturbing activities could occur under this alternative, impacts would be similar to the proposed project.

Tribal mitigation measures for the protection of tribal cultural resources would be applicable under this alternative. Additionally, both the proposed General Plan and this alternative would comply with federal and state regulations pertaining to the protection and preservation tribal cultural resources. Although the City's consultation process under both AB 52 and SB 18 and mitigation measures would continue to apply under this alternative, it is possible that development under the No Project Alternative could result in an impact to cultural resources and would therefore be significant and unavoidable like the proposed project.

7.4.6 Energy

Under this alternative, energy impacts would be less than the proposed General Plan due to the decrease in building intensity and population growth when compared to the proposed General Plan. All the California Building Code energy conservation requirements would still apply under this alternative because they are not based on the General Plan. As with the proposed General Plan, impacts would be less than significant.

7.4.7 Geology, Soils, and Mineral Resources

The proposed General Plan and this alternative would result in similar impacts to geology, soils, and mineral resources. As with the proposed General Plan, individual development projects under this alternative would be required to prepare site-specific geotechnical investigations to evaluate seismic, liquefaction, ground settlement, paleontological resources, and/or soil expansion hazards. All development projects would be required to comply with existing federal, state, and local regulations, such as the California Building Code and statewide Construction General Permit. The City's standard mitigation measures and municipal code would apply to development under both the proposed project and this alternative.

The City of Rio Vista is designated MRZ-1, which is an area where adequate information indicates that no significant mineral deposits are present, and MRZ-4, which is an area where available information is inadequate for assignment to any other MRZ. Therefore, the City does not have any identified or identifiable significant mineral deposits. However, the alluvial deposits of sand and gravel along the historic course of the Sacramento River represent an important mineral resource. Although future projects would not occur within these areas while mining operations are in effect, development that is near or adjacent to the mine may expose residents to dust as a result of mining and/or transporting sand and gravel products. However, all future development would comply with the AQMD Rule 403, which requires dust control for earth-moving activities and would reduce potential impacts on workers and residents. Impacts under this alternative would be similar to the proposed General Plan and would result in less than significant impacts upon implementation of mitigation measures.

7.4.8 Greenhouse Gas Emissions

Similar to the buildout of the proposed General Plan, this alternative would result in an increase in GHG emissions in the city. While there is less development potential under this alternative, the net benefits of the proposed General Plan goals, policies, and actions would not be realized. In summary, overall impacts from GHG emissions under this

alternative would be greater when compared to the proposed General Plan and remain significant and unavoidable.

7.4.9 Hazards and Hazardous Materials

Under both this alternative and the proposed General Plan, land uses throughout the city would be required to comply with existing federal, state, and local regulations governing use, storage, transport, and disposal of hazardous materials and hazardous wastes. This alternative would result in similar impacts to the proposed General Plan, and impacts would remain less than significant.

7.4.10 Hydrology and Water Quality

This alternative would have similar hydrology and water quality impacts as the proposed General Plan. During construction, project-specific Stormwater Pollution Prevention Plans (SWPPP) are required to be prepared in accordance with the site-specific sediment risk analyses based on the grading plans. The SWPPP must describe construction BMPs that address pollutant source reduction and provide measures/controls necessary to mitigate potential pollutant sources. Given that all future development projects would be required to comply with local, state, and federal regulations, impacts of this alternative would be similar to the proposed project and would be less than significant.

7.4.11 Land Use and Planning

This alternative would not result in the proposed land use designation changes. Additionally, the existing General Plan would not reflect new state and local planning laws. Therefore, the land use impacts would be slightly increased under this alternative in comparison to the proposed General Plan. Like the proposed General Plan, impacts would be less than significant.

7.4.12 Noise

As the development pattern under this alternative and the proposed project would be similar, construction and operational noise impacts would also be similar. Development under both this alternative and the proposed project would be required to comply with the City's noise ordinance. Given that project-specific information is unknown, future development under this alternative, as with the proposed project, would result in significant and unavoidable impacts.

