

DRAFT ENVIRONMENTAL IMPACT REPORT RIO VISTA ARMY RESERVE CENTER REDEVELOPMENT PLAN

State Clearinghouse #2010012028



Prepared by



THE CITY OF RIO VISTA

With the Assistance of
WAGSTAFF/MIG

August 2010

CONTENTS

	<u>Page</u>
1. INTRODUCTION	1-1
1.1 EIR Purpose and Intended Use.....	1-2
1.2 Proposed Project.....	1-3
1.3 Environmental Documentation Approach.....	1-3
1.4 EIR Scope	1-6
1.5 Reader's Guide to the Draft EIR.....	1-8
1.6 EIR Process and Opportunity to Comment	1-11
1.7 Fiscal Impacts	1-11
2. SUMMARY	2-1
2.1 Proposed Project.....	2-1
2.2 Areas of Concern	2-4
2.3 Summary of Significant Impacts and Mitigation Measures.....	2-5
2.4 Alternatives.....	2-45
3. PROJECT DESCRIPTION	3-1
3.1 Project Area Location and Characteristics	3-1
3.2 Project Background.....	3-9
3.3 Project Objectives	3-12
3.4 Anticipated Redevelopment Actions.....	3-13
3.5 Development Assumptions and Time Frame	3-18
3.6 Required Project Documentation and Approvals	3-20
4. LAND USE AND PLANNING	4-1
4.1 Setting	4-1
4.2 Pertinent Plans and Policies.....	4-5
4.3 Impacts and Mitigation Measures.....	4-14
5. POPULATION, HOUSING AND EMPLOYMENT	5-1
5.1 Setting	5-1
5.2 Pertinent Plans and Policies.....	5-4
5.3 Impacts and Mitigation Measures.....	5-5
6. CULTURAL AND HISTORIC RESOURCES	6-1
6.1 Setting	6-1
6.2 Pertinent Plans and Policies.....	6-10
6.3 Impacts and Mitigation Measures.....	6-15

7.	AESTHETICS AND COMMUNITY DESIGN.....	7-1
7.1	Setting.....	7-1
7.2	Pertinent Plans and Policies.....	7-3
7.3	Impacts and Mitigation Measures.....	7-6
8.	TRANSPORTATION AND CIRCULATION.....	8-1
8.1	Methodology.....	8-1
8.2	Existing Conditions.....	8-3
8.3	Pertinent Plans and Policies.....	8-10
8.4	Impacts and Mitigation Measures.....	8-15
9.	PUBLIC SERVICES AND UTILITIES	9-1
9.1	Plans and Policies Pertinent to All Services.....	9-1
9.2	Water Service.....	9-4
9.3	Wastewater Service	9-11
9.4	Police.....	9-14
9.5	Fire Protection and Emergency Medical Services.....	9-16
9.6	Schools.....	9-19
9.7	Library Service	9-22
9.8	Parks and Recreation.....	9-24
9.9	Solid Waste Disposal and Recycling.....	9-33
10.	BIOLOGICAL RESOURCES	10-1
10.1	Setting.....	10-1
10.2	Pertinent Plans and Policies.....	10-7
10.3	Impacts and Mitigation Measures.....	10-12
11.	DRAINAGE AND WATER QUALITY	11-1
11.1	Setting.....	11-1
11.2	Pertinent Plans and Policies.....	11-5
11.3	Impacts and Mitigation Measures.....	11-10
12.	NOISE.....	12-1
12.1	Setting.....	12-1
12.2	Pertinent Plans and Policies.....	12-5
12.3	Impacts and Mitigation Measures.....	12-8
13.	AIR QUALITY	13-1
13.1	Setting.....	13-1
13.2	Pertinent Regulations, Plans and Policies.....	13-8
13.3	Impacts and Mitigation Measures.....	13-11
14.	CLIMATE CHANGE.....	14-1
14.1	Setting.....	14-1
14.2	Pertinent Plans and Policies.....	14-5
14.3	Impacts and Mitigation Measures.....	14-9

15.	HAZARDS AND HAZARDOUS MATERIALS	15-1
15.1	Setting	15-1
15.2	Pertinent Plans and Policies.....	15-8
15.3	Impacts and Mitigation Measures.....	15-12
16.	GEOLOGY AND SOILS.....	16-1
16.1	Setting	16-1
16.2	Pertinent Plans and Policies.....	16-6
16.3	Impacts and Mitigation Measures.....	16-8
17.	CEQA-REQUIRED ASSESSMENT CONCLUSIONS	17-1
17.1	Growth-Inducing Impacts	17-1
17.2	Unavoidable Significant Adverse Impacts	17-4
17.3	Irreversible Environmental Changes	17-6
17.4	Cumulative Impacts.....	17-7
17.5	Effects Found Not to Be Significant.....	17-7
18.	ALTERNATIVES TO THE PROPOSED PROJECT	18-1
18.1	Alternative 1: No Build.....	18-4
18.2	Alternative 2: No Project.....	18-6
18.3	Alternative 3: Redevelopment Plan With Reuse of Historic District	18-8
18.4	Alternative 4: Redevelopment Plan Without Parks and Recreation	18-9
18.5	Alternative 5: Redevelopment Plan with Delta Interpretive Center	18-11
18.6	Environmentally Superior Alternative	18-16
19.	MITIGATION MONITORING AND REPORTING	19-1
19.1	Mitigation Monitoring Requirements.....	19-1
19.2	Mitigation Monitoring Checklist Format	19-1
20.	APPENDICES.....	20-1
20.1	Program EIR Authority	
20.2	Notice of Preparation and Responses	
20.3	CEQA Standards for EIR Adequacy	
20.4	CEQA Definitions of "Mitigation"	
20.5	EIR Authors	
20.6	Army and SHPO Correspondence Regarding Historic Resources	

List of Figures

3.1	Project Location	3-2
3.2	Proposed Project Area.....	3-4
3.3	Existing Buildings and Facilities	3-5
4.1	Surrounding Land Use	4-3
6.1	Sacramento River Flood Control Project.....	6-3
6.2	Sacramento River Flood Control Project Key Improvements Near Rio Vista	6-5
6.3	Proposed U.S. Engineer Storehouse Historic District.....	6-8
8.1	Existing Roadway System	8-5
8.2	Study Roadway Segments and Intersections	8-6
8.3	Average Daily Traffic Volumes – Existing Conditions	8-7
8.4	Peak Hour Traffic Volumes and Lane Configurations – Existing Conditions	8-8

8.5	Proposed Bicycle Facilities	8-12
8.6	Project Trip Distribution.....	8-18
8.7	Average Daily Traffic Volumes--Existing Plus Project Conditions.....	8-19
8.8	Peak Hour Traffic Volumes and Lane Configurations--Existing Plus Project Conditions	8-20
8.9	Average Daily Traffic Volumes--Cumulative No Project Conditions.....	8-21
8.10	Peak Hour Traffic Volumes and Lane Configurations--Cumulative No Project Conditions	8-22
8.11	Average Daily Traffic Volumes--Cumulative Plus Project Conditions	8-23
8.12	Peak Hour Traffic Volumes and Lane Configurations--Cumulative Plus Project Conditions	8-24
8.13	Intersection Traffic Control and Lane Configurations--Existing Plus Project Conditions with Mitigation	8-30
8.14	Intersection Traffic Control and Lane Configurations--Cumulative Plus Project Conditions with Mitigation	8-38
9.1	Existing and Proposed Parks and Trails	9-25
10.1	Biological Resources	10-2
11.1	Flood Insurance Rate Map.....	11-4
15.1	Hazardous Materials Investigation and Removal Areas	15-4
16.1	Earthquake Faults Map.....	16-3

List of Tables

1.1	Definitions of Key EIR Terminology	1-10
2.1	Summary of Impacts and Mitigation Measures.....	2-6
3.1	Existing Buildings and Facilities.....	3-8
3.2	Project Tax Increment Revenue, Debt and Time Limits	3-15
3.3	Project Revenues and Costs	3-15
3.4	Proposed Park, Recreation and Community Facilities	3-16
3.5	Proposed Site Preparation, Hazardous Materials Clean-Up and Infrastructure Improvements	3-17
3.6	Development Assumptions	3-19
4.1	Cumulative Impact Development Assumptions	4-6
4.3	Population, Housing and Employment Forecasts--Rio Vista and Solano County	5-2
6.1	Buildings and Structures within the Proposed Historic District	6-9
8.1	Level of Service Criteria--Roadways	8-2
8.2	Level of Service Criteria--Signalized Intersections	8-4
8.3	Level of Service Criteria--Unsignalized Intersections	8-4
8.4	Roadway Level of Service--Existing Conditions	8-9
8.5	Intersection Level of Service--Existing Conditions.....	8-11
8.6	Project Trip Generation.....	8-17
8.7	Roadway Level of Service--Existing Plus Project Conditions	8-26
8.8	Intersection Level of Service--Existing Plus Project Conditions	8-27
8.9	Existing Plus Project Conditions--Roadways.....	8-28
8.10	Existing Plus Project Conditions--Intersections	8-29
8.11	Roadway Level of Service--Cumulative Conditions	8-34
8.12	Intersection Level of Service--Cumulative Conditions	8-35
8.13	Cumulative Conditions--Roadways.....	8-36
8.14	Cumulative Conditions--Roadways.....	8-37

9.1	City-Wide Development Impact Fees	9-3
9.2	City of Rio Vista Supply Wells	9-6
9.3	City of Rio Vista Historical Water Supply Deliveries	9-6
9.4	Existing and Projected Water Supply and Demand.....	9-7
9.5	Project and Cumulative Wastewater Generation (MGD)	9-14
9.6	RDUSD Rio Vista Schools Capacity and Enrollment.....	9-21
9.7	Existing Parks Acreage, Ratios and Deficiencies without and with the Project	9-27
10.1	Special Status Species Known to Occur or Potentially Occurring within the Proposed Project Area or in the Adjoining River	10-4
12.1	Definitions of Acoustical Terms	12-2
12.2	Typical Sound Levels Measured in the Environment and Industry	12-3
12.3	Noise Standards for New Uses Affected by Traffic and Airport Noise	12-6
12.4	Noise Standards for New Uses Affected by Non-Transportation Noise	12-7
12.5	Construction Equipment Noise Level Ranges	12-10
12.6	Typical Noise Level Ranges at 50 Feet, L_{eq} in dBA, at Construction Sites.....	12-11
12.7	Streets with Larger Increases in Traffic	12-14
13.1	Major Criteria Air Pollutants and Health Effects.....	13-3
13.2	Ambient Air Quality Standards and Solano County Attainment Status.....	13-4
13.3	Monitored Local Air Pollutant Concentrations.....	13-7
15.1	Investigation and Remediation Activities Undertaken by the Army	15-2
17.1	2001 Base Reuse Plan Jobs, City Revenue and Economic Multiplier Effects.....	17-3
18.1	Alternatives Comparison to the Project: Development Assumptions.....	18-2
18.2	Alternatives Comparison to the Project	18-3
19.1	Mitigation Monitoring Checklist--Rio Vista Army Reserve Center Redevelopment Plan.....	19-2

1. INTRODUCTION

1.1 EIR PURPOSE AND INTENDED USE

The Redevelopment Agency of the City of Rio Vista (Redevelopment Agency) is proposing to establish a redevelopment project area (proposed Project Area) encompassing the 28.16-acre site of the former Rio Vista Army Reserve Center and to adopt a redevelopment plan for the area (proposed Redevelopment Plan) pursuant to California Community Redevelopment Law (CRL) (California Health and Safety Code Section 33000 et seq.). The proposed new Project Area and Redevelopment plan is intended to enable blight elimination and public-private revitalization within the proposed Project Area.

Adoption and implementation of the proposed Redevelopment Plan would provide tools and funding that would be used by the Redevelopment Agency to carry out or indirectly encourage demolition, rehabilitation, and new building and facilities construction within the proposed Project Area. These redevelopment activities would result in physical changes to the environment and are thus considered a "Project" as defined by Section 15378 of the California Environmental Quality Act (CEQA) Guidelines.

This environmental impact report (EIR) has been prepared by the City of Rio Vista (City), the project lead agency,¹ pursuant to the California Community Redevelopment Law (California Health and Safety Code section 33333.3) and all relevant sections of the California Environmental Quality Act (CEQA).

This EIR is an informational document intended to inform the Rio Vista Redevelopment Agency, Rio Vista City Council, Rio Vista Planning Commission, and the general public of the potential environmental consequences of the proposed Redevelopment Plan, including the actions that would be taken to implement the Redevelopment Plan and the anticipated development that would be facilitated by the Redevelopment Plan. As the lead agency, the City also intends that

¹CEQA Guidelines define the "lead agency" as the public agency that has the principal responsibility for carrying out or approving a project. The City of Rio Vista (together with the Redevelopment Agency of the City of Rio Vista, a "Responsible Agency"), would be principally responsible for carrying out the proposed redevelopment plan (including making various specific future implementation decisions).

this EIR serve as the CEQA-required environmental documentation for consideration of this Project by other responsible agencies,¹ trustee agencies² and affected taxing entities.³

1.2 PROPOSED PROJECT

The proposed Redevelopment Plan would provide the Agency with powers, duties and obligations to implement and further the program generally formulated in this Plan for the redevelopment, rehabilitation, and revitalization of the Project Area. The proposed Redevelopment Plan would:

- Establish the Redevelopment Project Area;
- Establish a tax increment limit of \$50 million;
- Establish a bond debt limit of \$15 million;
- Establish a period to incur debt of 20 years;
- Establish a Redevelopment Plan effectiveness period of 30 years; and
- Establish a time period for collection of tax increment/repayment of debt of 45 years.

The Redevelopment Agency would receive tax increment revenue over the approximately 45-year duration of the Redevelopment Plan. As required by law, 20 percent of the tax increment revenue would go to affordable housing and an estimated 47 percent to statutory payments to other taxing entities. The remaining tax increment revenue would be available for other redevelopment activities and debt repayment. Anticipated other redevelopment activities include infrastructure improvements, site preparation; asbestos and lead-based paint clean-up; the development of park, recreation and community facilities; the provision of other Project Area rehabilitation and economic development incentives; and affordable housing.

The proposed Redevelopment Plan would not authorize the use of eminent domain within the proposed Project Area; the property within the proposed Project Area is owned by the City. No changes in Project Area General Plan land use designations or zoning are proposed as a part of the Project. The proposed Redevelopment Plan would assist the Agency in removing economic and physical blighting hindrances to General Plan build-out.

¹Under the CEQA Guidelines, the term "responsible agency" includes all public agencies, other than the lead agency, which have discretionary approval power over aspects of the project for which the lead agency has prepared an EIR.

²Under the CEQA Guidelines, the term "trustee agency" means a state agency having jurisdiction by law over natural resources affected by the project that are held in trust by the people of California, such as the Department of Fish and Game and the State Lands Commission.

³Pursuant to Health and Safety Code section 33333.3, this EIR will be distributed to each affected taxing entity. "Affected taxing entities" are defined in Health and Safety Code section 33353.2 as those governmental taxing agencies that levy a property tax on all or any portion of the proposed Project Area.

As used in this EIR, the terms "*Redevelopment Plan*," "*Plan*" and "*Project*" are defined to mean the proposed Rio Vista Army Reserve Center Redevelopment Plan and the various local and state approvals, entitlements, permits, and actions that may be required to implement the Plan. The term "*proposed Project Area*," as used in this EIR, refers to the 28.16-acre proposed redevelopment project area, the site of the former Rio Vista Army Reserve Center, comprising Assessor's Parcel Number 0049-320-060. The term "*City*," as used in this EIR, is defined as the City of Rio Vista, acting through its legislative body, the City Council, and its various administrative departments. The terms "*Redevelopment Agency*," or "*Agency*," as used in this EIR, are defined as the Redevelopment Agency of the City of Rio Vista, the legal entity responsible for adopting and implementing the Redevelopment Plan.¹

A more detailed description of the Project is provided in Chapter 3, Project Description.

1.3 ENVIRONMENTAL DOCUMENTATION APPROACH

1.3.1 Program EIR

To meet CEQA requirements, this EIR has been prepared as a "program EIR" for the proposed Redevelopment Plan and associated actions under authority of section 21090 of the Public Resources Code and sections 15168 (Program EIR) and 15180 (Redevelopment Plans) of the CEQA Guidelines. CEQA Guidelines section 15168 stipulates that a program EIR may be prepared on a series of actions that can be characterized as one large project and are related either: (1) geographically; (2) as logical parts in the chain of contemplated actions; (3) in connection with issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program; or (4) as individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects which can be mitigated in similar ways. The currently proposed Redevelopment Plan, and the series of actions required for its implementation, are characterized by all four of these relationships.

CEQA Guidelines section 15180 (Redevelopment Projects), which specifically addresses the environmental documentation requirements for redevelopment plans and future redevelopment actions undertaken pursuant to any redevelopment plan, includes the following three subsections, pursuant to Public Resources section 21090:

(a) An EIR for a redevelopment plan may be a Master EIR, a program EIR, or a project EIR. An EIR for a redevelopment plan must specify whether it is a Master EIR, a program EIR, or a project EIR.

(b) If the EIR for a redevelopment plan is a project EIR, all public and private activities or undertakings pursuant to or in furtherance of the redevelopment plan shall constitute a single project, which shall be deemed approved at the time of adoption of the redevelopment plan by the legislative body. The EIR in connection with the redevelopment plan shall be submitted in accordance with Section 33352 of the Health and Safety Code.

¹The CEQA Guidelines define the "lead agency" as the public agency that has the principal responsibility for carrying out or approving a project.

If a project EIR has been certified for the redevelopment plan, no subsequent EIRs are required for individual components of the redevelopment plan unless a subsequent EIR or a supplement to an EIR would be required by Section 15162 or 15163.

(c) If the EIR for a redevelopment plan is a Master EIR, subsequent projects which the lead agency determines as being within the scope of the Master EIR will be subject to the review required by Section 15177. If the EIR for a redevelopment plan is a program EIR, subsequent activities in the program will be subject to the review required by Section 15168.

Pursuant to the CEQA guidelines cited above, this EIR has been prepared as and is specified to constitute a **program EIR**. As a program EIR, this EIR addresses the aggregate, area-wide, cumulative impacts of the entire "series of related actions" (all of the various redevelopment activities) anticipated with adoption of the proposed Redevelopment Plan (CEQA Guidelines section 15168). The entire series of related redevelopment program actions is treated as a single "project." The EIR describes the anticipated "future growth scenario" that could foreseeably occur in the Project Area, and the associated area-wide environmental impacts, if all of the proposed Redevelopment Plan-identified individual redevelopment actions are adopted and implemented.

In addition to the broad-based impact analyses in this EIR that are based on the general growth-inducing effects of the project, certain activities proposed under the Redevelopment Plan would occur at specific sites and therefore may also result in more specific environmental impacts. This EIR describes these potential site-specific impacts to the extent that currently available information on these activities permits. As more details regarding these anticipated site-specific activities become available in the future, the City may determine that additional project-specific CEQA review will be required, consistent with the programmatic nature of this "first tier" EIR (see subsection 1.5.2 which follows).

1.3.2 Additional CEQA Requirements for Subsequent Actions

As set forth under CEQA, the scope of this first tier program EIR is limited to description of those project-related environmental impacts and mitigation measures that can be identified at this time, without being highly speculative. The more detailed impacts of future individual redevelopment actions resulting from the Redevelopment Plan that are not yet specifically known are not described in this program EIR, rather, the CEQA-required environmental review of such subsequent individual actions will be undertaken at a later time, if and when such actions come before the City in the form of a more detailed development application or public improvement project. At that time, when the details of the individual action are sufficiently defined, the action will be subject to its own, site-specific, environmental determination by the City that the action either: (1) is fully covered within the scope of this EIR (in which case no new environmental document would be required), (2) is exempt from CEQA under section 15061 (Review for Exemption) of the CEQA Guidelines, (3) warrants preparation of a Negative Declaration or Mitigated Negative Declaration under section 15070 (Decision to Prepare a Negative or Mitigated Negative Declaration) of the CEQA Guidelines, or (4) warrants preparation of a Subsequent EIR or Supplemental EIR limited to certain site-specific issues under sections 15162 (Subsequent EIRs and Negative Declarations) or 15163 (Supplement to an EIR) of the CEQA Guidelines.

CEQA Guidelines section 15168(c) (Program EIR--Use with Later Activities) details how this program EIR can be used with future activities to determine whether additional environmental documentation is needed. If applicable, feasible mitigation measures and alternatives

developed in this program EIR must be incorporated into future activities within the Project Area. If the City determines under section 15162 (Subsequent EIRs and Negative Declarations) that no new environmental effects would occur and no new mitigation measures would be required in connection with a later activity, the City can approve the activity as being within the scope of this program EIR, and no additional environmental documentation would be required. For site-specific activities, a checklist (such as the Initial Study checklist) may be used to determine whether the environmental effects of the activity were covered in this program EIR. (See appendix 21.1 of this EIR for a further explanation of the "program EIR" purpose and application.)

1.3.3 Future Development Assumptions

This program EIR examines the potential overall effects of the proposed Redevelopment Plan assuming its objectives to stimulate physical revitalization and economic development in the Project Area are fully achieved.

The proposed Redevelopment Plan Amendment establishes maximum time limits for plan effectiveness--i.e., for undertaking redevelopment activities in the Project Area.¹ It is assumed in this EIR that the major portion of the actual physical redevelopment activities associated with the Redevelopment Plan would be successfully completed over the next approximately 20 years, or by the year 2030.

State law mandates that all activities undertaken by a redevelopment agency, including all development activities facilitated by a redevelopment plan, must be consistent with the goals and policies of the community's general plan and associated regulatory provisions, including the community's zoning ordinance.

The existing adopted Rio Vista General Plan policies for the Project Area as they now exist or may hereafter be amended, have been expressly incorporated into the proposed Redevelopment Plan.

The currently adopted Rio Vista General Plan 2001 land use designation for the Project Area, Army Base Reuse Area Special District, permits a mix of land uses and associated intensity/density limitations, development performance standards and design objectives that has been largely derived from a Rio Vista Army Base Reuse Plan (Reuse Plan) prepared in 1998 by the then Rio Vista Local Redevelopment Authority and supplemented in 2001 by the City. The General Plan identifies a reuse program for the Project Area that would ultimately consist of some combination of the following public and private uses:

- *Educational/institutional (Delta science and interpretive center, laboratories, riverine/ environmental research facilities, in response to a proposal to develop a Rio Vista Estuarine research station in the Project Area by the Interagency Ecological Program, a consortium of State and Federal agencies including the State Department of Water Resources and U.S. Bureau of Reclamation),*
- *Commercial recreation (lodge, retail, marina, boat launch),*
- *Public active and passive recreation (sports fields, environmental/discovery park, amphitheater, community/recreation center, swimming pool),*

¹See Table 3.7, Summary of Redevelopment Plan Time and Dollar Limits, in chapter 3 of this EIR.

- *Recreation-serving retail (restaurant, convenience mart, bait shop, boat/kayak rentals, sports equipment sales), and*
- *Ancillary multifamily residential (limited to short-term occupancy for visiting officials, scholars, students, and faculty).*

For purposes of "worst case" environmental impact analysis, the impact evaluations in this EIR are based on the assumption that (1) the combination of Redevelopment Plan authorized activities will be fully successful in facilitating desired economic development and revitalization of the Project Area; (2) as a result, the Project Area will experience buildout at a maximum level consistent with policies and guidelines of the General Plan; and (3) the majority of that development will occur by the year 2030. Section 3.5 of this EIR provides more detail on the maximum Project Area buildout scenario assumed in this EIR.

The actual increment of growth in the Project Area between now and the year 2030 with the proposed Redevelopment Plan may eventually prove to be less than what has been assumed in this EIR. Given the length of the anticipated redevelopment activity period (approximately 20 years), there could also be future deviations in the timing, order, or magnitude of the various individual Redevelopment Plan-facilitated actions, or in the various controlling General Plan policies, from what is anticipated in this program EIR. Such deviations are not expected to significantly change the impact and mitigation findings of this program EIR.

1.4 EIR SCOPE

Pursuant to section 15082 of the CEQA Guidelines, the scope of this EIR includes all environmental issues to be resolved that are currently known to the City, including those issues and concerns identified as possibly significant by the City in its preliminary review of the proposed action, and by other interested agencies and individuals in response to the City-issued Notice of Preparation of a Draft EIR (NOP) and during a City-conducted public scoping meeting. The City published an NOP on January 15, 2010, in accordance with CEQA Guidelines Section 15082, for the purpose of soliciting views of Solano County, responsible agencies, agencies with jurisdiction by law, trustee agencies, and interested parties requesting notice, as to the appropriate scope and content of the EIR. The NOP comment period extended from January 15 to February 15, 2010. The NOP and the two comment letters received during the NOP review period are presented in Appendix 21.2. A public scoping meeting was conducted by the City on February 10, 2010.

Environmental issues and concerns identified through this scoping process include the potential impacts of the Redevelopment Plan, all Redevelopment Plan-facilitated redevelopment activities, and associated growth-inducing effects on:

- (1) existing and future **land use and planning** characteristics in the Project Area;
- (2) existing and future **population, housing and employment** characteristics in the Project Area, and in the City as a whole;
- (3) existing and future **aesthetic and community design** (visual) conditions in the Project Area;

- (4) existing and future **transportation** conditions related to the Project Area, including effects on peak-period roadway system volumes, operation and safety, and on general transit, pedestrian, and bicycle needs;
- (5) existing and future **public services and utilities** provisions and needs in the Project Area, including water, wastewater, police, fire and emergency medical services, schools, libraries, parks and recreation, and solid waste and recycling;
- (6) **biological resources** within and adjacent to the Project Area, particularly on any significant aquatic riparian, wetland, or other special habitat values;
- (7) **cultural resources** in the Project Area, including the potential demolition of CEQA-defined historical resources;
- (8) existing and future **drainage and water quality** conditions within and downstream of the Project Area, including storm drainage, flood hazards and water quality;
- (9) existing and future **noise** conditions within and near the Project Area, including the anticipated impacts of projected vehicular traffic on ambient noise levels along the principal travel routes serving the area;
- (10) local and regional **air quality** conditions, based on the impact assessment guidelines and modeling requirements of the Yolo-Solano Air Quality Management District;
- (11) **climate change**, including the anticipated impacts of project-related vehicular traffic and energy use on greenhouse gas emissions, as well as the effects of climate change (e.g., sea level rise) on project-facilitated development, following the latest CEQA guidelines; and
- (12) existing and future potentials for **hazards and hazardous material** exposure, including possible construction period or long-term exposure to soil, surface, and groundwater contamination and toxic building materials, and the anticipated effects of hazardous materials clean-up activities.

More issues and concerns pertaining to the scope of the EIR raised in response to the January 15, 2010 NOP and at the February 10, 2010 scoping meeting included the following:

- The need for the evaluation of biological resources impacts to include consideration of potential project effects on sensitive fish, wildlife and plant species habitats on the site and in the adjacent river, such as potential habitat for Swainson's hawk, western burrowing owl and San Joaquin spearscale; the need to use positive occurrence databases; the need for protocol-level surveys before each future site-specific project occurs; and the potential need for a California Endangered Species Act permit and a Lake and Streambed Alteration Agreement in order to implement certain future site-specific actions.
- The need to address project impacts on Highway 12; the need to consider the Solano Transportation Authority study on the potential relocation of the Highway 12 bridge and how that relocation could affect the Project; and need to consider how project-related transit and rideshare facilities, and facilities designed to attract bicycle commuters, may affect project trip generation.
- The need to consider opportunities for water transit service to avoid traffic impacts.

- The need to address the potential project-related loss of significant historic resources and opportunities for rehabilitation and reuse, even if such reuse does not fully avoid a significant impact under CEQA.
- The need to consider a future Project Area development scenario that does not include the currently planned park, sports fields, sport courts, and community center components, in light of the emerging possibility of use of the entire Project Area for research station use.
- The need to consider possible inclusion of additional territory within the proposed Project Area so that park and recreation facilities, and a research station use could both be accommodated.

The first five of these issues and concerns are addressed in this Draft EIR; the suggested need to consider additional territory, is a non-environmental question that may be considered by Redevelopment Agency and City decision-makers in their deliberations on the Project, but are not further analyzed in this EIR. The boundaries of the proposed Project Area were carefully selected by the Redevelopment Agency based on the Rio Vista Army Reserve Center site boundaries, the city limits, and identification of blighted and other conditions that occur within the boundary (e.g., must be 80 percent urbanized, etc.), meet California Community Redevelopment Law parameters, and could benefit from redevelopment activities. Such a combination of blight and other conditions was not identified outside the proposed Project Area.

1.5 READERS GUIDE TO THE DRAFT EIR

1.5.1 EIR Organization and Content

This Draft EIR document is organized into the following chapters:

- *Chapter 1: Introduction*, which provides an introduction and overview of the Project; the EIR purpose and intended use; the EIR scope, issues and concerns; and the EIR organization and content;
- *Chapter 2: Summary*, which provides a brief Project description and a synopsis of the environmental impacts of the Project, recommended mitigation measures, and the level of significance of impacts before and after mitigation;
- *Chapter 3: Project Description*, which describes the proposed Redevelopment Plan in detail, including the project location, background and history, basic objectives, proposed redevelopment actions, and development assumptions used in the EIR;
- *Chapters 4 through 16*, which provide an analysis of the potential environmental impacts of the Project by topic (Land Use and Planning; Population, Housing and Employment; Cultural Resources; etc.) and identify mitigation measures to avoid or reduce identified significant impacts;
- *Chapter 17: CEQA-Required Assessment Considerations*, which summarizes the EIR information in terms of growth-inducing impacts, unavoidable significant adverse effects, irreversible environmental changes, cumulative impacts, and effects found not to be significant; and

- *Chapter 18: Alternatives*, which comparatively evaluates five alternatives to the Project, including the CEQA-required “No Project Alternative.”

The environmental evaluations for each environmental topic presented in Chapters 4 through 16 follows the same format in each chapter, consisting of the following subsections:

- *Setting* describes current conditions with regard to the environmental factor reviewed. the existing setting;
- *Pertinent Plans and Policies* describes federal, State and local laws, regulations and policies applicable to each environmental review topic.
- *Standards of Significance* explains the conditions under which an impact will be judged to be significant in this EIR. These standards are based primarily on Appendix G of the CEQA Guidelines. A quantified threshold may be identified, such as an ambient air quality standard, or conditions or occurrences that would be regarded as significant may be used.
- *Impacts and Mitigation Measures* describes Project and cumulative impacts, whether each impact is significant or less than significant, mitigation measures for identified significant impacts, and whether each impact would be significant or less than significant after the implementation of mitigation measures.

Significant impacts are numbered consecutively and associated with a mitigation measure that is correspondingly numbered. This numbering system is carried over into the Summary to allow easy location of the document’s conclusions regarding a particular impact.

1.5.2 "Significant Impacts" and Other EIR Terminology

This EIR identifies the “significant impacts” of the Project and corresponding mitigation measures that would avoid or reduce those impacts to less-than-significant levels. Where it is determined in this EIR that a particular impact cannot be avoided or reduced to a less-than-significant level by the identified mitigation measures, the EIR identifies that impact as “significant and unavoidable.” Such impacts are listed together in Section 17.2 of this EIR, “Unavoidable Significant Impacts.” These particular EIR terms (“significant,” “unavoidable,” “mitigation”), and other key CEQA terminology used in this EIR, are defined in Table 1.1.

Table 1.1

DEFINITIONS OF KEY EIR TERMINOLOGY	
Significant/Potentially Significant Impact	"Significant effect on the environment" means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic and aesthetic significance. (CEQA Guidelines, section 15382.) <i>"An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant."</i> (CEQA Guidelines, section 15382.)
Significant Cumulative Impact	"Cumulative impacts" are defined as <i>"two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts."</i> (CEQA Guidelines, section 15355.)
Unavoidable Significant Impact	"Unavoidable significant impacts" are defined as those significant adverse environmental impacts for which either no mitigation or only partial mitigation is feasible. If the project is to be approved without imposing an alternative design, the Lead Agency must include in the record of the project approval a written statement of the specific reasons to support its action--i.e., a "statement of overriding considerations." (CEQA Guidelines, sections 15126.2(b) and 15093(b).)
Significance Criteria	The criteria used in this EIR to determine whether an impact is or is not <i>"significant"</i> are based on (a) CEQA-stipulated "mandatory findings of significance"--i.e., where any of the specific conditions occur under which the Legislature and the Secretary of Resources have determined to constitute a potentially significant effect on the environment, which are listed in CEQA Guidelines section 15065; (b) specific criteria that a Resources Agency has determined are "normally" considered to constitute a "significant effect on the environment;" (c) the relationship of the project effect to the adopted policies, ordinances and standards of the City and of responsible agencies; and/or (d) commonly accepted practice and the professional judgment of the EIR authors and Lead Agency staff.
Mitigation Measures	For each significant impact, the EIR must identify a specific "mitigation" measure or set of measures capable of <i>"(a) avoiding the impact altogether by not taking a certain action or parts of an action; (b) minimizing impacts by limiting the degree or magnitude of the action and its implementation; (c) rectifying the impact by repairing, rehabilitating, or restoring the impacted environment; (d) reducing or eliminating the impact over time by preservation or maintenance operations during the life of the action; or (e) compensating for the impact by replacing or providing substitute resources or environments."</i> (CEQA Guidelines, section 15370.)
SOURCE: Wagstaff/MIG 2010.	

1.6 EIR PROCESS AND OPPORTUNITY TO COMMENT

As required by State law, this Draft EIR will be available for review by the public and interested persons, agencies and organizations for at least a 45-day period. The Agency will hold a public hearing on the Draft EIR during the review period. Interested persons are invited to attend the hearing to offer oral comments. Comments on the Draft EIR may also be submitted in writing to:

Emi Theriault, Community Development Director
City of Rio Vista Redevelopment Agency
One Main Street
Rio Vista, CA 94571
Telephone: (707) 374-2205
FAX: (707) 374-6763
E-mail: etheriault@ci.rio-vista.ca.us

Following the close of the public comment period, a Final EIR will be prepared to respond in writing to all substantive comments related to the Draft EIR environmental issues and the CEQA process received during the 45-day public review period and provide any related revisions made to the Draft EIR in response to the comments. The Final EIR will be available for public review prior to consideration of Final EIR certification by the Rio Vista City Council as adequate under CEQA.

If the Redevelopment Plan is adopted, the City Council may require mitigation measures specified in the EIR as conditions of adoption. Alternatively, the City Council could require other mitigation measures deemed to be effective for the identified impacts, or it could find that mitigation measures cannot be feasibly implemented or mitigation is outside the jurisdiction of the City. For each identified significant impact for which no feasible mitigation measure has been identified, the City Council will be required to adopt a finding that the unavoidable impact(s) has been determined to be acceptable because specific overriding considerations indicate that the benefits of the Redevelopment Plan outweigh the unavoidable impact(s).

1.7 FISCAL IMPACTS

The fiscal effects of the proposed Redevelopment Plan are not identified in this EIR. The fiscal impacts of the Project are non-environmental effects and are therefore being evaluated concurrently with, but independently of, the EIR process.¹ Pursuant to California Community Redevelopment Law, the Redevelopment Agency circulates to all affected taxing entities, before the circulation of this Draft EIR, a *Preliminary Report* describing the fiscal effects of the Project. The Redevelopment Agency has consulted with each affected taxing entity regarding the financial effects of the proposed Redevelopment Plan.

¹Section 15131 of the CEQA Guidelines allows the Lead Agency to present economic or social information on a project in whatever form the Agency desires to allow such factors to be considered in reaching a decision on a project, but also stipulates that "Economic or social effects of a project shall not be treated as significant effects on the environment." In accordance with the California Community Redevelopment Law, required economic and social information will be provided in the *Preliminary Report* and *Report to Council* prepared by the Redevelopment Agency pursuant to Health and Safety Code sections 33344.5 and 33352, respectively.

2. SUMMARY

This chapter presents a summary of the contents of this Draft EIR. The chapter summarizes the following: (1) the proposed project; (2) related environmental issues of concern; (3) identified significant impacts and mitigation measures; (4) identified unavoidable significant impacts; and (5) the evaluation of alternatives to the project.

2.1 PROPOSED PROJECT

2.1.1 Project Background

The Redevelopment Agency of the City of Rio Vista (Agency) is proposing to establish a redevelopment project area (proposed Project Area) encompassing the 28.16-acre site of the former Rio Vista Army Reserve Center, and to adopt a Redevelopment Plan for the area (proposed Redevelopment Plan).

California Community Redevelopment Law (CRL) (California Health and Safety Code Section 33000 et seq.) authorizes the local establishment of redevelopment agencies and redevelopment projects to facilitate economic revitalization and alleviate adverse conditions. Chapter 4.5 of the CRL provides redevelopment agencies with special legislative authority to create redevelopment project areas on the site of former military facilities.

The property was used between 1911 and 1952 by the U.S. Army Corps of Engineers as a storehouse, wharf and maintenance complex in support of the Corps' Sacramento River Delta dredging and flood control activities. By 1944, the corps Sacramento River Flood Control Project was essentially complete. From 1952 to 1964, the facility was designated as the Rio Vista Transportation Corps marine Depot for maintenance and storage of military harbor craft (small freighters, tugs, barges, floating cranes, etc.). In 1964, the Army transferred an approximately 4-acre portion of the complex to the U.S. Coast Guard for establishment of the U.S. Coast Guard Station Rio Vista. In 1980, the remaining 28.16-acre portion of the facility was redesignated as the Rio Vista Army Reserve Center for the training of marine-oriented reserve units. The Reserve facility was deactivated in 1989, formally closed in 1995, conveyed by the Army to the City of Rio Vista in 2003, and annexed to the City in 2006.

A 1998 Rio Vista Army Base Reuse Plan prepared by the City in 1998 (and supplemented in 2001) described a proposed public-private redevelopment concept for the property, including possible development of a research station, citywide-serving recreation uses, and visitor-serving uses, all oriented toward the river and delta. The Interagency Ecological Program (IEP), a consortium of the Department of Water Resources (DWR), the U.S. Bureau of Reclamation, and seven other State and Federal agencies, has indicated interest in the proposed Project Area as an ideal location for a Rio Vista Estuarine Research Station, which would consolidate into one location all member agency personnel, boats and other equipment needed to implement the IEP's Bay-Delta monitoring and research activities. The California Department of Fish and Game has indicated interest in locating fish hatcheries within the proposed Project Area.

2.1.2 Project Area Characteristics

The proposed Project Area is an approximately 28.16-acre parcel (Assessor's Parcel Number 0049-320-060), which extends 2,052 feet along Beach Drive and approximately 1,600 feet along the Sacramento River, and is approximately 680 feet wide.