7.4.13 Population and Housing

According to the 2001 General Plan EIR, growth projections of the current General Plan were determined to be consistent with ABAG projections. While the proposed General Plan buildout would exceed ABAG's growth projections, the City has a requirement to fulfill its RHNA allocation to accommodate projected growth in the city. Additionally, as demonstrated in the EIR, the city can accommodate potential growth. Neither this alternative nor the proposed project would displace people or housing. Therefore, impacts would be similar and less than significant.

7.4.14 Public Services and Recreation

This alternative would result in less population and employment than the proposed General Plan. Therefore, impacts to public services and recreation would be reduced under this alternative. Future development allowed under both the current General Plan and the proposed General Plan would pay development impact fees, the City's General Fund, would comply with the City's Municipal Code and would be subject to discretionary review by the appropriate agencies, committees, or the City Council. Overall, impacts related to public services and recreation would be less than the proposed General Plan and remain less than significant.

7.4.15 Transportation

Population and employment under this alternative would be less than in the proposed General Plan. Vehicle miles traveled (VMT) per service population would be slightly higher than for the proposed General Plan. While the development pattern under this alternative would be similar to the proposed project, the proposed General Plan would include policies that would improve circulation and reduce VMT. The proposed project would result in a significant and unavoidable impact as a result of cumulative VMT. Overall, impacts would be similar to the proposed General Plan and significant and unavoidable.

7.4.16 Utilities and Service Systems

Impacts on public utilities (sewer, water, stormwater, solid waste) would be slightly reduced compared to the proposed General Plan because this alternative would result in a reduction in population and employment growth, thereby reducing demand. Furthermore, individual projects would be subject to City and agency permits, fees, and applications to ensure that these projects would not pose burdens on the existing

infrastructure. Therefore, impacts would be less than the proposed project and remain less than significant.

7.4.17 Wildfire

Development patterns under this alternative and the proposed project would be similar; development would be allowed in areas designated as a WUI. Future development would be required to comply with local, state, and federal regulations. Therefore, impacts would be similar to the proposed General Plan and less than significant with mitigation incorporated.

7.4.18 Conclusion

The No Project/Existing General Plan Alternative would be similar to the proposed project for aesthetics, agriculture and forestry resources, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, mineral resources, noise, population and housing, transportation, tribal cultural resources, and wildfire. Impacts to energy, public services, recreation, and utilities and services would be reduced compared to the proposed project. Impacts to air quality, GHG emissions, and land use and planning would be greater than the proposed project. The No Project Alternative would generally meet the project objectives, but to a lesser extent. Additionally, the No Project/Existing General Plan Alternative would lack a comprehensive set of updated policies designed to reduce the environmental impact of development in the city. While some regulatory provisions stem from state law, the proposed General Plan includes additional policies that exceed these minimum requirements, which enhance sustainability, environmental protection, and long-term resilience.

The new General Plan establishes a more sustainable and efficient land use pattern, supporting mixed-use development, multimodal transportation, and resource conservation. It introduces stronger policies on regulating development to minimize environmental impacts while promoting economic growth and housing opportunities. Compared to the existing General Plan, the proposed update provides a more balanced and forward-thinking approach, ensuring that future development aligns with the City's objectives and community needs.

7.5 INCREASED DENSITY ALTERNATIVE

Under the Increased Density Alternative, the City would establish a policy that, on average, new development will need to be at the 90th percentile of the density range established in the General Plan. Under normal circumstances, development is assumed to be around middle of the density range. HCD considers feasible development to be 80 percent of the density range when calculating housing potential. One intent of this alternative is to encourage an efficient use of existing land, thereby reducing the need to annex large areas of land in the future. This alternative would require less land to accommodate the projected population.

This alternative would result in more intense development standards, such as increased lot coverage and/or higher or larger buildings in the existing land use designations. Increased densities may further result in additional customers for transit and mixed-use projects. This alternative could change the character of the city by making it more urban. Though land would be used more efficiently under this alternative, taller and larger buildings could also result in changes to the character of some neighborhoods. This alternative would reduce VMT compared to the proposed project because more mixed use and housing would be encouraged on less land. Although this alternative would foster a more efficient use of land with the same benefits, there may not be a market for or acceptance of more intensive development in the city, and therefore this alternative might constrain development in the city. This could create a demand for growth outside of the city, in the SOI and beyond.