There are 14 buildings, with a total floor area of 56,415 square feet, and 10 other facilities remaining within the proposed Project Area from the former military uses. The remaining buildings include a ship repair shop and two warehouses, each over 10,000 square feet in size, one larger and two smaller administration buildings, seven shops and storage buildings, and a guardhouse. The other associated facilities include a well, an elevated water storage tank, water, sewer and storm drainage pump stations, a marine railway where boats were drawn out of the water for repair, four docks and 14 moorings in the river.

The proposed Project Area is characterized by physical and economic blighting conditions. A 2009 Redevelopment Feasibility Study prepared on behalf of the Agency determined that blighting conditions exist within the proposed Project Area, including buildings in which it is unsafe or unhealthy for persons to live or work, and conditions that prevent or substantially hinder the viable use or capacity of buildings or lots. All existing structures within the proposed Project Area were built before 1960, have not been maintained for 20 years, and have been unsecured and subject to vandalism. Blighting characteristics of the existing buildings include faulty weather protection, broken windows and doors, sagging roofs, holes in walls, exposed wiring, deteriorated eaves or overhangs, and deteriorated or damaged exterior building and roofing materials.

2.1.3 Project Objectives

The Project is intended to enable blight elimination and foster public-private revitalization within the proposed Project Area. Realization of planned new uses within the proposed Project Area will require financial assistance towards hazardous materials clean-up, blight removal, and infrastructure improvements. The Agency has identified the following primary objectives of the Project.

- **Clean Up Remaining Hazardous Materials Contamination.** The buildings and structures remaining in the proposed Project Area contain asbestos-containing building materials and lead-based paint. The Project would enable the City to remediate these conditions or to assist with the cost of remediation, and thereby attract private investment.
- **Provide Needed Infrastructure.** Costly road, water, sewer and storm drainage improvements are needed to attract private investment. Without proper facilities, the proposed Project Area may remain stagnant and improperly utilized.
- **Stimulate Economic Development and Recovery from the Base Closure.** The Project would generate revenue to secure funding, eliminate blight, stimulate economic development, provide employment and speed up the community's stalled recovery from the base closure.
- **Attract the Rio Vista Estuarine Research Station.** The City has been working with the DWR to locate the Rio Vista Estuarine Research Station within the proposed Project Area.

- **Develop New Citywide-Serving Recreational Amenities.** Intended public recreational uses for the proposed Project Area include a community center, outdoor sports fields and courts, an interactive children's park, a picnic area, a riverfront promenade, a small public marina/cove, and a dry boat storage facility.
- **Help Meet the City's Needs for Affordable Housing.** As stipulated by California Community Redevelopment Law, 20 percent of tax increment revenue would go toward increasing, improving and preserving low and moderate income housing.

2.1.4 Anticipated Project Actions

The proposed Redevelopment Plan would provide "... the Agency with powers, duties and obligations to implement and further the program generally formulated in this Plan for the redevelopment, rehabilitation, and revitalization of the Project Area." The Project would:

- establish the Redevelopment Project Area;
- establish a tax increment limit of \$50 million;
- establish a bond debt limit of \$15 million;
- establish a period to incur debt of 20 years;
- establish a Redevelopment Plan effectiveness period of 30 years; and
- establish a time period for collection of tax increment/repayment of debt of 45 years.

The City and Agency would use various approaches to financing Project costs, most notably tax increment revenue, but also grants and loans from the County, State and federal governments, and issuing bonds, proceeds from lease or sale of City-owned property, revenue from participation in development, or loans from private financial institutions.

The Agency would receive tax increment revenue over the approximately 45-year duration of the Redevelopment Plan. As required by law, 20 percent of the tax increment revenue would go to affordable housing and an estimated 47 percent to statutory pass-through payments to other taxing entities. The remaining tax increment revenue would be available for projects and debt repayment.

Anticipated Project actions include asbestos and lead-based paint clean-up; site preparation; infrastructure improvements; the development of park, recreation and community facilities; rehabilitation and economic development incentives; and affordable housing improvement. The Redevelopment Agency anticipates the following specific redevelopment activities:

- site and infrastructure improvements, including demolition, asbestos and lead-based paint clean-up, marina docks and berths, walkways, a plaza and riverfront promenade, streets and parking, landscaping, and water, sewer and storm drainage facilities; and
- park, recreation and community facilities projects, including a multi-purpose community center, outdoor sports fields and courts, children's park, and picnic area;
- affordable housing projects or programs outside the proposed Project Area.

2.1.5 Development Assumptions and Time Frame

The EIR assumes that the Project would facilitate the maximum intensity of development allowed by the City's General Plan within the proposed Project Area--i.e., a 0.2 FAR (floor area ratio), for a total of 244,000 square feet of development, composed of the following uses:

- a 110,000-square-foot research station,
- a 150-room lodge with meeting and retail space (104,000 square feet),
- a 9,000-square-foot restaurant,
- a 21,000-square-foot community center, and
- 12.3 acres of parks and sports fields.

The EIR assumes the community center and sports fields would be located generally on the western portion of the site and remaining uses oriented toward the river on the eastern portion of the site. The EIR assumes that all of the existing buildings on the site would be demolished.

The development assumptions listed above are for EIR analysis purposes only and may be conservatively high. They include related capital improvements identified in the Preliminary Report and represent a mix of uses considered feasible and desirable by the City and Agency based on the Rio Vista Army Base Reuse Plan and discussions with the DWR regarding its Rio Vista Estuarine Research Station proposal, consistent with the conditions of the transfer of the former base and the General Plan. However, no specific development program or site layout is proposed as part of the Project. The precise mix and layout of uses that is ultimately developed may be different due to changing opportunities and needs over time.

Although the Redevelopment Plan would be effective for approximately 45 years, to 2044, the EIR conservatively assumes full buildout of the proposed Project Area would occur within approximately 20 years, or by 2030.

2.2 AREAS OF CONCERN

The Redevelopment Agency issued a Notice of Preparation (NOP) of the Draft EIR on January 15, 2010 for a 30-day review period and held a scoping meeting on the Draft EIR on February 10, 2010. The NOP and the two comment letters received during the NOP review period are presented in Appendix 21.2 herein. Issues raised in response to the NOP and at the scoping meeting included the following:

- The need to consider Project impacts on biological resources, including habitats for sensitive fish, wildlife and plant species on the site and in the adjacent river, such as Swainson's hawk, western burrowing owl and San Joaquin spearscale; use of positive occurrence databases; the need for protocol-level surveys before each future site-specific project; and the potential need for a California Endangered Species Act permit and a Lake and Streambed Alteration Agreement.

- The need to consider project-related traffic impacts on Highway 12, the Solano Transportation Authority study on the potential relocation of the Highway 12 bridge and how that relocation could affect the Project; and the effect of the Project on transit and rideshare facilities, and the possible effect on Project Area facilities designed to attract bicycle commuters on Project trip generation.
- The need to consider a potential Project-related loss of significant historic resources, and Project-related opportunities for rehabilitation and reuse of historic resources, even if such reuse does not fully meet a standard that would avoid an unavoidable significant impact under CEQA.
- The need to consider the potential inability to accommodate the proposed park, sports fields and courts, and community center within the proposed Project Area, in light of the emerging possibility of use of the entire proposed Project Area for a research station use.
- The need to consider potential inclusion of additional territory within the proposed Project Area so that park and recreation facilities, and a research station use could both be accommodated.
- The need to consider opportunities for water transit service to avoid traffic impacts.

2.3 SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES

Based on the initial Draft EIR scoping process, the existing environmental setting and associated significant impacts have been evaluated and described in Chapters 4 through 16 herein related to:

- Land Use and Planning
- Cultural Resources
- Aesthetics
- Transportation
- Public Services and Utilities
- Biological Resources
- Hydrology
- Noise
- Air Quality
- Climate Change

The Draft EIR identifies feasible mitigation measures that, in most cases, would reduce these significant impacts to a less-than-significant level. The impacts and mitigation measures identified in this Draft EIR are summarized in Table 2.1. The table is organized to correspond with the environmental factors discussed in Chapters 4 through 16. Table 2.1 is arranged in five columns: (1) environmental impacts; (2) significance before mitigation; (3) mitigation measures; (4) mitigation responsibility; and (5) significance after mitigation. A series of mitigation measures is noted where more than one mitigation may be required to reduce an impact to a less-than-significant level. The full description of each impact and mitigation measure is presented in Chapters 4 through 16.

Table 2.1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impacts	Potential Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Potential Significance With Mitigation
<i>CULTURAL AND HISTORIC RESOURCES</i>				
<p>Impact 6-1: Disturbance of Archaeological Resources. Redevelopment activities or development facilitated by the Project could potentially disrupt, alter or eliminate as-yet undiscovered archaeological sites, potentially including Native American remains. This possibility represents a <i>potentially significant impact</i>.</p>	S	<p>Mitigation 6-1: If prehistoric or historic-period archaeological resources are encountered during grading or excavation, work shall avoid altering the materials and their context until a qualified professional has evaluated, recorded and determined appropriate treatment of the resource, in consultation with the City. Project personnel shall not collect cultural resources. Cultural resources shall be recorded on DPR 523 historic resource recordation forms. If it is determined that the proposed development could damage a unique archaeological resource, mitigation shall be implemented in accordance with Public Resources Code Section 21083.2 and Section 15126.4 of the CEQA Guidelines, with a preference for preservation in place. This measure would reduce the potential impact on archaeological resources to a <i>less-than-significant level</i>.</p>	City and Agency	LS
<p>Impact 6-2: Loss of Historic Resources. A 1997 historic resource evaluation report prepared for the U.S. Army Corps of Engineers by JRP Historical Consulting Services concluded that, although none of the remaining structures originally constructed by the Corps</p>	S	<p>Mitigation 6-2: Before undertaking any activity involving the suggested historic district or its contributing structures, including the removal of hazardous building materials, the City or project sponsor shall evaluate the proposed historic district and its contributing buildings,</p>	City and Agency	LS/SU

S = Significant
 LS = Less than significant
 SU = Significant unavoidable impact
 NA = Not applicable

Impacts	Potential Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Potential Significance With Mitigation
<p>of Engineers to support dredging activities for its Sacramento River Flood Control Project (1914-1944) appeared to be individually eligible for listing in the National Register of Historic Places (National Register), 12 of the buildings collectively appeared to be eligible for listing as a historic district, suggested by the JRP report as the "U.S. Engineer Storehouse Historic District." Subsequent to issuance of the JRP report, the Army determined that none of the buildings individually or collectively met the eligibility requirements for listing on the National Register, and the State Historic Preservation Officer (SHPO) concurred with the Army determination. Despite these determinations, however, the suggested historic district nonetheless still appears to be eligible for listing in the California Register of Historic Resources (California Register) and therefore is a historical resource for purposes of CEQA. The Project could therefore damage, alter, obscure or eliminate character-defining elements of the suggested U.S. Engineer Storehouse Historic District so as to cause a loss of integrity and loss of continued eligibility to the California Register. This possibility represents a potentially significant impact.</p>		<p>structures, landscape features and setting to identify the character-defining spaces, features, materials, spatial relationships and setting that make it significant and <u>either</u>:</p> <p>(a) Adhere to the Secretary of the Interior's Standards for the Rehabilitation of Historic Properties in all work within and adjacent to the suggested historic district so that the integrity of the historic district and its continued eligibility to the California Register of Historic Resources is preserved.</p> <p>Implementation of mitigation alternative 6-2(a) would reduce the potential impact on historical resources to a less-than-significant level.</p> <p style="text-align: center;"><u>or</u></p> <p>(b) If implementation of mitigation alternative 6-2(a) above is not feasible and a character-defining element of the historic district would be damaged, altered, obscured or eliminated so as to cause a loss of integrity and loss of continued eligibility to the California Register of Historic Resources, the project sponsor shall nevertheless implement all feasible mitigation as required by CEQA, consisting of the following measures in the following order, to the extent feasible:</p>		

-
- S = Significant
 - LS = Less than significant
 - SU = Significant unavoidable impact
 - NA = Not applicable

Impacts	Potential Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Potential Significance With Mitigation
		<p>(1) Document the suggested historic district and its contributing elements before any changes that would cause a loss of integrity and loss of continued eligibility to the California Register of Historic Resources. The documentation shall adhere to the Secretary of the Interior's Standards for Architectural and Engineering Documentation. The documentation shall be made available for inclusion in the Historic American Building Survey (HABS) or the Historic American Engineering Record (HAER) Collections in the Library of Congress, the California Historical Resources Information System, the Bancroft Library, the Rio Vista Library and the Rio Vista Museum.</p> <p>(2) Retain and reuse the proposed historic district's contributing buildings, structures and setting to the maximum feasible extent.</p> <p>(3) Continue to apply the Standards for Rehabilitation to the maximum feasible extent in all alterations, additions and new construction within and adjacent to the proposed historic district.</p>		

S = Significant
 LS = Less than significant
 SU = Significant unavoidable impact
 NA = Not applicable

Impacts	Potential Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Potential Significance With Mitigation
		<p>(4) Relocate contributing buildings or structures to another location compatible with their original use, character and setting, preferably within the proposed Project Area, or a nearby riverfront location within or near Rio Vista.</p> <p>(5) Through careful methods of planned deconstruction to avoid damage and loss, salvage character-defining features and materials for educational and interpretive use on-site or at the Rio Vista Museum, or for reuse in new construction on the site in a way that commemorates their original use and significance.</p> <p>(6) Interpret the historical significance of the proposed historic district through a permanent exhibit or program within the proposed Project Area, potentially within the proposed park facilities, community center, lodge or research station.</p>		
		<p>Even with implementation of one or more of measures (1) through (6) above, there would still be a loss of continued eligibility of the suggested historic district to the California Register and therefore the potential impacts on</p>		

S = Significant
 LS = Less than significant
 SU = Significant unavoidable impact
 NA = Not applicable

Impacts	Potential Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Potential Significance With Mitigation
<p>Impact 6-3: Disturbance of Paleontological Resources. Redevelopment activities or development facilitated by the Project could potentially disrupt, alter or eliminate as-yet undiscovered paleontological resources. This would be a potentially significant impact.</p>	S	<p>historic resources under mitigation alternative 6-2(b) would be significant and unavoidable.</p> <p>Mitigation 6-3: If paleontological resources are encountered, work shall avoid altering the resource and its stratigraphic context until a qualified paleontologist has evaluated, recorded and determined appropriate treatment of the resource, in consultation with the City. Project personnel shall not collect cultural resources. Appropriate treatment may include collection and processing of “standard” samples by a qualified paleontologist to recover micro vertebrate fossils; preparation of significant fossils to a reasonable point of identification; and depositing significant fossils in a museum repository for permanent curation and storage, together with an itemized inventory of the specimens. This measure would reduce the potential impact on paleontological resources to a less-than-significant level.</p>	City and Agency	LS
<p>Impact 6-4: Cumulative Loss of Cultural Resources. The loss of significant historical resources caused by the Project would be a cumulatively considerable contribution to a loss of cultural resources throughout Rio Vista and the surrounding region, and thus a significant impact.</p>	S	<p>Mitigation 6-4: Adhering to the Secretary of the Interior’s Standards for the Rehabilitation of Historic Properties in all work within and adjacent to the suggested historic district would reduce the Project contribution to this cumulative impact. The feasibility of this mitigation measure cannot be determined until the specific character-defining elements of the proposed historic district are determined. The</p>	City and Agency	SU

S = Significant
 LS = Less than significant
 SU = Significant unavoidable impact
 NA = Not applicable

Impacts	Potential Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Potential Significance With Mitigation
---------	--	---------------------	------------------------------	---

cost, delay and limitations on development associated with this mitigation measure may make it ultimately infeasible. Therefore, the Project contribution would remain cumulatively considerable and thus **significant and unavoidable**.

AESTHETICS

Impact 7-1: Visual Character and Quality. Development facilitated by the proposed Redevelopment Plan would improve the visual quality of the proposed Project Area by eliminating the existing blighting conditions and dilapidated character. The visual character of the site would be changed to a more developed condition, with a more suburban character and more contemporary architectural styles. However, if not sensitively and creatively designed, development facilitated by the Project could result in a loss of the unique visual character and “sense of place” of the proposed Project Area created by the combination of the adjacent Sacramento River and nearby Montezuma Hills and the historic waterfront complex of structures and mature trees, and thereby substantially degrade visual character and quality, adversely affect community character and conflict with General Plan policies. These possible effects represent a **potentially significant impact**.

S

Mitigation 7-1. Future project-facilitated development shall protect, incorporate and enhance the unique visual character and “sense of place” of the proposed Project Area created by the combination of the adjacent Sacramento River and Montezuma Hills, the historic waterfront complex of buildings and structures, and the mature trees. This shall be accomplished, in part though not exclusively, by encouraging future individual development activity to incorporate either measure (a) or (b) below, as well as measures (c), (d) and (e):

City and Agency

LS

(a) Implement alternative Mitigation Measure 6-2(a) to rehabilitate and reuse the contributing buildings, structures and setting of the proposed U.S. Engineer Storehouse Historic District in a manner that fully adheres to the Secretary of the Interior’s Standards for the Rehabilitation of Historic Properties, so as to preserve its continued eligibility to the California Register of Historic Resources;

or

-
- S = Significant
 - LS = Less than significant
 - SU = Significant unavoidable impact
 - NA = Not applicable

Impacts	Potential Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Potential Significance With Mitigation
		<p>(b) If alternative Mitigation Measure 6-2(a) is determined by the City to be infeasible, notwithstanding a significant and unavoidable impact related to historical resources, Project-facilitated development shall nonetheless still:</p> <ol style="list-style-type: none"> (1) Retain and reuse the proposed historic district’s contributing buildings, structures and setting to the maximum feasible extent; and/or (2) Relocate contributing buildings or structures to another location compatible with their original use, character and setting, within the proposed Project Area; and/or (3) Through careful methods of planned deconstruction to avoid damage and loss, salvage character-defining features and materials for educational and interpretive use on-site or at the Rio Vista Museum, or for reuse in new construction on the site in a way that commemorates their original use and significance. <p style="text-align: center;"><i>and</i></p> <p>(c) Project-facilitated development shall maximize views of and connections to the river. The river shall inform the appearance and design of future development within the proposed Project Area.</p>		

S = Significant
 LS = Less than significant
 SU = Significant unavoidable impact
 NA = Not applicable

Impacts	Potential Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Potential Significance With Mitigation
<p>Impact 7-2: Public Access to the River. The “Rio Vista Principles,” set forth in the City’s General Plan, state that new development should reinforce the characteristics that make Rio Vista unique, the Sacramento River should be showcased and enhanced, and the river should be made an accessible resource for the enjoyment of Rio Vista residents and the general public. Numerous General Plan goals and policies reinforce these basic General Plan principles.</p> <p>The proposed Project Area presents a unique and irreplaceable opportunity to connect the city to its waterfront, to create a memorable place, to interpret and celebrate Rio Vista’s river and Delta heritage, and to enhance</p>	S	<p>(d) Implement Mitigation Measure 7-2 regarding maintenance of physical and visual public access to the Sacramento River.</p> <p>(e) Preserve the existing healthy mature trees on the site, particularly the trees behind the historic waterfront complex, along the line between the upper and lower terraces on the site.</p> <p>Implementation of measures (a) or (b), as well as (c), (d) and (e), would reduce the potential impact of the Project related to visual character and quality to a less than significant level.</p> <p>Mitigation 7-2. Development in the proposed Project Area shall provide maximum feasible physical and visual public access to the Sacramento River, and adhere to the planning principles, public access objectives, and design guidelines contained in the San Francisco Bay Conservation and Development Commission Public Access Design Guidelines for the San Francisco Bay (San Francisco Bay Conservation and Development Commission, <u>Shoreline Spaces, Public Access Design Guidelines for the San Francisco Bay</u>, April 2005). With this mitigation measure, the potential impact of the Project related to visual access to the river would be less than significant.</p>	City and Agency	LS

-
- S = Significant
 - LS = Less than significant
 - SU = Significant unavoidable impact
 - NA = Not applicable

Impacts	Potential Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Potential Significance With Mitigation
<p>community character, identity and regional visibility. No specific development program or site layout is suggested as part of the proposed Redevelopment Plan. However, if not sensitively and creatively designed, development facilitated by the Project could block physical and visual public access to the Sacramento River, and thereby substantially degrade visual quality and community character, adversely affect scenic vistas, and conflict with General Plan policies. This possibility represents a potentially significant impact.</p> <p>Impact 7-3: Light, Glare and Sky Glow. Development facilitated by the proposed Redevelopment Plan would result in additional lighting and increased light emanating from the proposed Project Area. New sources of light would be installed as part of new buildings and site improvements to illuminate entries, parking areas, sidewalks and open spaces, for safety and security, and to highlight architectural features. High intensity lighting may be used for nighttime use of sports fields and outdoor courts. If not properly designed and controlled, such lighting could: (1) cause substantial spill light, glare and sky glow that may create a nuisance for adjacent residential properties; may adversely affect nighttime views and night sky access for visitors and campers at Sandy Beach Regional Park, travelers on the State</p>	S	<p>Mitigation 7-3. Future lighting within the proposed Project Area shall conform to the Model Lighting Ordinance of the International Dark Sky Association and the Illuminating Engineering Society of North America. Implementation of this measure would reduce the light, glare and sky glow impacts of the Project to a less than significant level.</p>	City and Agency	LS

-
- S = Significant
 - LS = Less than significant
 - SU = Significant unavoidable impact
 - NA = Not applicable

Impacts	Potential Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Potential Significance With Mitigation
<p>Route 160 State Scenic Highway and the Highway 12 entryway to the community, residents of neighborhoods to the north, users of the Duck Island RV Park on the east side of the river; (2) result in degradation of the City-desired small-town community character; and (3) conflict with General Plan Policy 5.19.D. Spill light, glare and sky glow could also adversely affect nocturnal ecosystems in and around the proposed Project Area and the adjacent river. This possible effect represents a potentially significant impact.</p> <p>Impact 7-4: Obtrusive Sports Field Lighting. Proposed redevelopment activities within the Project Area include the potential development of four baseball fields, three soccer fields, four tennis courts and outdoor basketball courts, consistent with the City's General Plan and the Parks Master Plan. There are several types of sports lighting fixtures available that would produce the required light levels for these facilities. However, less refined lighting optics or improper installation could cause spill light, glare or sky glow. As a result, nighttime sports field lighting could create a nuisance for adjacent residential properties, and adversely affect nighttime views, night sky access, and community character. These possible effects represent a potentially significant impact.</p>	S	<p>Mitigation 7-4: As required by Mitigation 7-3, lighting design within the proposed Project Area shall conform to the Model Lighting Ordinance of the International Dark Sky Association and the Illuminating Engineering Society of North America. The design of lighting systems for sports fields and courts shall achieve adequate control of spill light, glare and sky glow. Luminaire mounting height and optical system shall adequately limit the amount of light visible from the nearest residential property lines, the regional park, the river and other sensitive areas off-site, and avoid illumination above the level of the lights. The final design details for any illuminated sports fields shall include a community playfield lighting plan which specifies playfield lighting fixture locations and designs that only illuminate the field or court area with a sharp</p>	City and Agency	LS

-
- S = Significant
 - LS = Less than significant
 - SU = Significant unavoidable impact
 - NA = Not applicable

Impacts	Potential Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Potential Significance With Mitigation
		<p>cut-off at the field perimeter. Light fixtures shall be selected that have total light control (i.e., fixtures that have internal optics that redirect wasted spill light downwards and are fitted with a non-reflective visor). Post-construction adjustments of the lighting system shall be performed to ensure that installed conditions meet design criteria.</p> <p>With implementation of these measures, the potential nuisance impact from sports field lighting would be less than significant.</p>		

TRANSPORTATION AND CIRCULATION

Impact 8-1: SR 12--SR 84 to SR 160. The addition of Project traffic to existing conditions would increase the daily traffic volume on the two-lane section of SR 12 between SR 84 and SR 160 from approximately 21,000 vehicles per day (VPD) to approximately 22,302 VPD. Both this existing and estimated existing-plus-Project traffic volume total exceed the capacity of 20,000 VPD for two-lane roadways with high access control. The Project-related traffic volume increase would exacerbate existing LOS F conditions. This effect would represent a **significant impact**.

S

Mitigation 8-1. Mitigation of this impact would require widening of the section of SR 12 between SR 84 and SR 160 from one to two lanes in each direction by either widening the existing bridge over the Sacramento River or by constructing a new bridge over the river. This improvement, if feasible, would accommodate the projected daily traffic volume and provide LOS A (volume-to-capacity ratio: 0.56) operations. With this mitigation, the Project impact would be less than significant. The Project fair share of this improvement cost would be approximately 6 percent. However, this improvement is not full-funding-assured. Additionally, SR 12 is a Caltrans facility and so this improvement would exceed the City's

City and Agency

SU

- S = Significant
- LS = Less than significant
- SU = Significant unavoidable impact
- NA = Not applicable

Impacts	Potential Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Potential Significance With Mitigation
		authority to implement. Thus, this impact would therefore remain significant and unavoidable .		
<p>Impact 8-2: Main Street--SR 12 to 5th Street. The addition of Project traffic to existing conditions would increase the daily traffic volume on the section of Main Street between SR 12 and 5th Street from approximately 6,000 VPD to approximately 6,867 VPD. This volume increase would change the LOS from LOS C to LOS E. This would be a significant impact.</p>	S	<p>Mitigation 8-2. Mitigation of this impact would require widening of the section of Main Street between SR 12 and 5th Street to a two-lane arterial by adding a center two-way left-turn lane. This improvement, if feasible, would accommodate the projected daily traffic volume and provide LOS A (volume-to-capacity ratio: 0.45) operation. This mitigation measure would thereby reduce this impact to a less than significant level. The Project fair share of this mitigation cost would be approximately 13 percent. However, this improvement would require the acquisition of right-of-way from fronting properties and is therefore considered to be infeasible. Thus, this impact would remain significant and unavoidable.</p>	City and Agency	SU
<p>Impact 8-3: SR 12/Front Street Intersection. The addition of Project traffic to existing conditions would increase peak hour traffic through the SR 12/Front Street intersection. This traffic volume increase will cause the LOS to change from LOS D to LOS F. This would be a significant impact.</p>	S	<p>Mitigation 8-3. <i>Mitigation Measure 8-1</i> would provide LOS B and C operations in the AM and PM peak hours, respectively. The Project fair share of this improvement would be approximately 6 percent. This mitigation measure, if feasible, would reduce this impact to a less than significant level; however, this improvement is not funding-assured. Additionally, SR 12 is a Caltrans facility and so this mitigation measure would exceed the City's</p>	City and Agency	SU

S = Significant
 LS = Less than significant
 SU = Significant unavoidable impact
 NA = Not applicable

Impacts	Potential Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Potential Significance With Mitigation
		authority to implement. Thus, this impact would remain significant and unavoidable .		
Impact 8-4: Existing Plus Project Impact on Transit System Operations. As indicated under Impacts 8-1 through 8-2 above, the addition of Project traffic to existing conditions would significantly increase existing congestion on SR 12. The Project-related increase in existing SR 4 congestion and delay would add to associated interference with transit operations. This would represent a significant impact .	S	Mitigation 8-4. With implementation of <i>Mitigation 8-1</i> , the Project contribution to this cumulative impact would be reduced to a less than significant level. However, <i>Mitigation 8-1</i> is not funding-assured. Additionally, SR 12 is a Caltrans facility and so this mitigation measure would exceed the City's authority to implement. Thus, this impact would remain significant and unavoidable .	City and Agency	SU
Impact 8-5: SR 12--SR 84 to SR 160. The addition of Project traffic to cumulative conditions in 2025 would increase the daily traffic volume on the two-lane section of SR 12 between SR 84 and SR 160 from approximately 54,800 vehicles per day (VPD) to approximately 56,102 VPD. Both this existing and existing-plus-Project traffic volume total exceed the capacity of 18,000 VPD for two-lane roadways with moderate access control. The Project-related traffic volume increase would exacerbate existing LOS F conditions. This effect would represent a significant impact .	S	Mitigation 8-5. <i>Mitigation Measure 8-1</i> would provide LOS F (volume-to-capacity ratio: 1.40) operations. The Project's fair share of this improvement would be approximately 2 percent. With implementation of this mitigation measure, the Project contribution to this cumulative impact would not be significant. However, even with this improvement, SR 12 between SR 84 and SR 160 would continue to operate at LOS F. This improvement is also not funding-assured. Additionally, SR 12 is a Caltrans facility and so this improvement would exceed the City's authority to implement. Thus, this impact would remain significant and unavoidable .	City and Agency	SU
Impact 8-6: Main Street--SR 12 to 5th Street.	S	Mitigation 8-6. <i>Mitigation Measure 8-2</i> would	City and	SU

S = Significant
 LS = Less than significant
 SU = Significant unavoidable impact
 NA = Not applicable

Impacts	Potential Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Potential Significance With Mitigation
<p>The addition of Project traffic to cumulative conditions in 2025 would increase the daily traffic volume on the section of Main Street between SR 12 and 5th Street from approximately 9,400 vehicles per day (VPD) to approximately 10,267 VPD. Both this cumulative and cumulative-plus-Project traffic volume total would exceed the capacity of 8,000 VPD for a two-lane residential collector with driveways. The Project-related traffic volume increase would exacerbate projected LOS F conditions. This would be a considerable contribution and thus a significant impact.</p>		<p>provide LOS B (volume-to-capacity ratio: 0.68) operations. The project's fair share of this improvement would be approximately 8 percent. With implementation of this mitigation measure, the Project contribution to this cumulative impact would be less than considerable. However, this improvement would require the acquisition of right-of-way from fronting properties and is therefore considered to be infeasible. Thus, this impact would remain significant and unavoidable.</p>	Agency	
<p>Impact 8-7: Main Street--5th Street to 2nd Street. The addition of Project traffic to cumulative conditions in 2025 would increase the daily traffic volume on the section of Main Street between 5th Street and 2nd Street from approximately 6,400 vehicles per day (VPD) to approximately 7,222 VPD. Both this cumulative and cumulative-plus-Project traffic volume total would exceed the capacity of 8,000 VPD for two-lane residential collector with driveways. The Project-related traffic volume increase would change the LOS from LOS D to LOS E. This would be a significant impact.</p>	S	<p>Mitigation 8-7. Mitigation of this impact would require widening of the section of Main Street between 5th Street and 2nd Street to a two-lane arterial by adding a center two-way left-turn lane. This improvement, if feasible, would accommodate the projected daily traffic volume and provide LOS A (volume-to-capacity ratio: 0.48) operation. This mitigation measure would thereby reduce this impact to a less than significant level. The Project fair share of this improvement cost would be approximately 11 percent. However, this improvement would require the acquisition of right-of-way from fronting properties and is therefore considered infeasible. Thus, this impact would remain significant and unavoidable.</p>	City and Agency	SU

-
- S = Significant
 - LS = Less than significant
 - SU = Significant unavoidable impact
 - NA = Not applicable

Impacts	Potential Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Potential Significance With Mitigation
<p>Impact 8-8: SR 12/Main Street-Hillside Terrace. The addition of Project traffic to cumulative conditions in 2025 would increase peak hour traffic through the SR 12/Main Street-Hillside Terrace intersection. The Project-related traffic volume increase would cause delay to increase by five or more seconds in both the AM and PM peak hours, which would exceed the City of Rio Vista's five-second criteria for unsignalized intersections already operating unacceptably (LOS E or F) under "no project" conditions. This would be a considerable Project contribution to cumulative impact conditions and thus a significant impact.</p>	S	<p>Mitigation 8-8. Mitigation of this cumulative-plus-Project impact would require installation of a left turn lane on both the Main Street and Hillside Terrace approaches to the SR 12/Main Street-Hillside Terrace intersection. The Project fair share of this improvement cost would be approximately 2 percent. With this improvement, this intersection would continue to operate unacceptably with LOS E and F operations in the AM and PM peak hours, respectively; however, the Project-related change in the average intersection control delay would be reduced to less than five seconds. Thus, with this measure, the Project contribution to this cumulative impact would be less than considerable and therefore less than significant.</p>	City and Agency	LS
<p>Impact 8-9: SR 12/North 5th Street. The addition of Project traffic to cumulative conditions in 2025 would increase peak hour traffic through the SR 12/North 5th Street intersection. The Project-related traffic volume increase would cause the delay to increase by five or more seconds in the AM and PM peak hours, which would exceed the City of Rio Vista's five-second criteria for unsignalized intersections already operating unacceptably (LOS E or F) under "no project" conditions. This would be a considerable Project contribution to cumulative impact conditions and thus a significant impact.</p>	S	<p>Mitigation 8-9. Mitigation of this cumulative-plus-Project impact would require installation of a raised median on SR 12 to restrict left-out access from North 5th Street on the northbound and southbound approaches to the SR 12/North 5th Street intersection. The Project fair share of this improvement cost would be approximately 1 percent. With this improvement, this intersection would continue to operate unacceptably with LOS F operations in the AM and PM peak hours; however, the Project-related change in the average intersection control delay would be reduced to less than five seconds. Thus, with this measure, the Project contribution to this</p>	City and Agency	LS

-
- S = Significant
 - LS = Less than significant
 - SU = Significant unavoidable impact
 - NA = Not applicable

Impacts	Potential Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Potential Significance With Mitigation
		cumulative impact would be less than considerable and therefore less than significant .		
Impact 8-10: SR 12/Front Street. The addition of Project traffic to cumulative conditions in 2025 would increase peak hour traffic through the SR 12/Front Street intersection. The Project-related traffic volume increase would cause delay to increase by five or more seconds in the AM and PM peak hours, which would exceed the City of Rio Vista's five-second criteria for unsignalized intersections already operating unacceptably (LOS E or F) under "no project" conditions. This would be a considerable Project contribution to cumulative impact conditions and thus a significant impact .	S	Mitigation 8-10. Mitigation of this cumulative-plus-Project impact would require installation of a second eastbound and westbound through lane on SR 12 to the SR 12/Front Street intersection. The Project fair share of this improvement cost would be approximately 3 percent. This improvement, which is consistent with Mitigation Measure 8-1, would provide LOS E and F operations in the AM and PM peak hours, respectively. However, the Project-related change in the average intersection control delay would be reduced to less than five seconds. Thus, with this measure, the Project contribution to this cumulative impact would be less than considerable and therefore less than significant .	City and Agency	LS
Impact 8-11: SR 12/River Road. The addition of Project traffic to cumulative conditions in 2025 would increase peak hour traffic through the SR 12/River Road intersection. The Project-related traffic volume increase would cause delay to increase by five or more seconds in the AM and PM peak hours, which would exceed the City of Rio Vista's five-second criteria for unsignalized intersections already operating unacceptably	S	Mitigation 8-11. Mitigation of this cumulative-plus-Project impact would require installation of a second through lane on eastbound and westbound SR 12 to the SR 12/River Road intersection. The project fair share of this improvement cost would be approximately 2 percent. This improvement, which is consistent with Mitigation Measure 8-1, would provide LOS E and F operations in the AM and PM peak hours, respectively. However, the Project-	City and Agency	LS

-
- S = Significant
 - LS = Less than significant
 - SU = Significant unavoidable impact
 - NA = Not applicable

Impacts	Potential Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Potential Significance With Mitigation
(LOS E or F) under “no project” conditions. This would be a considerable Project contribution to cumulative impact conditions and thus a significant impact .		related change in the average intersection control delay would be reduced to less than five seconds. Thus, with this measure, the Project contribution to this cumulative impact would be less than considerable and therefore less than significant .		
Impact 8-12: Cumulative-Plus-Project Impact on Transit System Operations. As indicated under Impacts 8-5, 8-6 and 8-8 through 8-11 above, the addition of Project traffic to cumulative conditions in 2025 would significantly increase congestion on SR 12. The Project-related increase in cumulative SR 4 congestion and delay would add to associated interference with transit operations. This would represent a considerable Project contribution to cumulative conditions and thus a significant impact .	S	Mitigation 8-12. With <i>Mitigation Measures 8-1, 8-8, 8-9, 8-10 and 8-11</i> , the Project contribution to this cumulative impact would be less than considerable. However, the identified improvement is not funding-assured. Additionally, SR 12 is a Caltrans facility and so the improvement exceeds the City’s authority to implement. Thus, this impact would remain significant and unavoidable .	City and Agency	SU
BIOLOGICAL RESOURCES				
Impact 10-1: Impacts on Wetlands and Other Waters. The proposed Project Area contains freshwater marsh, riparian and aquatic habitat areas within and adjacent to the Sacramento River which are wetlands and other waters subject to Corps jurisdiction under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act, and	S	Mitigation 10-1: Before undertaking any redevelopment actions or development projects that could have a substantial adverse effect on wetlands or other waters, including construction activity within the upland areas of the proposed Project Area that could involve the discharge of sediments, the applicant shall coordinate with the U.S. Army Corps of Engineers and the	City and Agency	LS

S = Significant
 LS = Less than significant
 SU = Significant unavoidable impact
 NA = Not applicable

Impacts	Potential Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Potential Significance With Mitigation
<p>are regulated by the CDFG. Redevelopment actions or development facilitated by the proposed Redevelopment Plan would involve the direct removal or filling of wetlands, or other activities that could substantially alter the hydrology, soil, vegetation or wildlife of wetlands, or affect the conditions of navigable waters, representing a potentially significant impact.</p>		<p>California Department of Fish and Game as early as possible in the design of the project to obtain a verified jurisdictional determination and either revise the development design to avoid all effects on jurisdictional wetlands and other waters or obtain and comply with a Section 404 permit and a Lake and Streambed Alteration Agreement. This measure would reduce the potential impact of the individual development on wetlands and other waters to a less-than-significant level.</p>		
<p>Impact 10-2: Impacts on Special-Status Species. Four special-status plant and wildlife species are confirmed as occurring within the proposed Project Area, and an additional 17 special-status plant, wildlife and fish species have the potential to occur within the proposed Project Area or the adjoining river. In addition, the adjoining Sacramento River is critical habitat for two fish species. Redevelopment actions or development facilitated by the proposed Redevelopment Plan could adversely affect these special-status species or their habitats within the proposed Project Area or in the adjoining Sacramento River. Species may be affected during construction, when their habitats may be substantially altered or removed, or species may be affected by activities associated with the operation of future projects, including activities occurring within the</p>	S	<p>Mitigation 10-2: Development activities undertaken within the Project Area shall comply with the terms of the Solano Multispecies Habitat Conservation Plan (HCP). Upon determination of final development configuration for any individual development property that may directly or indirectly affect a special status species covered under the Solano HCP, before any construction activities are permitted to occur, a qualified biologist shall delineate all Solano HCP-listed special-status species habitat occurring within the vicinity of the proposed development and the adjoining segment of the Sacramento River. If it is determined that any special-status species may be affected by proposed construction activities or subsequent operations, including increased activity in the Sacramento River, the applicant shall implement pertinent avoidance and mitigation measures</p>	City and Agency	LS