7.5.1 Aesthetics

This alternative would include the proposed project's goals, policies, and programs, which are more comprehensive and detailed than those in the existing General Plan and would reduce impacts to less than significant. It is likely that higher and larger buildings would be needed to meet the policy. Most buildings in the city are less than three stories. This alternative could result in higher buildings in some areas that could change the visual character of the city. However, all new development would be subject to the policies in the General Plan, and because the alternative does not include density outside of the existing density range, impacts to aesthetics would be greater than for the proposed project but would remain less than significant.

7.5.2 Agriculture and Forestry Resources

Like the proposed project, this alternative would have no impact related to the conversion of Prime Farmland to nonagricultural use. The benefits under this alternative, as opposed to the proposed project, would be the reduced potential to convert agricultural lands; however, some conversion would still occur. Therefore, impacts to agriculture and forestry resources would remain less than significant but less than the proposed project.

7.5.3 Air Quality

This alternative assumes the same amount of development as the proposed project but on less land and with more efficient development. Because this alternative promotes mixed-use development, the resultant greater pedestrian and transit use would reduce vehicle trips and associated emissions. Therefore, air quality impacts would be reduced compared to the proposed project. While impacts under this alternative would be less than those of the proposed project, they would likely remain significant and unavoidable.

7.5.4 Biological Impacts

The Increased Density Alternative could, depending on the location of development, have a reduced impact on biological resources compared to the proposed General Plan Update. Under this alternative, increasing density in urban areas could lessen impacts to biological resources by preventing expansion into rural areas that would potentially impact more habitat areas. Therefore, the impacts of this alternative would be less than those of the proposed project and would remain less than significant.

7.5.5 Cultural Resources and Tribal Cultural Resources

The goals, policies, standards, and programs that pertain to the designation and preservation of archaeological resources as stated in the General Plan EIR would be enforced, which would reduce impacts to less than significant. Additionally, compliance with California Health and Safety Code Section 7050.5(b) would reduce impacts to less than significant if human remains are discovered during construction activities. Ground-disturbing activities would still occur throughout the city under this alternative scenario. Development anticipated near historic properties of the city would still occur under this impact; therefore, historic resources impacts would remain significant and unavoidable under this alternative. Impacts under this alternative compared with the proposed project would be reduced slightly as more land would remain undisturbed but would remain significant and unavoidable since development can still occur near historic sites.

7.5.6 Energy

This alternative would likely result in larger buildings accommodating the same population growth. In general, an apartment or mixed-used building uses less energy than a comparable number of single-family homes. Energy use would likely be less than the proposed project and would also be less than significant.

7.5.7 Geology, Soils, and Mineral Resources

Under this alternative, development of urban land uses would occur, just as with the proposed General Plan Update. Impacts related to construction erosion and risks from seismic and soil hazards would occur in the same manner as anticipated for the proposed project. This alternative would involve construction of buildings or structures in the city and, as a result, potential hazards related to soils could still occur. Although the overall amount of land needed to meet the target population for 2045 would be less compared to the proposed project, this alternative would result in earth disturbance and resultant potential soil erosion impacts. Overall, the impacts are reduced slightly, and the significance determination would remain the same as the proposed project.

Like the proposed project, this alternative would have a less than significant impact related to mineral resources. The City of Rio Vista is designated as MRZ-1, which is an area where adequate information indicates that no significant mineral deposits are present, and MRZ-4, which is an area where available information is inadequate for assignment to any other MRZ. Therefore, the city does not have any identifiable significant mineral deposits. Future projects would not occur in known mining areas north of the Rio Vista city limits but could expose residents to dust as a result of mining and/or transporting sand and gravel products. Regardless, all future development would comply with AQMD Rule 403, which requires dust control for earth-moving activities and would reduce potential impacts of on workers and residents.

Furthermore, surface development projects on property with mineral rights must meet either the use permit conditions or the planned unit development permit conditions, which would ensure that impacts related to locally important mineral recovery sites are less than significant. Overall, the impacts are reduced slightly since less land would be developed under this alternative, and the impact would remain less than significant.

7.5.8 Greenhouse Gas Emissions

Under this alternative, increased density of development could allow for alternative modes of travel in the city, which could result in fewer GHG emissions per unit. However, as noted in Section 4.8, *Greenhouse Gas Emissions*, due to the programmatic and conceptual nature of the proposed project and uncertainties related to future individual projects, it is uncertain whether future projects' GHG emissions would be below the SMAQMD's significance threshold. Therefore, though impacts would be reduced slightly for this alternative, GHG emissions impacts would remain significant and unavoidable, as with the proposed project.

7.5.9 Hazards and Hazardous Materials

Under both the Increased Density Alternative and the proposed project, new development would be subject to local, state, and federal regulations that would reduce the potential for hazards and hazardous materials impacts. The proposed project and this alternative would result in less than significant impacts related to routine transport, use, disposal, or accidental release of hazardous materials; interference with an adopted emergency response plan; public health hazards from development on a known hazardous materials site; and hazardous materials near schools. Although this alternative would result in less land being developed, it would have similar impacts as the proposed project because of the wildfire risks in the city. Therefore, impacts would be similar to the proposed project in regard to exposing people and structures in these wildfire areas. This alternative would result in similar impacts to the proposed General Plan, and impacts would remain less than significant.

7.5.10 Hydrology and Water Quality

This alternative would result in higher-density development potential within the city. Higher-density development (greater ground coverage) can change existing hydrology patterns. Implementation of this alternative would still involve stormwater discharges and increase impervious surfaces in urban land uses like the proposed project, but on less land. The proposed General Plan Update includes many policies to avoid adverse effects related to hydrology and water quality, including a no increase in peak-flow runoff policy for development projects in all drainage basins and the use of drainage systems to ensure water filtration and ongoing water quality in accordance with the City's MS4 permit. In addition, all policies and measures that are a part of the proposed General Plan Update would be included in this alternative. This alternative also assumes that future mixed-use development would comply with standard conditions for hydrology and water quality and

impacts would be less than significant. The impact of this alternative on hydrology and water quality would be the same as that of the proposed project and would be less than significant.

7.5.11 Land Use and Planning

This alternative would not change the land use pattern of the city but would result in more development of each residential land use type. Under the Increased Density Alternative, higher buildings would be needed in key focus areas to allow more density. This alternative could change the character of Rio Vista by making some of the neighborhoods more urban than suburban. Though land would be used more efficiently, this alternative could also result in redevelopment or demolition of buildings and changing the character of the city with the addition of larger buildings. Implementation of this alternative would result in greater land use impacts than those anticipated from the proposed project.

7.5.12 Noise

Noise during the construction phase of development would be slightly greater than estimated for the proposed project because larger buildings can take longer to construct. As with the proposed project, compliance with the City's Municipal Code would ensure that noise attenuation is provided to minimize temporary noise impacts associated with construction. However, because development would be in key focus areas, other portions of the city may not be subject to the same amount of construction noise as with the proposed project. This alternative may result in a reduction of traffic noise due to the reduction of residential uses elsewhere in the city as well as the increase in the use of public transit and active transportation. Nonetheless, though impacts would be reduced, they would remain significant and unavoidable.

7.5.13 Population and Housing

This alternative would increase development intensity but would not change the amount of growth projected for the proposed project. The alternative would result in a more efficient use of land that could reduce the cost of some housing types. This alternative, as with the proposed project, would not displace people and/or housing. Therefore, population and housing impacts of this alternative would be the same as the proposed General Plan and remain less than significant.

7.5.14 Public Services and Recreation

In general, having more intensive development would reduce response times for services and increase use of existing parks. While the overall impact of services would be like those of the proposed project, in some neighborhoods, a substantial increase in population in one area would create increased demand for parks. However, this alternative is assumed to include the same uses, only more densely developed, so the demand for services and recreational uses would be the same as the proposed project. Because the alternative would implement the policies of the proposed General Plan Update that would address the need for future services, such as parks, the impact of this alternative on public services would be the same as the proposed project and would result in a less than significant impact.