-
- S = Significant
 - LS = Less than significant
 - SU = Significant unavoidable impact
 - NA = Not applicable

Impacts	Potential Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Potential Significance With Mitigation
<p>adjoining Sacramento River. These possible effects represent a potentially significant impact.</p>		<p>commensurate with those described in the Solano HCP, subject to review and approval by the appropriate regulatory agencies. Applicable HCP conservation measures include, but may not be limited to the following, as presented in Chapter 6: Conservation Strategy of the HCP:</p> <ul style="list-style-type: none"> ▪ RSM 2: Permanent Impacts to Riparian, Stream and Freshwater Marsh for Non-Priority Watersheds and Drainages ▪ RSM 5: Temporary Impacts to Riparian and Freshwater Marsh Habitat ▪ RSM 6: Base Flow ▪ RSM 10: Stormwater Discharge <p><u>Species not Covered by the Solano HCP.</u> For individual redevelopment actions or development activities that may adversely affect a sensitive species or its habitat within the proposed Project Area or the adjoining Sacramento River, an applicant-retained qualified biologist shall conduct protocol-level biological survey(s) sufficient to definitively determine whether any special-status species occur in the affected area. Such survey(s) shall be conducted following applicable guidelines of the California Department of Fish and Game and U.S. Fish and Wildlife Service to provide a conclusive</p>		

S = Significant
 LS = Less than significant
 SU = Significant unavoidable impact
 NA = Not applicable

Impacts	Potential Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Potential Significance With Mitigation
		<p>determination on presence or absence. If any populations with legal protective status are encountered, the applicant shall demonstrate to City satisfaction completion of an appropriate mitigation plan in consultation with, and meeting the mitigation criteria of, the jurisdictional agencies (e.g., setback requirements, activity restrictions). If it is determined that site-specific projects will impact listed species, early consultation with the jurisdictional wildlife agencies is encouraged.</p> <p>Implementation of these measures would reduce Project impacts related to special-status species to a <i>less-than-significant level</i>.</p>		
<p>Impact 10-3: Aquatic Invasive Species Impacts. Future Project-facilitated development and related operations occurring in the Sacramento River adjoining the proposed Project Area, particularly boat use and mooring, may increase the spread of non-native aquatic organisms or aquatic invasive species (AIS) and thus adversely affect Delta ecosystems. AIS may be introduced and spread not only by transoceanic ships and ballast water, but by other pathways potentially resulting from the proposed Redevelopment Plan, such as biological research, hatchery operations, environmental restoration projects, and hulls, anchors and anchor chains of</p>	S	<p>Mitigation 10-3: Redevelopment actions and development facilitated by the proposed Redevelopment Plan shall demonstrate to City satisfaction employment of best management practices to reduce the spread of aquatic invasive species (AIS) as a result of construction activities and operations. Best management practices shall be determined in coordination with the California Department of Fish and Game, the State Lands Commission, and other agencies with AIS expertise and regulatory authority. Best management practices may address, but shall not be limited to decontamination of construction vehicles, equipment and gear; education and outreach to</p>	City and Agency	SU

-
- S = Significant
 - LS = Less than significant
 - SU = Significant unavoidable impact
 - NA = Not applicable

Impacts	Potential Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Potential Significance With Mitigation
<p>smaller vessels. Such effects may impede and conflict with the CALFED Bay-Delta Ecosystem Restoration Program's goal to reduce the negative impacts of invasive species and prevent additional introductions that compete with and destroy native species. The project contribution to AIS impacts would be cumulatively considerable and thus a significant impact.</p>		<p>boating, fishing and other recreation; boat inspection and enforcement; and design, inspection and abatement related to docks and other structures. The effectiveness of these measures in reducing the spread of AIS cannot be accurately determined at this time. The Project contribution to this cumulative impact may therefore remain considerable and thus significant and unavoidable.</p>		
<p>Impact 10-4: Impacts on Nesting Birds or Bat Nurseries. Project-related construction activities could reduce nesting opportunities for resident and migratory bird species that are protected by the Migratory Bird Treaty Act and bats. This would be a potentially significant impact.</p>	S	<p>Mitigation 10-4: Vegetation in the construction zones shall be trimmed or removed between September 1 and January 31 to minimize potential impacts on nesting birds. If vegetation or buildings that potentially provide nesting sites must be removed between February 1 and August 31, a qualified wildlife biologist shall conduct pre-construction surveys for nesting birds and bats. If an active nest is found, the bird shall be identified to species and the approximate distance from the closest work site to the nest estimated. No additional measures need be implemented if active nests are more than the following distances from the nearest work site: (a) 300 feet for raptors; or (b) 75 feet for other non-special-status bird species. If active nests are closer than those distances to the nearest work site and there is the potential for destruction of a nest or substantial disturbance to nesting birds due to construction activities, a plan to monitor nesting birds or bats</p>	City and Agency	LS

-
- S = Significant
 - LS = Less than significant
 - SU = Significant unavoidable impact
 - NA = Not applicable

Impacts	Potential Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Potential Significance With Mitigation
		during construction shall be prepared by a qualified biologist and submitted to the USFWS and CDFG for review and approval. Disturbance of active nests shall be avoided to the extent possible until it is determined that nesting is complete and the young have fledged. With this mitigation measure, the impact of the Project on nesting birds or bat nurseries would be less than significant .		
DRAINAGE AND WATER QUALITY				
Impact 11-1: Construction Impacts on Water Quality. Construction activities within the proposed Project Area may substantially degrade the quality of Sacramento River receiving waters. Construction activities, in particular activities involving soil disturbance, excavation, cutting/filling, and grading, could result in increased erosion on-site and sediments, pollutants and excess nutrients being carried to the adjacent Sacramento River, which would increase turbidity and sedimentation, and disrupt aquatic habitats. These possible effects represent a potentially significant impact .	S	Mitigation 11-1. Construction activities shall comply with all applicable State, regional, and City water quality provisions. As required under Regional Water Quality Control Board (RWQCB) regulations, at the time of development of each public improvement or project-facilitated private development involving the grading of more than 5,000 square feet, the applicant shall: (a) file with the RWQCB a Notice of Intent to comply with the Statewide General Permit for Construction Activities; (b) prepare and implement a project-specific Storm Water Pollution Prevention Plan (including an erosion and sediment control plan) for City review and approval prior to issuance of a grading permit; and (c) implement a monitoring and reporting program to verify the effectiveness of control measures. The NPDES General Permit-required SWPPP shall address both erosion and non-	City and Agency	LS

-
- S = Significant
 - LS = Less than significant
 - SU = Significant unavoidable impact
 - NA = Not applicable

Impacts	Potential Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Potential Significance With Mitigation
		<p>point source pollution impacts (e.g., improper handling or accidental spill of toxic materials) from project construction.</p> <p>The SWPPP, at a minimum, shall follow City ordinances and conform to the California Storm Water Best Management Practices Handbook, and shall include, but not be limited to, the following measures:</p> <ul style="list-style-type: none"> ▪ Immediately re-vegetate or otherwise protect disturbed areas from both wind and water erosion upon the completion of grading. ▪ Schedule major work involving earth moving and excavation during the dry season (April 15 to October 15). ▪ Incorporate measures as necessary to protect proposed Project Area drainages from sedimentation. ▪ Use water bars, temporary swales and culverts, mulch and jute netting, hydroseeding, silt fences, sediment traps and sedimentation basins, as needed to prevent surface water from eroding graded areas, to retain sediment, and to collect drainage from disturbed areas and allow sediments and pollutants to settle out before discharge to the river. 		

S = Significant
 LS = Less than significant
 SU = Significant unavoidable impact
 NA = Not applicable

Impacts	Potential Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Potential Significance With Mitigation
<p>Impact 11-2: Operational Impacts on Water Quality. Ongoing occupancy and operation of Project-facilitated development could substantially degrade water quality in the Sacramento River, which would be a potentially significant impact.</p>	S	<ul style="list-style-type: none"> ▪ Water soils susceptible to wind erosion frequently during construction. <p>With implementation of this mitigation measure, Project construction impacts on water quality would be less than significant.</p> <p>Mitigation 11-2. The following measures shall be implemented to address Project-related potential operational impacts on water quality:</p> <p>(a) Minimize impervious cover, maximize on-site infiltration, and manage stormwater runoff to remove pollutants before discharge to the Sacramento River sufficient to meet the water quality standards of the RWQCB, using design, structural and non-structural best management practices (BMPs). BMPs may include:</p> <ul style="list-style-type: none"> ▪ <i>Design and non-structural BMPs.</i> Smaller building footprint, vegetated roofs, pervious pavement or grid pavers, vegetated swales, rain gardens, disconnection/isolation of impervious areas. ▪ <i>Structural BMPs.</i> Rainwater cisterns, catch basin treatment devices, retention ponds, stormwater harvesting for reuse in irrigation or buildings. 	City and Agency	LS

S = Significant
 LS = Less than significant
 SU = Significant unavoidable impact
 NA = Not applicable

Impacts	Potential Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Potential Significance With Mitigation
		<p>(b) Development shall comply with the City's Storm Water Pollution Prevention Program as set forth in the City's NPDES storm water permit. As required by the City's Stormwater Quality Control Criteria Plan (as outlined in the City's Phase 1 Stormwater NPDES permit issued by the Central Valley RWQCB), prior to the occupancy of any structure, the project proponent shall establish a maintenance entity acceptable to the City to provide funding for the operation, maintenance, and replacement costs of stormwater BMPs.</p> <p>Implementation of these mitigation measures would reduce the long-term operational impacts on water quality of Project-facilitated development to a less than significant level.</p>		
<p>Impact 11-3: Future Flooding Impacts Related to Sea Level Rise. The proposed Project Area may be subject to flooding due to sea level rise associated with climate change. With increased on-site flooding potential in the future, Project-facilitated development could place people and structures at an increased risk of injury or loss from flooding. This possibility represents a potentially significant impact.</p>	S	<p>Mitigation 11-3. Redevelopment projects and redevelopment-facilitated development subject to flooding as a result of predicted sea level rise shall comply with Chapter 15.16, Flood Hazard Protection, of the Rio Vista Municipal Code, even if such projects do not lie within an Area of Special Flood Hazard as identified by FEMA and thus would not otherwise be subject to the requirements of Chapter 15.16. With implementation of this mitigation measure, the impact of the Project related to increased flooding as a result of sea level rise would be less than significant.</p>	City and Agency	LS

-
- S = Significant
 - LS = Less than significant
 - SU = Significant unavoidable impact
 - NA = Not applicable

Impacts	Potential Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Potential Significance With Mitigation
<i>NOISE</i>				
<p>Impact 12-1: Construction Noise. Redevelopment activities within the proposed Project Area, including the demolition of buildings and the construction of new roads, infrastructure, park and recreation facilities, and other improvements, as well as the construction of new development stimulated by the proposed Redevelopment Plan, would generate short-term temporary construction noise and/or groundborne vibration. Construction noise and groundborne vibration effects would result from demolition of existing structures, grading and excavation, construction of foundations (possibly including pile driving), erection of new structures, and finishing. These construction activities could expose the few existing residences across Beach Drive near the northwest and southwest corners of the Project Area, and residential apartments at the U.S. Coast Guard Station adjacent to the Project Area to the south, to substantial temporary increases in ambient noise levels in excess of City noise standards, or to substantial temporary groundborne vibration. These possible effects represent a potentially significant impact.</p>	S	<p>Mitigation 12-1: To reduce noise and vibration impacts from Project-related construction activities, the following measures shall be implemented as a condition of future Project Area grading, demolition and building permit approvals:</p> <p>(a) <i>Construction Scheduling.</i> Limit noise-generating construction activity within 500 feet of existing residential uses to between the hours of 7:00 AM to 7:00 PM, except on Sundays, and except in the case of emergencies (<u>City of Rio Vista Municipal Code</u> section 17.52.030).</p> <p>(b) <i>Construction Equipment Mufflers and Maintenance.</i> Equip all internal combustion engine-driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.</p> <p>(c) <i>Idling.</i> Prohibit unnecessary idling of internal combustion engines.</p> <p>(d) <i>Equipment Location.</i> Locate all stationary noise-generating construction equipment, such as air compressors, as far as practical from existing nearby residences and other noise sensitive land uses. Such equipment shall also be acoustically shielded.</p>	City and Agency	LS

S = Significant
 LS = Less than significant
 SU = Significant unavoidable impact
 NA = Not applicable

Impacts	Potential Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Potential Significance With Mitigation
		<p>(e) <i>Quiet Equipment Selection.</i> Select quiet construction equipment, particularly air compressors, whenever possible. Fit motorized equipment with proper mufflers in good working order.</p> <p>(f) <i>Noise Disturbance Coordinator.</i> A noise disturbance coordinator responsible for responding to any local complaints about construction noise shall be designated. The disturbance coordinator shall determine the cause of any noise complaint (e.g., starting too early, bad muffler, etc.) and will require that reasonable measures be implemented to correct the problem. A telephone number for the disturbance coordinator shall be conspicuously posted at the construction site.</p> <p>With implementation of these measures, the impact of the Project related to construction noise would be <i>less than significant</i>.</p>		
<p>Impact 12-2: Traffic Noise. The General Plan Circulation and Mobility Element acknowledges that, because there are no arterials connecting the downtown or Highway 12 from the south, future increases in through-traffic may affect residential neighborhoods along 2nd Street, which is a primarily residential collector street. Vehicle trips generated by</p>	S	<p>Mitigation 12-2: Future individual discretionary development projects within the proposed Project Area shall be individually evaluated for associated traffic noise impacts on Beach Drive and 2nd Street. Actual future development within the proposed Project Area may result in fewer vehicle trips and smaller increases in traffic noise levels than what has been assumed</p>	City and Agency	SU

-
- S = Significant
 - LS = Less than significant
 - SU = Significant unavoidable impact
 - NA = Not applicable

Impacts	Potential Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Potential Significance With Mitigation
<p>Project Area development facilitated by the proposed Redevelopment Plan would use Beach Drive and then 2nd Street to reach central Rio Vista, then continue either west on Main Street or north on Front Street to Highway 12. Residences on Beach Drive and 2nd Street, as well as Riverview Middle School, the Rio Vista Branch Library and other potentially sensitive receptors along these routes, may be exposed to substantial increases in traffic noise--i.e., increases of 5 dBA or greater--as a result of Project-related increases in vehicular traffic. This would represent a significant impact.</p>		<p>in this EIR. Project-specific evaluation for individual future Project Area development applications may demonstrate that impacts would actually be less-than-significant and mitigation would not be necessary.</p> <p>If the project-specific evaluation indicates that estimated noise levels on Beach Drive and 2nd Street would exceed City standards or exceed ambient noise levels by 5dBA or more as a result of the project, then mitigation measures shall be implemented to the extent feasible to reduce noise to within the City standards and within 5dBA of ambient levels without the project. Mitigation measures may include the use of open grade asphalt paving. The use of open grade asphalt paving could provide a 2 to 3 dBA decrease in traffic noise levels. If necessary, further mitigation may include sound walls in places or extending an offer to retrofit affected noise-sensitive properties with dual-pane noise-rated windows, mechanical ventilation systems, and/or noise insulation and other noise-attenuating building materials. Depending on the amount of noise level reduction required and the number of noise-sensitive properties affected, retrofitting measures, if necessary, may not be feasible for or desired by every affected property. Without knowing the actual amount of reduction that would be necessary, the number of affected</p>		

-
- S = Significant
 - LS = Less than significant
 - SU = Significant unavoidable impact
 - NA = Not applicable

Impacts	Potential Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Potential Significance With Mitigation
		properties and the degree of voluntary participation, the feasibility of retrofitting affected properties cannot be determined. Therefore, the traffic noise impact of the Project would remain significant and unavoidable .		
<p>Impact 12-3: Recreational Facility Noise. The few existing single-family residences on Beach Drive near the northwest and southwest corners of the proposed Project Area may be exposed to a substantial increase in average ambient noise, possibly to levels exceeding City standards, as a result of noise from future sports fields, outdoor courts, playgrounds and other active recreation facilities in the Project Area. The noise levels experienced by adjacent residents would depend on the precise location of these facilities within the proposed Project Area; their distance from the nearest residential properties; the orientation, design and noise shielding features of the facilities; and the noise shielding and attenuation provided by intervening terrain and structures. Given the size of the proposed Project Area, the location and distance to adjacent residential properties, and design flexibility afforded by the vacant unencumbered site, it is reasonable to assume that the proposed recreational facilities could be developed while still maintaining noise levels at adjacent residential properties within City</p>	S	<p>Mitigation 12-3: Future sports fields, outdoor courts and playgrounds within the proposed Project Area shall be located away from adjacent residential properties, and shall be designed, shielded and operated so that noise levels at adjacent residential properties do not exceed City noise standards. With implementation of this mitigation measure, the impacts of the Project related to recreational facility noise would be less than significant.</p>	City and Agency	LS

-
- S = Significant
 - LS = Less than significant
 - SU = Significant unavoidable impact
 - NA = Not applicable

Impacts	Potential Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Potential Significance With Mitigation
standards. Nevertheless, until the location and design of the recreational facilities are finalized, the potential for exposure to a permanent substantial increase in noise levels and possibly to noise levels exceeding City noise standards would represent a potentially significant impact .				
<i>AIR QUALITY</i>				
Impact 13-1: Short-Term Construction Emissions. Project-facilitated construction activities could generate temporary emissions of ROG, NOX and PM ₁₀ that exceed YSAQMD thresholds of significance. In addition, construction dust could cause localized health and nuisance impacts on adjacent residential and other sensitive receptors. These possible construction period effects represent a potentially significant impact .	S	<p>Mitigation 13-1. To reduce short-term construction emissions impacts from Project-related construction activities, the following measures shall be implemented as a condition of future Project Area grading, demolition and building permit approvals:</p> <ol style="list-style-type: none"> 1. Water all active construction sites at least twice daily. Frequency should be based on the type of operation, and extent of soil and wind exposure (50 percent effective). 2. Haul trucks shall maintain at least two feet of freeboard (90 percent effective). 3. Cover all trucks hauling dirt, sand or loose materials (90 percent effective). 	City and Agency	LS

S = Significant
 LS = Less than significant
 SU = Significant unavoidable impact
 NA = Not applicable

Impacts	Potential Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Potential Significance With Mitigation
		<p>4. Apply non-toxic binders (e.g., latex acrylic copolymer) to exposed areas after cut and fill operations and hydroseed exposed cut and fill areas.</p> <p>5. Apply chemical soil stabilizers on inactive construction areas (disturbed lands within construction projects that are unused for at least four consecutive days).</p> <p>6. Plant vegetative ground cover in disturbed areas as soon as possible.</p> <p>7. Cover inactive storage piles.</p> <p>8. Sweep streets if visible soil material is carried out from the construction site.</p> <p>9. Treat accesses to a distance of 100 feet from the paved road with a 6-inch layer of gravel or a 6 to 12 inch layer of wood chips or mulch.</p> <p>10. Maintain heavy-duty earthmoving, stationary and mobile equipment in optimum operating condition.</p> <p>11. Minimize idling time to five (5) minutes when construction equipment is not in use, unless more time is required per engine manufacturer's specifications or for safety reasons.</p>		

S = Significant
 LS = Less than significant
 SU = Significant unavoidable impact
 NA = Not applicable

Impacts	Potential Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Potential Significance With Mitigation
		<p>12. Use low sulfur fuel for stationary construction equipment.</p> <p>13. Use existing power sources (e.g., power poles) or clean fuel generators rather than temporary power generators.</p> <p>14. Use low emission on-site stationary equipment.</p> <p>15. In the event that any open burning is required, obtain approval and issuance of a burning permit from YSAQMD and perform burning in compliance with YSAQMD Rule 2.8, Open Burning, General.</p> <p>16. Control visible emissions exceeding 40 percent opacity to no more than 3 minutes in any one hour, which includes all (on-road and off-road) diesel powered equipment, in accordance with YSAQMD Rule 2.3.</p> <p>17. Comply with YSAQMD Rule 2.14, Architectural Coatings, for architectural coatings and solvents used at the proposed project.</p> <p>18. Cutback and emulsified asphalt application shall be conducted in accordance with YSAQMD Rule 2.28, Cutback and Emulsified Asphalt Paving Materials.</p>		

S = Significant
 LS = Less than significant
 SU = Significant unavoidable impact
 NA = Not applicable

Impacts	Potential Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Potential Significance With Mitigation
		With implementation of this measure, the short-term construction emissions impact of the Project would be less than significant .		
<p>Impact 13-2: CO Concentration Impacts. As explained in Chapter 8, Transportation and Circulation, Project traffic would cause or exacerbate already existing unacceptable traffic congestion at the following four intersections on Highway 12, which could cause violations of the State ambient air quality standard for CO:</p> <ul style="list-style-type: none"> ▪ Highway 12/Front Street, ▪ Highway 12/Main Street, ▪ Highway 12/North 5th Street, and ▪ Highway 12/River Road. <p>This possible effect represents a potentially significant impact.</p>	S	<p>Mitigation 13-2: Mitigation measures 8-3, 8-8, 8-9, 8-10 and 8-11 described in Chapter 8, Transportation and Circulation, would reduce to less than considerable the incremental contribution of Project traffic to these four intersections. However, Mitigation 8-3 is not funding assured and exceeds the City's authority to implement and thus may be infeasible. Additionally, even with implementation of Mitigations 8-8, 8-9, 8-10 and 8-11, these intersections would continue to operate at an unacceptable LOS, and so the incremental contribution of Project traffic could still cause a violation of the a State ambient air quality standard for CO. Therefore, this impact would remain significant and unavoidable.</p>	City and Agency	SU
<p>Impact 13-3: Diesel Particulate Matter Exposure Impacts. The assumed research station use could involve the storage and use of up to approximately 50 boats, potentially including one 200-foot vessel, and several 40-to-120-foot vessels. Diesel engine boats can be substantial emitters of diesel particulate matter. The nearest existing adjacent homes would be at sufficient distance (at least 600</p>	S	<p>Mitigation 13-3. Active recreation uses, such as sports fields, outdoor courts and playgrounds, shall be located at least 300 feet away from sources of diesel particulate matter or other TACs. For proposed facilities closer than 300 feet, a health risk assessment based on detailed air dispersion modeling shall be performed to verify that the health risk from exposure to diesel particulate matter would not exceed YSAQMD</p>	City and Agency	LS

-
- S = Significant
 - LS = Less than significant
 - SU = Significant unavoidable impact
 - NA = Not applicable

Impacts	Potential Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Potential Significance With Mitigation
---------	--	---------------------	------------------------------	---

feet away) from boats in the river to avoid an elevated health risk from boat-emitted diesel particulate matter. Based on conceptual site plans prepared for the 1998 Base Reuse Plan and the 2001 Supplement to the Base Reuse Plan, the proposed on-site sports fields and courts would likely be located in the western portion of the proposed Project Area (more than 300 feet from the river), and thus would also be at a sufficient distance to avoid an elevated health risk. However, until the location of anticipated active recreational uses within the Project Area is finalized, it is assumed that users of active recreation facilities could be exposed to diesel particulate matter at levels that may cause an elevated health risk. This possible effect represents a **potentially significant impact**.

significance thresholds. With implementation of this measure, the impact of the Project related to exposure to diesel particulate matter would be **less than significant**.

CLIMATE CHANGE

Impact 14-1: Construction GHG Emissions. Construction activities would generate greenhouse gas (GHG) emissions that could contribute to global climate change. This possible effect represents a **potentially significant impact**.

S

Mitigation 14-1. The mitigation measures listed below for construction GHG emissions are in addition to the measures for short-term construction emissions of criteria air pollutants ROG and NO_x contained in Mitigation 13-1 in Chapter 13, Air Quality, which would also serve to reduce GHG emissions. Construction activities within the Project Area shall implement the following measures:

City and Agency

LS

-
- S = Significant
 - LS = Less than significant
 - SU = Significant unavoidable impact
 - NA = Not applicable

Impacts	Potential Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Potential Significance With Mitigation
		<p>(a) At least 15 percent of construction vehicles and equipment shall be alternative-fueled (e.g., biodiesel, electric);</p> <p>(b) At least 10 percent of building materials used in all new construction, additions and alterations shall be locally sourced building materials; and</p> <p>(c) At least 50 percent of construction and demolition waste shall be recycled.</p> <p>With these measures, Project impacts related to construction GHG emissions would be considered less than significant.</p>		
<p>Impact 14-2: Long-Term GHG Emissions from Operations. The assumed 244,500 square feet of non-residential development facilitated by the proposed Redevelopment Plan would generate an estimated total of approximately 5,178 MT per year of CO₂ emissions. Based on an estimated service population of 240, the Project would result in CO₂ emissions of approximately 21.6 MT per year per service population, which would exceed the significance threshold applied in this EIR of 6.6 MT per year per service population (based on the proposed significant guidelines of the Bay Area Air Quality</p>	S	<p>Mitigation 14-2. The following measures shall be implemented for future discretionary development applications within the proposed Project Area, unless project-specific evaluation for a future individual project under consideration demonstrates that mitigation is not required because GHG emissions would be less than the air quality management district thresholds of significance:</p> <p>(a) The on-site segment of the Class 1 bike path and multi-use trail identified in the City's General Plan and the Parks Master Plan, and off-site segments of the multi-use trail connecting north</p>	City and Agency	SU

-
- S = Significant
 - LS = Less than significant
 - SU = Significant unavoidable impact
 - NA = Not applicable

Impacts	Potential Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Potential Significance With Mitigation
<p>Management District). Estimated GHG emissions from ongoing occupancy and operation of development in the Project Area would therefore represent a considerable contribution to the significant cumulative impact of global climate change, representing a <i>potentially significant impact</i>.</p>		<p>to Riverview Middle School, Rio Vista High School and the nearest public sidewalk on 2nd Street, and south to Sandy Beach Regional Park, should be developed and available to serve future community recreation uses developed within the proposed Project Area.</p> <p>(b) Employers with over 20 employees should implement a transportation demand management (TDM) program, which includes some combination of the following measures to City satisfaction:</p> <ul style="list-style-type: none"> ▪ preferential carpool parking, ▪ carpool matching program, ▪ dedicated employee transportation coordinator, ▪ information provided on transportation alternatives, ▪ secure bike parking, ▪ showers and changing facilities, ▪ alternative work schedules, and ▪ telecommuting options. <p>(c) At least 15 percent of fleet vehicles and boats associated with the planned delta research center should be alternative-fueled (e.g., biodiesel, electric).</p> <p>(d) Shore power connections should be provided for boats to minimize engine idling and</p>		

S = Significant
 LS = Less than significant
 SU = Significant unavoidable impact
 NA = Not applicable

Impacts	Potential Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Potential Significance With Mitigation
		<p>GHG emissions-generating auxiliary power sources.</p> <p>(e) Boat idling time should be limited to five (5) minutes when not in use, unless more time is required per engine manufacturer's specifications or for safety reasons.</p> <p>(f) All buildings should exceed California Code of Regulations Title 24 Energy Efficiency Standards. Related Title 24 calculations should be prepared and signed by a California Association of Building Energy Consultants (CABEC) certified energy plans examiner (CEPE).</p> <p>(g) On-site renewable energy systems that produce either electricity and/or thermal energy for on-site use should be considered, in addition to passive solar energy efficiency strategies.</p> <p>(h) New construction, additions and alterations should adhere to California Green Building Code standards.</p> <p>(i) Buildings with a floor area greater than 10,000 square feet should achieve Leadership in Energy and Environmental Design (LEED) New Construction Certification or equivalent.</p>		

S = Significant
 LS = Less than significant
 SU = Significant unavoidable impact
 NA = Not applicable

Impacts	Potential Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Potential Significance With Mitigation
		<p>(j) Roofing materials and paving should have a high solar reflective index (preferably a Solar Reflectance Index greater than 29 percent or a solar reflectance greater than 0.3).</p> <p>(k) Existing healthy mature trees in the Project Area should be preserved and maintained.</p> <p>(l) Paved areas within 50 feet of buildings should be shaded by trees, shrubs, or shading elements.</p> <p>(m) Sports field lighting should employ high efficiency lighting design and equipment.</p> <p>The effectiveness of such measures in reducing the GHG emissions of future development within the proposed Project Area to below the threshold of significance cannot be determined. Therefore, the incremental contribution of the Project to the cumulative impact of global climate change would remain considerable and thus significant and unavoidable.</p>		

HAZARDS AND HAZARDOUS MATERIALS

Impact 15-1: Emergency Response Impacts. Beach Drive and 2nd Street provide the only direct access between the proposed Project Area and central Rio Vista. The Rio Vista Fire Department (RVFD) fire station is

S	Mitigation 15-1. The Project shall fund its fair share contribution of improvements to 2 nd Street at the Marina Creek crossing to provide uninterrupted access by emergency vehicles during flooding conditions and thus maintain	City and Agency	SU
---	--	-----------------	----

- S = Significant
- LS = Less than significant
- SU = Significant unavoidable impact
- NA = Not applicable

Impacts	Potential Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Potential Significance With Mitigation
<p>located at 350 Main Street in downtown Rio Vista. The response time goal for RVFD is four minutes. The Rio Vista Police Department (RVPD) operates out of 50 Poppy House Road in the downtown. RVPD has a response time goal of three minutes or less for 911 emergency calls and 10 minutes or less for non-emergency calls. Second Street is subject to occasional flooding where it crosses Marina Creek just north of Beach Drive. If flood waters are deep enough and not passable, emergency vehicles would need to travel an indirect route via Highway 12, Amerada Road, Emigh Road, and Montezuma Road, which would substantially increase emergency response times to and from the proposed Project Area. Development facilitated by the proposed Redevelopment Plan would therefore place additional people and property at risk due to longer response times associated with occasional flooding of 2nd Street at the Marina Creek crossing. The contribution of the Project to this existing emergency response condition would be cumulatively considerable and thus a potentially significant impact.</p>		<p>adequate emergency response times to the proposed Project Area. This mitigation measure would reduce this impact to a less than significant level; however, no such improvements are currently planned, and the timing of improvements is uncertain. Thus, this impact would remain significant and unavoidable.</p>		

-
- S = Significant
 - LS = Less than significant
 - SU = Significant unavoidable impact
 - NA = Not applicable

2.4 ALTERNATIVES

The CEQA Guidelines stipulate that an EIR must evaluate a reasonable range of feasible alternatives to the project or the location of the project that would achieve most of the basic project objectives and would avoid or substantially lessen any of the significant impacts of the project. Pursuant to this requirement, Chapter 18 herein identifies and compares four alternatives to the Project. These four alternatives are:

Alternative 1: No Build

The CEQA Guidelines require evaluation of a No Project alternative and require the No Project analysis to "discuss the existing conditions at the time the (EIR) notice of preparation is published...as well as what would reasonably be expected to occur in the foreseeable future if the project were not approved, based on current plans." Accordingly, Alternative 1: No Build, is included in Chapter 18 to compare the effects of the Project with existing conditions, and Alternative 2: No Project, is included to compare the effects of the Project with future conditions without the Project. Alternative 1: No Build would maintain the existing conditions as described in the "Setting" sections of each environmental topic chapter in this EIR. There would be no development within the proposed Project Area and existing blighting conditions would remain.

Alternative 2: No Project

Under this alternative, the Redevelopment Plan would not be adopted. The proposed redevelopment Project Area would not be established, tax increment revenue would not accrue, redevelopment activities would not be undertaken within the proposed Project Area, and affordable housing projects and programs funded by the portion of tax increment revenue that would go to the Housing Set-Aside Fund would not occur. Asbestos and lead abatement, site preparation, the installation of needed roads and infrastructure, and development and revitalization of the proposed Project Area in accordance with the General Plan would eventually occur, but would be very substantially delayed. This alternative would ultimately result in the same mixture and intensity of development within the proposed Project Area as the Project, but only half as much development would occur within the 2030 time frame analyzed in this EIR.

Alternative 3: Redevelopment Plan with Reuse of Historic District

This alternative would consist of the adoption and implementation of the Redevelopment Plan, with the rehabilitation and reuse of the existing buildings and facilities within the proposed Project Area that are contributing elements to the previously-suggested "U.S. Engineer Storehouse Historic District" in a manner that fully adheres to the Secretary of the Interior's Standards for the Rehabilitation of Historic Properties, so that the integrity of the suggested historic district and its continued eligibility to the California Register of Historic Resources is preserved. This alternative is intended to avoid the significant and unavoidable impact of the Project on historic resources. A portion of redevelopment resources would be committed toward the additional costs of rehabilitation. The development assumptions and other aspects of this alternative would be the same as with the Project.

Alternative 4: Redevelopment Plan without Parks and Recreation

This alternative would involve the adoption and implementation of the Redevelopment Plan, but without the expenditures for park and recreation facilities currently identified as part of the

Project. Specifically, the multi-purpose community center, outdoor sports fields and courts, children's park, picnic area and public restrooms would not be provided. The estimated \$5.5 million in tax increment funds anticipated to be used for these facilities under the Project would instead be used for other redevelopment activities within the proposed Project Area, such as infrastructure improvements, site preparation, asbestos and lead clean-up, rehabilitation of buildings and structures, and economic development incentives. This alternative is intended to provide additional funding to more directly stimulate economic development within the proposed Project Area, to reflect the emerging possibility of the use of the proposed Project Area solely for a research station, and to avoid the significant traffic impacts identified in Chapter 8, Transportation. In order to reduce the number of vehicle trips and avoid significant traffic impacts, this alternative would also slightly reduce the size of the lodge to 130 rooms. The total building floor area would be reduced by 9 percent. The remaining development assumptions and other aspects of the Redevelopment Plan would be the same as with the Project.

Alternative 5: Redevelopment Plan with Delta Interpretive Center

This alternative reflects the emerging possibility of the near-term development within the proposed Project Area of an approximately 10,000 square foot Sacramento-San Joaquin Delta interpretive center, and associated parking lot and nature trail. The interpretive center would feature interactive exhibits that teach visitors about the River and Delta environment. The City has been in discussions with resources agencies wishing to partner with the City in the project and is currently pursuing grant assistance in funding its development.

The interpretive center and parking lot would be located on the upper terrace portion of the proposed Project Area just to the west of the water tower. The nature trail would extend from the interpretive center down to the waterfront and along a portion of the waterfront, with educational displays along the trail. An educational "habitat restoration area," consisting of a small wetland located by the river on the south side of the former marine railway, may be developed in a separate, later development phase.

This alternative would still involve the adoption and implementation of the Redevelopment Plan, and ultimately the same intensity of development within the proposed Project Area by 2030 as the Project. The mix of land uses assumed to be developed by 2030 would be the same, except that the community center would be reduced in size by 10,000 square feet and the 10,000 square foot interpretive center would be included in its place. The 10,000 square foot interpretive center, and associated parking lot and nature trail, would be developed first.

3. PROJECT DESCRIPTION

This EIR chapter describes the proposed redevelopment project or "Project" addressed in this program EIR. As stipulated by the CEQA Guidelines, the project description has been detailed to the extent needed for evaluation and review of environmental impacts. In accordance with Section 15124 (Project Description) of the CEQA Guidelines, this chapter describes (a) the location and characteristics of the proposed Project Area, (b) the Project background and history, (c) the basic objectives of the Project, (d) the proposed redevelopment actions that constitute the Project, (e) the Project-facilitated development assumptions and time frame used throughout this EIR, and (f) required Project (Redevelopment Plan) documentation procedures and approvals.

3.1 PROJECT AREA LOCATION AND CHARACTERISTICS

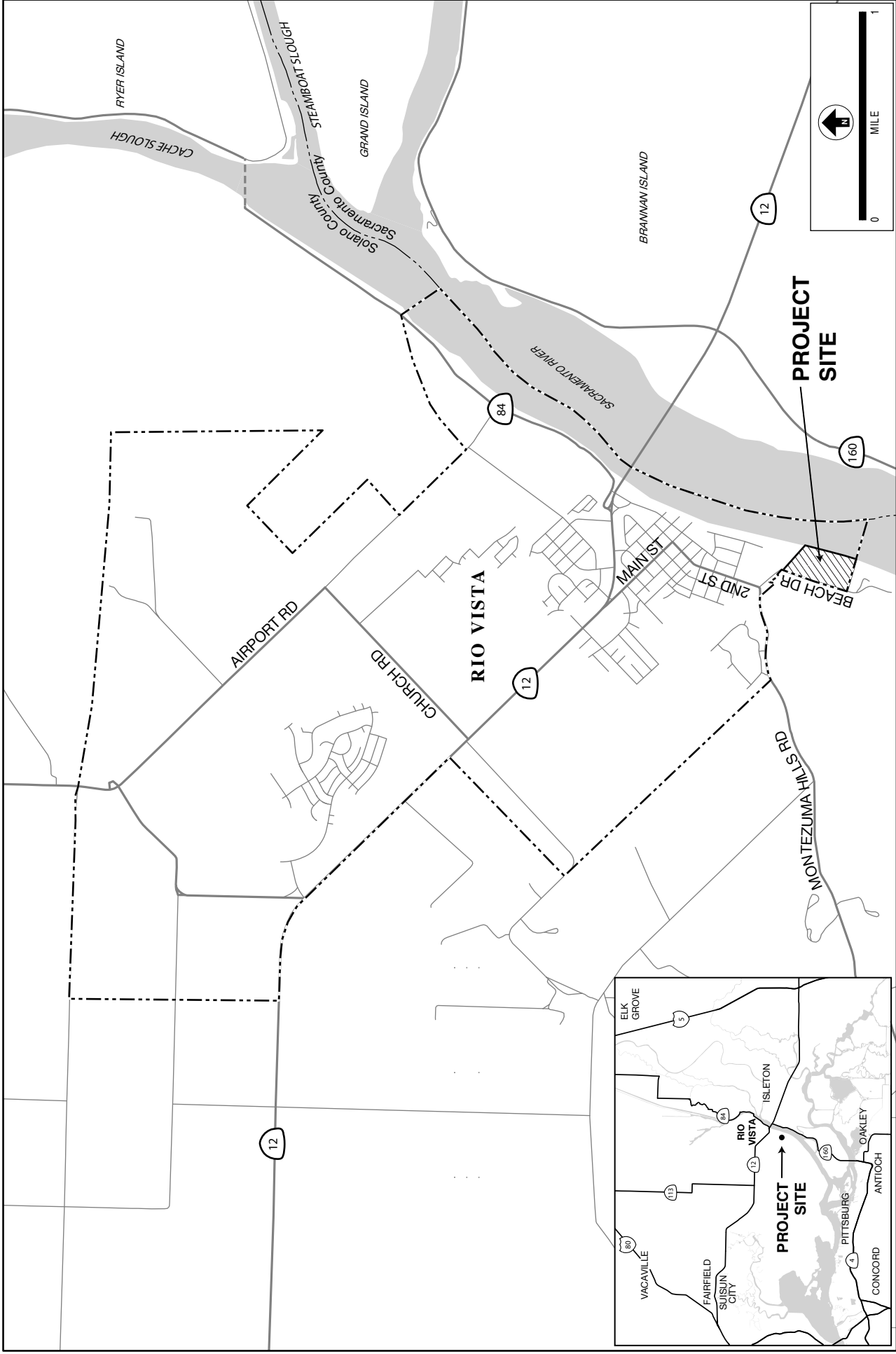
3.1.1 Regional and Local Setting

The project location is illustrated on Figure 3.1. As shown, the proposed Project Area--i.e., the former Rio Vista Army Reserve Center--is located in the City of Rio Vista, Solano County, California, approximately 48 miles southwest of Sacramento and 65 miles northeast of San Francisco. Regional access to the proposed Project Area is provided by State Route (SR)12, SR 84 and SR 160. SR 12, commonly referred to as "Highway 12," provides a connection between Fairfield and Interstate 80 (I-80) to the north and the San Joaquin Valley, Interstate 5 (I-5) and SR 99 to the southeast, and crosses the Sacramento River at Rio Vista. SR 84 travels along the west side of the Sacramento River north to West Sacramento. SR 160 travels along the east side of the Sacramento River north to West Sacramento and south to Antioch.