7.5.15 Transportation

Because the increase in building size would place more residents and customers close to services, this alternative would reduce VMT. This alternative would encourage mobility options other than driving and support the goal of reduced VMT. The impact of this alternative on transportation would be less than the impact of the proposed project. However, it would remain significant and unavoidable due to the programmatic nature of the proposed project and uncertainty of individual projects.

7.5.16 Utilities and Service Systems

Larger buildings and those that might change existing land uses could create an increased demand for utilities in some areas of the city. This could result in a need to upgrade or replace older (or smaller) water or sewer infrastructure to meet the new demand. As with the proposed project, individual projects would be subject to City permits, fees, and applications to ensure that these projects would not pose burdens on the existing infrastructure. Therefore, impacts would be similar and less than significant.

7.5.17 Wildfire

The Increased Density Alternative would accommodate the same amount of growth as the proposed project but on less land. Under both the alternative and the proposed project, people and infrastructure would be exposed to wildfire risk. Under this alternative, impacts would be similar to the proposed project and would be less than significant with mitigation measures incorporated.

7.5.18 Conclusion

The Increased Density Alternative would be similar to the proposed project for hazards and hazardous materials, hydrology and water quality, population and housing, public services and recreation, utilities and service systems, and wildfire. This alternative would result in less impacts compared to the proposed project to agriculture and forestry resources, air quality, biological resources, cultural and tribal cultural resources, energy, greenhouse gas emissions, geology and soils and mineral resources, noise, and transportation. This alternative would result in greater impacts to aesthetics and land use and planning compared to the proposed project.

The Increased Density Alternative would generally meet the project objectives. Although this alternative would require less land to achieve the target population in 2045, it would also require more intensified development, increased lot coverage, and mid- to high-rise buildings, which are not currently present in the city. Additionally, mixed-use projects may not be feasible due to limited demand for such developments in both the current and future Rio Vista market. A key aspect of Rio Vista's character is its lower-density neighborhoods, and existing land values do not support higher-density forms of development. As a result, this alternative could significantly hinder development in the city.

The City is already pursuing some density increases by proposing the adoption of residential and mixed-use land use designations that would allow for greater density compared to the existing General Plan. By selectively increasing density in certain areas, the concept can be explored at a scale that aligns with the existing community and market dynamics.

7.6 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires a lead agency to identify the "environmentally superior alternative," and in cases where the "No Project" alternative is environmentally superior to the proposed project, the environmentally superior development alternative must be identified. This can be challenging for a General Plan Update EIR because much of the public outreach and refinement of the General Plan is designed to address community concerns and environmental issues.

One alternative has been identified as "environmentally superior" to the proposed project:

- Increased Density Alternative

7. Alternatives to the Proposed Project

Table 7-2, *Alternatives Impact Comparison*, summarizes the environmental impacts of each of the alternatives when compared to the proposed General Plan Update. The table lists the level of significance of the impacts of the proposed General Plan Update to each environmental topic of the Draft EIR and shows whether the impacts anticipated under each proposed alternative would be less, similar, or greater than the proposed General Plan. It should be noted that all impacts identified as being significant and unavoidable (i.e., air quality, cultural resources and tribal cultural resources, GHG emissions, noise, and transportation) would remain significant and unavoidable under each alternative despite whether the alternative would reduce the intensity of the impact.