As shown on Figure 3.1, the proposed Project Area is located on Beach Drive, in the southern part of Rio Vista. Beach Drive connects to Second Street, the city's main north-south street leading to central Rio Vista to the north. Beach Drive also provides access to a U.S. Coast Guard Station, the Beach Drive Wastewater Treatment Facility, and Sandy Beach Regional Park to the south of the Project Area. The proposed Project Area is located on the west bank of the Sacramento River, south of Cache Slough and north of the San Joaquin River and Suisun Bay.

3.1.2 Project Area Characteristics

The proposed Project Area is shown in Figures 3.2 and 3.3 and Photos 1 through 10. As shown on Figure 3.2, land uses immediately adjacent to the proposed Project Area include a public marina to the north, a U.S. Coast Guard station to the south, agricultural land on the opposite side of Beach Drive to the west, and agricultural land across the Sacramento River to the east. A few single family homes are also located on the opposite side of Beach Drive near the northwest and southwest corners of the site.



SOURCE: Wagstaff/MIG

Figure 3.1

PROJECT LOCATION

The proposed Project Area is an approximately 28.16-acre parcel (Assessor's Parcel Number 0049-320-060), which extends 2,052 feet along Beach Drive, approximately 1,600 feet along the Sacramento River, and is approximately 680 feet wide. The proposed Project Area is composed of two topographical terraces separated by a slight bluff. The two terraces include a flat, lower terrace lying a few feet above the level of the river at an average elevation of approximately 18 feet above mean sea level (msl), and an upper terrace at an average elevation of approximately 33 feet above msl. Existing vacant buildings and other facilities remaining from the previous military use are mostly clustered on the lower terrace along the central waterfront portion of the property. Existing vegetation consists of non-native grasses, shrubs and trees planted as landscaping around the existing buildings, mature trees along the line between the upper and lower terraces, limited riparian plants along the river, and non-native weedy, mowed grasses throughout the remainder of the site.

Table 3.1 and Figures 3.2 and 3.3 show the existing buildings and other facilities within the proposed Project Area. Several of these facilities are shown in Photos 1 through 8. There are 14 existing buildings, with a total floor area of 56,415 square feet, plus 10 other facilities, all remaining from the former military use. The buildings include a ship repair shop and two warehouses, each over 10,000 square feet in size, one larger and two smaller administration buildings, seven shops and storage buildings, and a guard house near the site entry. The facilities include a well; an elevated water storage tank; water, sewer and storm drainage pump stations; a marine railway where boats were drawn out of the water for repair; four docks and 14 moorings in the river. With the exception of the guard station and the vehicle maintenance shop, all of the existing buildings and other facilities are located on the lower terrace, along the river. A number of the former military buildings and other structures have been removed. The foundations of seven of these former structures remain on the site.

Existing water facilities on the site include a private well, an elevated storage tank, water distribution pipelines, a river intake fire flow pump, nine fire hydrants, and fire flow pipelines. Existing sewer facilities on the site include gravity sewer pipelines, a sump and sewer pump station, and a pressure pipeline. Existing storm drainage facilities on the site include ten catch basins and storm drain pipelines. The 1998 Rio Vista Army Base Reuse Plan evaluated the existing infrastructure within the proposed Project Area and determined that it was inadequate to serve new development and not worth retaining. The storage tank would likely not meet current building code seismic safety requirements for water storage use.¹

3.1.3 Existing Blighting Conditions

The proposed Project Area is characterized by both physical and economic blighting conditions. All of the existing structures in the proposed Project Area (see Table 3.1 and Photos 1-10) were built before 1960, have not been maintained for 20 years, and have been unsecured and subject to vandalism. A Feasibility Study prepared on behalf of the Redevelopment Agency has verified that blighting conditions exist within the proposed Project Area, including buildings in which it is unsafe or unhealthy for persons to live or work, and conditions that prevent or substantially hinder the viable use or capacity of existing buildings and lots. The Feasibility Study states that the existing buildings exhibit serious dilapidation and deterioration and are unsafe or unhealthy for persons to live or work.

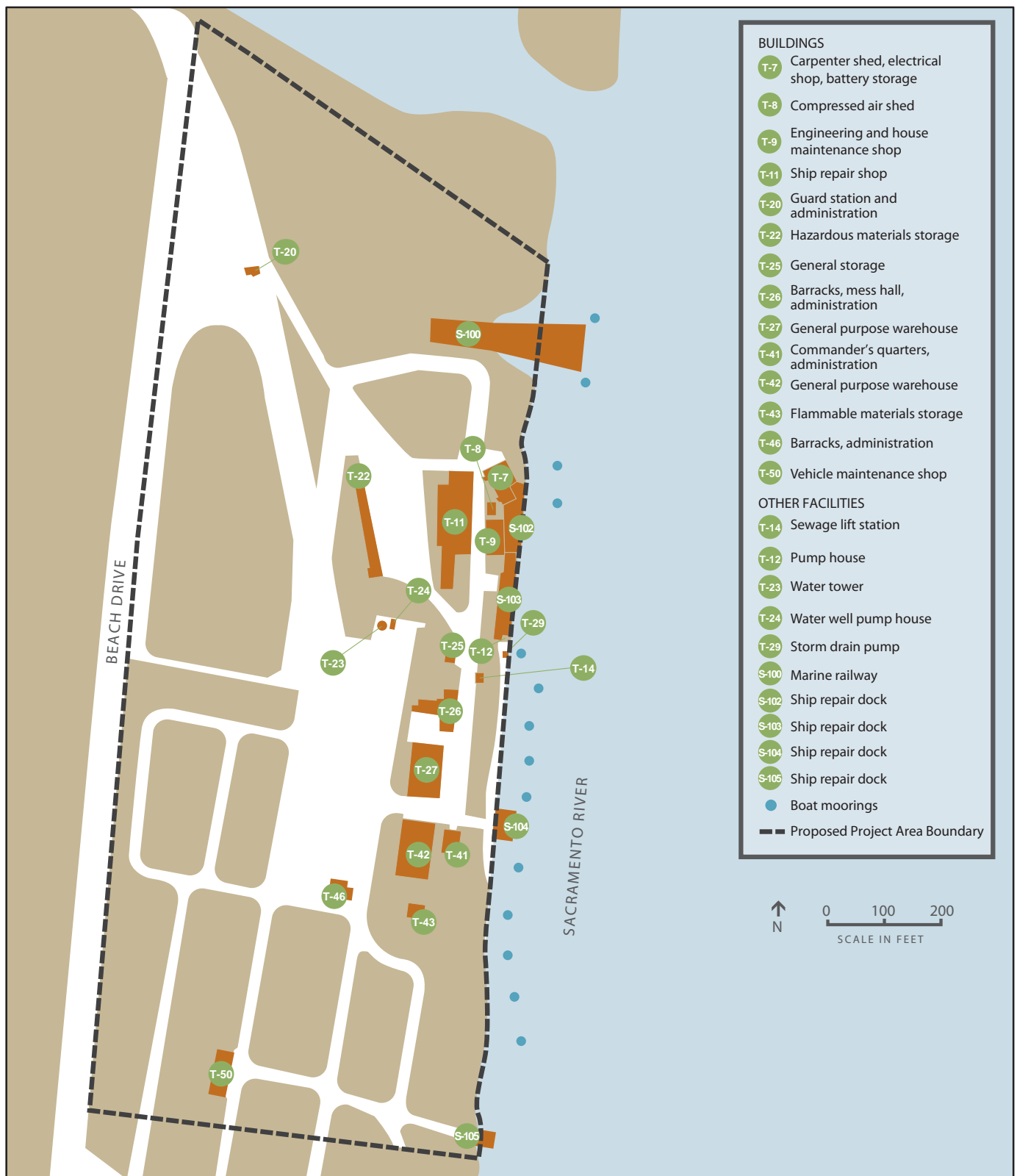
¹Cecil Dillon, Dillon Engineering. Personal communication with Ricardo Bressanutti, February 26, 2010.



SOURCE: Google; Wagstaff/MIG

Figure 3.2

PROPOSED PROJECT AREA



SOURCE: U.S. Army Corps of Engineers; Wagstaff/MIG

Figure 3.3

EXISTING BUILDINGS AND FACILITIES



Photo 1. Looking southeast to the Sacramento River and Buildings T-11 and T-7, from the northwest corner of the proposed Project Area.



Photo 2. Looking south. S-103 Ship repair dock. Building T-26 Barracks, mess hall and administration is to the right.



Photo3. Looking west. S-100 Marine railway ramp where boats were drawn out of the river for repair. Boat cradle and winch house were removed. Emergent wetlands along edges of ramp.



Photo 4. Looking north. Buildings T-27 and T-26 are to the left. Building T-9 is ahead. Dilapidated, unsafe conditions are evident.



Photo 5. Looking north. T-11 Ship repair shop in dilapidated conditions with damaged exterior materials and faulty weather protection.

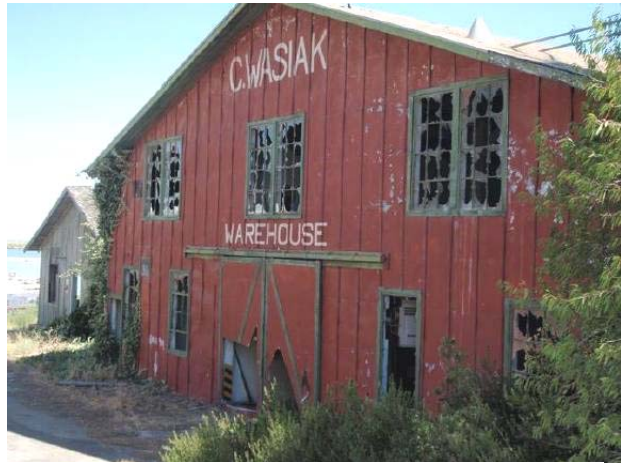


Photo 6. Looking west. T-42 General purpose warehouse with broken windows and damaged building materials.



Photo 7. T-11 Ship repair shop interior, unsecured and unsafe, with debris, and distinctive roof trusses.



Photo 8. T-23 Water tower is a landmark visible from outside the site. Mature trees on the site.



Photo 9. Redevelopment would clean up asbestos and lead-based paint contamination.



Photo 10. Looking north. S-103 and S-102 Ship repair docks.

Table 3.1
EXISTING BUILDINGS AND FACILITIES

Facility Number ¹	Facility Use	Size (sq. ft.)
<i>Buildings</i>		
T-20	Guard station, administration	389
T-11	Ship repair shop	11,148
T-9	Engineering, housing maintenance shop	2,489
T-7	Carpenter shed, electrical shop, battery storage	3,146
T-22	Hazardous materials storage ²	3,815
T-25	General Storage	870
T-26	Barracks, mess hall, administration	6,357
T-27	General purpose warehouse	10,290
T-42	General purpose warehouse	11,400
T-41	Commander's quarters, administration	1,148
T-43	Flammable materials storage	768
T-46	Barracks, administration	1,232
T-50	Vehicle maintenance shop	3,113
T-8	Compressed air shed	250
	TOTAL	56,415
<i>Other Facilities</i>		
T-12	Pump house	--
T-11	Sewage lift station ³	--
T-23	Water tower	--
T-24	Water well pump house	96
T-29	Storm drain pump ⁴	--
S-100	Marine railway ⁵	--
S-102	Ship repair dock	--
S-103	Ship repair dock	--
S-104	Ship repair dock	--
S-105	Ship repair dock	--
203-216	Moorings (14)	--

SOURCE: Rosenow Spevacek Group, Inc.; Preliminary Report, Rio Vista Army Reserve Center Redevelopment Project Area; December 14, 2009.

¹ Former Army facility numbers used in documents prepared for the Army and the base closure, which are part of the project record.

² Building was partially demolished.

³ Lift station equipment remains; building was removed.

⁴ Pipes remain; pump house was removed.

⁵ Wooden ramp remains; boat cradle and winch house were removed.

Blighting characteristics of the existing buildings include faulty weather protection, broken windows and doors, sagging roofs, holes in walls, exposed wiring, deteriorated eaves or overhangs, and deteriorated or damaged exterior building materials and roofing materials. A review of the existing buildings for structural soundness and renovation costs conducted for the 1998 Rio Vista Army Base Reuse Plan determined that, because the existing buildings would cost more to renovate and would be less efficient for the envisioned new uses than newly constructed buildings, none of the buildings should be saved and reused.

3.2 PROJECT BACKGROUND

3.2.1 State Redevelopment Policy

The State of California has declared that blighted areas constitute physical, social and economic liabilities in communities where such blight exists. In order to remove blight in communities, the State Legislature established local authority to create redevelopment agencies and granted local redevelopment agencies certain governmental functions and powers, most notably the ability to use tax increment financing.

Chapter 4.5 of the California Community Redevelopment Law provides redevelopment agencies with special legislative authority to create redevelopment project areas on the site of former military facilities. Base closures have been found to have a significant impact on the economy and social quality of surrounding communities, warranting inclusion into a redevelopment project area. Redevelopment authority can be applied to facilitate the reuse of closed military facilities and stimulate economic recovery by providing a mechanism for financing improvements that are needed to attract private investment.

3.2.2 Rio Vista Redevelopment History

The Rio Vista City Council adopted the City's first redevelopment project area in 1960, known as the Morgan Community Tract Redevelopment Project Area, which expired on January 1, 2009. The City of Rio Vista Redevelopment Agency was established in 1988. The City also adopted a second redevelopment project area in 1988, encompassing much of central Rio Vista, and known as the Rio Vista Redevelopment Project Area "A." Project Area "A" will remain active through 2028. If adopted, the proposed Rio Vista Army Reserve Center Project Area which is the subject of this EIR would be the third redevelopment project area established in the City.

3.2.3 Former Rio Vista Army Reserve Center

The former Rio Vista Army Reserve Center was used for maintenance, repair and storage of shallow-draft river and harbor craft from the time of its establishment in 1913 until it was deactivated in 1989. The facility was originally established by the U.S. Army Corps of Engineers and, from 1919 to 1944, was used as a marine storage area, an engine and hull repair facility for motor launches and barges, and a surface maintenance facility for steel pontoons used for floating suction dredges in the construction of the Sacramento River Flood Control Project, one of California's largest and most significant public works. After 1952, the property was used by the Army Transportation Corps for removal of water, fuel and debris from vessels going into wet/dry storage; maintenance of propellers and rudders; vessel painting; and installation and testing of vessel navigation and electronic equipment. In the 1980s the property was used by the Army Reserve in training Army reserve units for amphibious assaults, ship

maintenance, and service as deck hands. The facility was deactivated in 1989 and has not been used or maintained for the past 20 years. Additional information on the history of the proposed Project Area is presented in chapter 6, Cultural and Historic Resources, of this Draft EIR.

3.2.4 Base Closure and Transfer to City

The Rio Vista Army Reserve Center was formally closed in 1995 by the Base Realignment and Closure Act. Under the Act, the Army was required to remediate toxics contamination associated with its past activities at the Center. The Army used the 1998 Rio Vista Army Base Reuse Plan (further described in section 3.2.5 below) to determine the appropriate level of clean-up based on the type, intensity and location of planned future uses of the property, and commenced a hazards and hazardous materials remediation program. In 2001, the Army made Findings of Suitability for Transfer, which stated that the site, as proposed to be reused, no longer posed a public safety or health risk.

Following several years of joint planning by the City and the Army, demolition and stabilization of buildings and facilities on the site, and hazardous materials clean-up to a level appropriate for the intended future uses, the land was conveyed to the City in 2003. The conveyance of land to the City was authorized subject to the condition that the property be used for recreational purposes. For a definition of recreational uses, the Army's conveyance to the City used the definition used by the National Park Service, which also allows limited commercial activities that support recreational uses, such as campgrounds, lodging, restaurants, and small retail shops.

3.2.5 Rio Vista Army Base Reuse Plan

A Rio Vista Army Base Reuse Plan ("Reuse Plan") was originally prepared in December of 1998, and was supplemented in 2001, to set forth a vision for the reuse of the proposed Project Area, consistent with the conditions of conveyance from the Army to the City. A primary purpose of the Reuse Plan was to identify a range of anticipated future uses of the site for which the Army could determine and carry out an appropriate level of hazardous materials remediation sufficient to protect those uses. Although the Reuse Plan itself did not establish official City policy with respect to land use, the Reuse Plan did serve as the basis for the subsequently-adopted General Plan designation and policies that pertain to the site. The precise mix and layout of uses ultimately developed in the proposed Project Area may differ from the Reuse Plan as a result of changing needs and opportunities over time. The Reuse Plan and the General Plan provisions for the proposed Project Area are further described in Chapter 4, Land Use and Planning.

The Reuse Plan proposed a public-private redevelopment program with a combination of citywide-serving recreation uses and visitor-serving uses oriented toward the river and Delta. The 1998 Reuse Plan preferred land use concept identified the following potential "market feasible" uses:

- a 21,000 square foot multi-purpose community center with indoor hardwood courts, classrooms and meeting rooms;
- outdoor active recreation areas with three soccer fields or four ballfields, outdoor basketball courts and four tennis courts;
- a 2-acre Children's Delta Discovery Park with interactive activities and exhibits;

- a riverfront promenade incorporating the existing wharf and a small public marina/cove with a few berths for visitors;
- a 50-room lodge/country inn retreat/conference center with meeting rooms for 100 persons, a small café/coffee shop, and a small retail shop organized along the waterfront and around the marina/cove;
- a 9,000-square-foot free-standing restaurant with some retail;
- a camping area and recreational vehicle park;
- a picnic area;
- 380 off-street parking spaces; and
- new street and water, sewer and storm drainage infrastructure.