Table 7-2 Alternatives Impact Comparison

Topic	Proposed General Plan	No Project/Existing General Plan Alternative	Increased Density Alternative
Aesthetics	LTS	=	+
Agriculture & Forestry Resources	LTS	=	–
Air Quality	S/U	+	–
Biological Resources	LTS	=	–
Cultural Resources and Tribal Cultural Resources	S/U	=	–
Energy	LTS	–	–
Geology and Soils and Mineral Resources	LTS/M	=	–
GHG Emissions	S/U	+	–
Hazards and Hazardous Materials	LTS	=	=
Hydrology and Water Quality	LTS	=	=
Land Use and Planning	LTS	+	+
Noise	S/U	=	–
Population and Housing	LTS	=	=
Public Services and Recreation	LTS	–	=
Transportation	S/U	=	–
Utilities and Service Systems	LTS	–	=
Wildfire	LTS/M	=	=

Notes: NI= No Impact; LTS = Less Than Significant; LTS/M = Less Than Significant with Mitigation Incorporated; S/U = Significant and Unavoidable
(–) The alternative would result in less of an impact than the proposed General Plan.
(+) The alternative would result in greater impacts than the proposed General Plan.
(=) The alternative would result in the same/similar impacts as the proposed General Plan.

In addition to comparing alternatives to the impacts of the proposed project, CEQA also requires that alternatives be evaluated against the primary project objectives. Table 7-3, *Primary Objectives Alternative Comparison*, notes whether the alternatives meet the primary project objectives. The Increased Density Alternative largely meets all the project objectives while still accommodating the projected growth for the city.

Table 7-3 Primary Objectives Alternative Comparison

Objective	No Project/ Existing General Plan Alternative	Increased Density Alternative
Revitalize Downtown and the Waterfront District. Promote a downtown that is a vibrant destination with unique retail, entertainment, arts, dining, and lodging options. Support and attract businesses. Provide the infrastructure needed to support growth in the downtown and waterfront area. Promote, incentivize and foster the expansion of retail, commercial and housing uses in the downtown and waterfront area. Preserve the historic character of downtown while supporting new development.	No	Yes, but to a lesser extent
Improve Mobility and Access for All Users. Provide a safe, efficient, and accessible roadway system that serves the mobility needs of all users. Improve the City's circulation network to provide safe travel for pedestrians, bicyclist, vehicles, and trucks. Efficiently move people and goods without compromising quality of life, safety, and smooth traffic flow for residents and businesses.	No	Yes
Support a Variety of Housing Options. Encourage a mix of housing types to create diverse neighborhoods that meet the needs of all Rio Vista residents. Promote the building, retention, and renovation of housing to meet the needs of all incomes, ages, and abilities.	Yes, but to a lesser extent	Yes
Foster a Sustainable Community. Plan for public facilities that respond to the community's growing needs and a changing environment. Ensure today's needs are met without jeopardizing the community's ability to meet future needs. Promote high-quality, long-lasting development that allows residents to meet daily needs, such as education of our children, shopping, employment, and recreation, in close proximity to their homes. Encourage resource-efficient building techniques, materials, and other principles of green building design in new building construction and renovations.	No	Yes
Offer Recreational Opportunities. Ensure all residents have easy access to recreational opportunities, such as parks, play fields, river frontage, walking and biking paths and trails. Expand parks and recreational programs to serve both residents and visitors. Provide a variety of sports and activities for Rio Vista residents of all ages.	Yes	Yes

7. Alternatives to the Proposed Project

Table 7-3 Primary Objectives Alternative Comparison

Objective	No Project/ Existing General Plan Alternative	Increased Density Alternative
Foster Economic Growth. Promote a strong local economy by fostering the growth and expansion of a diversified business community. Support businesses that create a wide range of jobs for Rio Vista's resident workforce. Make forward-thinking investments that position Rio Vista to respond successfully to an evolving economy.	Yes, but to a lesser extent	Yes
Promote Fiscal Strength. Plan land uses at the appropriate scale and intensity, and location to provide the right balance of revenues and costs to allow the City to deliver the services expected by the community. Manage fiscal resources in a responsible, efficient, and effective manner.	No	Yes, but to a lesser extent
Promote a Healthy Community. Create a community that has options for residents to live a healthy lifestyle and provides access to health care services. Address the impact of Highway 12 traffic. Rio Vista experiences heavy commuter traffic traveling generally between Stockton and Fairfield on a daily basis, Monday through Friday. This traffic is not generated by Rio Vista homes or businesses, but significantly impacts the community. The proposed General Plan offers near, mid-, and long-term strategies to reduce the impacts of this traffic on the community.	No	Yes, but to a lesser extent

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