The Reuse Plan also determined that none of the buildings on the site should be saved and renovated, based on the cost of rehabilitation and the buildings' limited suitability for future uses. When the 1998 Reuse Plan was prepared, no specific user of a marine research facility was identified as having the need or resources for a Rio Vista facility at that time. Additionally, dry boat storage was deemed incompatible with the envisioned recreation uses.¹

A subsequent 2001 Reuse Plan Supplemental Economic Analysis commissioned by the City reevaluated the financial feasibility of a possible marine research facility, and compared the research facility actively being planned by a consortium of State and federal agencies to the lodge-retail-restaurant use recommended by the 1998 Reuse Plan in terms of jobs, city revenue and economic multiplier effects. The 2001 Supplemental Economic Analysis concluded that a research facility use was a realistic project, was financially feasible, and would have significantly more economic benefits than a lodge use, which was determined to be infeasible at the time.²

3.2.6 Possible Rio Vista Estuarine Research Station

The Sacramento-San Joaquin River Delta, formed by the confluence of California's two largest rivers, plays a major role in the state's water supply, agricultural industry and overall prosperity, and serves as important habitat for more than 750 animal and plant species, several listed as threatened or endangered. The Interagency Ecological Program (IEP) is a multi-agency consortium of the Department of Water Resources (DWR), the U.S. Bureau of Reclamation, and seven other State and Federal agencies working together to provide information on the factors that affect ecological resources in the Delta to allow for more efficient management of the estuary. The IEP has identified the proposed Project Area as an ideal location for development of a Rio Vista Estuarine Research Station, which would consolidate at one location all member agency personnel, boats and other equipment needed to implement the IEP's Bay-Delta monitoring and research activities. While facility plans have not been finalized, preliminary

¹City of Rio Vista, Rio Vista Army Base Reuse Plan, 1998.

²Brion & Associates, Rio Vista Army Reserve Center Reuse Plan Supplemental Economic Analysis, July 2001, prepared for the City of Rio Vista, pages 1-2.

concepts for the Rio Vista Estuarine Research Station have called for offices, meeting space, laboratories, fabrication shops, warehouse and open storage. The 2001 Base Reuse Plan Supplemental Economic Analysis estimated a research facility would generate 230 permanent new jobs on-site, an additional 262 indirect jobs throughout Solano County, \$2.2 million in annual payroll, and \$281,000 in annual revenue to the City.¹ The City has been working with the DWR to locate the Rio Vista Estuarine Research Station in the proposed Project Area.

The U.S. Fish and Wildlife Service has also indicated interest in locating fish hatcheries within the proposed Project Area.

3.2.7 City Fiscal Challenges

The City continues to contend with substantial fiscal challenges. These conditions make lasting economic recovery from the Army Reserve Center closure particularly important to the City, while leaving little City general fund revenue available to stimulate redevelopment. Sales taxes, property taxes, building permit fees, development fees, and State funding are severely limited. The City has turned to asset sales to deal with a large deficit remaining despite staff reductions, frozen salaries, reduced hours and program cuts. The City has determined that redevelopment-assisted revitalization of the former Army Reserve Center is warranted to stimulate the external investment and economic growth necessary to support City service costs.

3.3 PROJECT OBJECTIVES

The Project is intended to enable the City to meet its objectives of blight elimination and public-private revitalization within the proposed Project Area, and economic recovery throughout the community. The uses that the City envisions for the proposed Project Area require substantial expenditures by and financial assistance from the City for asbestos clean-up, blight removal and infrastructure improvements. The City has identified the following primary objectives of the Project.

- **Clean Up Remaining Hazardous Materials Contamination.** The existing former military buildings and structures remaining in the proposed Project Area contain asbestos-containing building materials and lead-based paint, which could pose a hazard to human health or the environment during building demolition or rehabilitation. The substantial added cost of properly removing and disposing these hazardous materials could continue to deter private sector investment. The Project would enable the City to remediate these conditions or to assist with the cost of remediation, and thereby attract private investment. The presence of hazardous materials in the Project Area is further addressed in Chapter 15, Hazards and Hazardous Materials, of this Draft EIR.
- **Provide Needed Public Improvements, Facilities and Utilities.** Costly infrastructure improvements would be necessary to bring the proposed Project Area up to current City standards and attract private investment. Without proper roads, water, sewer and storm drainage facilities, the proposed Project Area may remain stagnant and improperly utilized. With the current economic decline and constrained lending conditions, the financial capacity

¹Brion & Associates, Rio Vista Army Reserve Center Reuse Plan Supplemental Economic Analysis, July 2001. The jobs, city revenue and economic multiplier effects of a proposed research station, lodge and restaurant within the proposed Project Area estimated in 2001 Base Reuse Plan Supplemental Economic Analysis are discussed more fully in chapter 17, CEQA-Required Assessment Considerations.

of the City and private developers is more limited. Redevelopment tools would improve the ability of the City to secure additional outside funding sources for needed infrastructure.

- **Stimulate Economic Development and Recovery from the Base Closure.** The Project would generate cash flow in the proposed Project Area that could be used by the City to secure funding, eliminate blighting influences, stimulate economic development and provide additional employment opportunities. Such redevelopment could enable and speed up the community's stalled recovery from the closure of the Rio Vista Army Reserve Center by attracting visitors, increasing demand for local goods and services, creating new jobs, and generating additional property tax, development fee and sales tax revenues.
- **Develop New Citywide-serving Recreational Amenities.** As previously explained, intended public recreational uses for the proposed Project Area include a community center, outdoor sports fields and courts, an interactive children's park, a picnic area, a riverfront promenade and a small public marina/cove, and a camping area and recreational vehicle park. Redevelopment tools, including tax increment, would allow the City to leverage local public tax dollars to secure additional outside funding sources for desired recreational amenities.
- **Attract the Rio Vista Estuarine Research Station.** As also previously explained, the IEP is interested in the proposed Project Area as an ideal location for a Rio Vista Estuarine Research Station. The Project would enhance the City's ability to assist the DWR in locating the facility within the proposed Project Area.
- **Help Meet the City's Need for Affordable Housing.** As required by California Community Redevelopment Law section 33334.2, 20 percent of the proposed Project Area tax increment revenue would be deposited into a housing fund for the purposes of increasing, improving and preserving the community's supply of low and moderate income housing, both inside and outside the City's redevelopment areas.

3.4 ANTICIPATED REDEVELOPMENT ACTIONS

The proposed Redevelopment Plan describes proposed financing actions and lists proposed community and recreational facilities and infrastructure improvements that could be undertaken by the Redevelopment Agency to assist the City and the private sector with redevelopment of the proposed Project Area. Anticipated redevelopment actions could also include site preparation, site clean-up, other rehabilitation and economic development incentives, and assistance towards fulfilling the community's identified needs for affordable housing.

3.4.1 Proposed Redevelopment Financing

The Redevelopment Agency would use various approaches to financing implementation of redevelopment actions, primarily tax increment revenue from the Project Area, as well as possible grants and loans from the County, State and Federal government, issuance of bonds, proceeds from lease or sale of City-owned property, revenue from participation in development, and/or loans from private financial institutions.

Tax increment financing is typically the primary funding mechanism for redevelopment. Tax increment financing would allow the Redevelopment Agency to receive a portion of future property tax revenue growth (or "tax increment") from future increases in property value

resulting from development within the proposed Project Area.¹ A portion of the tax increment would also be forwarded as statutory payments, also known as "pass-throughs," to the 15 other entities, such as Solano County and the River Delta Unified School District, that receive property tax revenue from within the proposed Project Area. The Redevelopment Agency may use these future tax increments to pay costs directly or it may borrow funds or issue bonds that are supported by tax increment revenues.

The proposed Redevelopment Plan contains amount and time limits for the collection of tax increment revenue and incurring bonded indebtedness. The City may collect tax increment for a period of 45 years after the Solano County Auditor-Controller certifies that the first \$100,000 of tax increment funds from the proposed Project Area have been paid to the City. Based on projections of increases in the assessed value of the proposed Project Area with redevelopment-facilitated development, it is anticipated that the City would reach \$100,000 of tax increment revenue by June 30, 2014.

This estimated 2014 certification date is the basis for the proposed plan revenue, debt and time limits presented in Table 3.2. As shown, the Redevelopment Plan would provide the Redevelopment Agency with the ability to incur debt for a 20-year period after the Auditor Certification Date and to maintain up to \$15 million of outstanding bonded indebtedness at a given time.

Projected tax increment revenues and project costs are shown in Table 3.3. As shown, it is estimated that the Redevelopment Agency would receive a total of approximately \$42.1 million in tax increment revenue over the approximately 45-year duration of the Redevelopment Plan. Approximately \$8.4 million (20 percent) would go to the housing set aside fund and \$20 million (47 percent) to statutory payments to other taxing entities, leaving \$13.7 million available for projects and debt repayment.

3.4.2 Community and Recreational Facilities

The Redevelopment Agency anticipates spending approximately \$5.5 million on community and recreational facilities projects over the duration of the Redevelopment Plan. Proposed community facilities include a multi-purpose community center, outdoor sports fields, children's park, and picnic area. Table 3.4 presents proposed community facilities and costs.

3.4.3 Infrastructure Improvements

The Redevelopment Agency anticipates spending approximately \$3.0 million on site and infrastructure improvements over the duration of the Redevelopment Plan. Such projects include demolition, hazardous materials clean-up, marina docks and berths, walkways, a plaza and riverfront promenade, streets and parking, landscaping, and water,

¹The adoption of the redevelopment plan and establishment of tax increment funding would not change the property tax rate payable by property owners in the proposed Project Area, but instead would reallocate to the Redevelopment Agency a portion of the property tax revenues arising from future increases in property values.

Table 3.2
PROJECT TAX INCREMENT REVENUE, DEBT AND TIME LIMITS

Amount Limits:

Cumulative Tax Increment Revenue	\$50 million
Bonded Indebtedness	\$15 million

Time Limits:

Incur Debt	June 30, 2034
Plan Effectiveness	June 30, 2044
Receive Tax Increment Revenue	June 30, 2059
Repay Debt	June 30, 2059

SOURCE: Rosenow Spevacek Group, Inc. 2009. Preliminary Report Rio Vista Army Reserve Center Redevelopment Project Area. December 14, 2009. Santa Ana, California.

Table 3.3
PROJECT REVENUES AND COSTS

Tax Increment Revenue:

Gross Tax Increment Collected	\$42.1 million
20% Housing Set Aside	(\$8.4 million)
Statutory Payments	(\$20.0 million)
Available for Projects and Debt Repayment	\$13.7 million

Project Costs:

Community Facilities and Infrastructure	(\$8.5 million)
Rehabilitation and Economic Development	(\$6.9 million)
Total Project Costs	(\$15.4 million)
Funding from Other Revenue Sources	(\$1.8 million)

Source: Rosenow Spevacek Group, Inc. 2009. Preliminary Report Rio Vista Army Reserve Center Redevelopment Project Area. December 14, 2009. Santa Ana, California.

Table 3.4
PROPOSED PARK, RECREATION AND COMMUNITY FACILITIES

<u>Item</u>	<u>Building Square Feet</u>	<u>Acres</u>	<u>Unit Cost²</u>	<u>Estimated Cost</u>
Multi-Purpose Community Center				
Basketball/Volleyball Court	9,000			
Lobby, Office, Restrooms	5,000			
Classrooms/Meeting Rooms	7,000			
Subtotal	21,000		\$135.68/sq. ft.	\$2,849,200
Active Recreation Area				
3 Soccer Fields or 4 Ballfields		7.81	\$61,000/acre	\$476,400
Outdoor Basketball Courts		0.55	\$1.83/sq. ft.	\$43,900
4 Tennis Courts		0.55	\$64.36/sq. ft.	\$1,544,500
Kids Park Area		2.00	\$244,000/acre	\$488,000
Picnic Area		1.21	\$3.66/sq. ft.	\$82,400
2 Restrooms	500		\$83.84/sq. ft.	\$41,700
Subtotal		2.12		\$2,676,900
Total Recreational Use Cost				\$5,526,100

SOURCE: Rosenow Spevacek Group, Inc. 2009. Preliminary Report Rio Vista Army Reserve Center Redevelopment Project Area. December 14, 2009. Santa Ana, California.

¹ Square feet and acres are based on estimates in the 1998 Rio Vista Army Base Reuse Plan and are subject to change.

² Marshall and Swift

sewer and storm drainage facilities. Table 3.5 presents proposed infrastructure improvements and costs.

3.4.4 Housing Programs

The Redevelopment Agency is required by law to set aside at least 20 percent of its gross tax increment revenues into a fund to increase, improve, and preserve the community's supply of affordable housing. Such funds may be used outside the proposed Project Area. The Redevelopment Agency anticipates spending approximately \$4.2 million of Project total revenues on affordable housing projects over the duration of the Plan. Housing fund expenditures will assist the City in implementing the goals and programs set forth in the Redevelopment Agency's affordable housing compliance plan and five-year implementation plan, as well as in the Housing Element of the City's General Plan. The Agency may conduct the following activities in carrying out this purpose:

- acquire land or building sites;
- improve land or building sites with on-site or off-site improvements;
- donate land to private or public persons or entities;
- construct, acquire and rehabilitate buildings or structures;

Table 3.5
**PROPOSED SITE PREPARATION, HAZARDOUS MATERIALS CLEAN-UP AND
 INFRASTRUCTURE IMPROVEMENTS**

Item	Estimated Cost ¹
Site Preparation	
Building demolition	\$175,000
Concrete Removal	250,000
Asbestos Removal ¹	285,000
Lead Paint Removal	50,000
Subtotal	\$760,000
On-Site Improvements	
Concrete Work	\$41,800
Roads/Parking	367,500
Landscaping and Irrigation	139,200
New Trees	7,000
Marina Plaza Area/Promenade	76,200
Marina (docks and berths)	100,000
Improvements to Existing Pier	39,000
Marina Walkway/Edge Treatment	80,000
Subtotal	\$850,700
Water Main and Storm Drainage	
Distribution System (Fire and Domestic)	\$75,000
Storm Drainage	100,000
Subtotal	\$175,000
Sanitary Sewer	
Collection System	\$45,000
Pump Station and Force Main	30,000
Subtotal	\$75,000
Utilities	
Electricity, Gas, Telephone, Cable TV	\$80,000
Subtotal	\$80,000
Offsite Road Improvements	
Road Widening and Overlay	\$100,000
Subtotal	\$100,000
Public Recreational On Site Costs	
Subtotal	\$177,400
Subtotal	
	\$2,218,100
Inflationary Adjustment ²	\$767,463
Total Costs	\$2,985,563

SOURCE: Rosenow Spevacek Group, Inc. 2009. Preliminary Report Rio Vista Army Reserve Center Redevelopment Project Area. December 14, 2009. Santa Ana, California.

¹ Unless otherwise noted, all cost estimates were provided by Dillon & Murphy, Consulting Engineers, for the Rio Vista Army Base Reuse Plan, December 1998.

² 34.6 percent adjustment for inflation between 1998 and 2008 based on Consumer Price Index for the San Francisco Bay Area.

- provide subsidies to or for the benefit of persons or families of very low, low, or moderate income;
- develop plans, pay principal and interest on bonds, loans, advances, or other indebtedness, or pay financing, carrying charges, or insurance premiums;
- maintain the community's supply of mobile homes; and
- preserve the availability to lower income households of affordable housing units in housing developments which are assisted or subsidized by public entities and which are threatened with imminent conversion to market rates.

3.5 DEVELOPMENT ASSUMPTIONS AND TIME FRAME

The type, intensity and character of the anticipated new uses and development facilitated by the Project would be in accordance with the land use designations and policies in the Rio Vista General Plan 2001, as well as the City-adopted zoning designations and standards, and other City-adopted policies, codes and standards that implement the General Plan. The General Plan limits the intensity of development on any individual parcel within the proposed Project Area to a 0.5 floor area ratio (FAR) and within the overall proposed Project Area to a 0.2 FAR.

The development assumptions used in this EIR are shown in Table 3.6.¹ As shown, it is assumed that the Project would facilitate the following development activity within the proposed Project Area:

- a 21,000-square-foot multi-purpose community center;
- 12.3 acres of active recreation space;
- a 150-room lodge with meeting and retail space (104,000 square feet);
- a 9,000-square-foot restaurant; and
- a 110,000-square-foot Delta research station.

The EIR assumes the general layout of uses depicted in the 1998 Reuse Plan with the community center and sports fields on the western portion of the site and remaining uses oriented toward the river on the eastern portion of the site. The EIR also assumes that, as indicated in the Reuse Plan, all of the existing buildings and structures on the site would be demolished to make way for the new uses.

¹The year 2030 development assumptions used in this EIR for a "worst-case" environmental impact assessment are different from the development assumptions used in the Preliminary Report for a "worst-case" economic feasibility analysis. The EIR assumes a higher intensity of development, which would result in greater environmental impacts. The Preliminary Report assumes a lower intensity of development, which would result in smaller increases in assessed value and lower tax increment revenue.

Table 3.6
 DEVELOPMENT ASSUMPTIONS

<u>Use/Facility</u>	<u>Building Space (square feet)</u>	<u>Site Area (acres)</u>
<i>Multi-Purpose Community Center</i> ^{1, 2}		
Indoor Basketball/Volleyball Court		1.8
Lobby, Office, Restrooms	5,000	0.1
Classrooms, Meeting Rooms	7,000	0.2
Subtotal	21,000	2.1
<i>Active Recreation</i> ^{1, 2}		
3 soccer fields/4 ballfields		7.8
Outdoor basketball courts		0.6
4 tennis courts		0.6
Kids park area		2.0
Picnic area		0.5
Restrooms	500	0.1
Boat storage (dry storage; 20 spaces)		
On-site parking area		0.7
Subtotal		12.3
<i>Lodge/Country Inn (Retreat/Conference Center)</i> ²		
Meeting Rooms for 100 persons	3,000	0.1
Lodge/Country Inn – 150 rooms	98,000	2.3
Restaurant	2,000	--
Retail	1,000	--
Subtotal	104,000	2.4
<i>Free-Standing Restaurant</i> ²		
	9,000	0.5
<i>Rio Vista Estuarine Research Station</i> ³		
Office	40,000	0.9
Laboratories	15,000	0.3
Metal, Wood and Net Fabrication Shops	23,000	0.5
Warehousing	32,000	0.7
Open areas (storage, maintenance, parking)		3.8
Subtotal	110,000	6.2
Circulation and infrastructure (16% of site)		4.5
TOTAL (0.2 FAR) ⁴	244,500	28.2

SOURCE:

¹ From 2009 Draft Preliminary Report Rio Vista Army Reserve Center Redevelopment Project Area, except for boat storage.

² From 1998 Rio Vista Army Base Reuse Plan, except for boat storage.

³ Based on Department of the General Services, Real Estate and Services Division October 16, 2006 program data for a new Department of Water Resources facility in Rio Vista.

⁴ General Plan Army Base Reuse Area Special District land use designation allows a 0.2-0.5 site FAR and a 0.2 FAR average for the district.

These assumptions are for EIR impact and mitigation analysis purposes only. They include capital improvements identified in the Preliminary Report and a mix of uses considered feasible and desirable by the City based on the 1998 Reuse Plan and its discussions with the DWR regarding the proposed Research Station, consistent with the conditions of the former base transfer and the General Plan. However, *no specific development program or site layout is proposed as part of the Project*. The precise mix and layout of uses that is actually developed is likely to vary from the above list due to changing opportunities and needs over time.

For purposes of “worst-case” environmental analysis, this EIR assumes that redevelopment activities authorized by the Project and full buildout of the proposed Project Area would occur within approximately 20 years, or by 2030, even though the proposed Redevelopment Plan would be effective for approximately 45 years, to 2044 (Table 3.2).

3.6 REQUIRED PROJECT DOCUMENTATION AND APPROVALS

3.6.1 Required Documentation

Pursuant to California Community Redevelopment Law, implementation of the Project will require preparation, presentation, and official acceptance of the following five documents describing the Project and its environmental and fiscal effects:

- a. The Preliminary Plan, which describes the proposed Project Area boundaries and anticipated redevelopment activities, the effect of the Project Area boundaries and anticipated redevelopment activities in alleviating physical and economic blight within the proposed Project Area, and a preliminary assessment of financing methods for the proposed activities;
- b. The Preliminary Report, which describes the need and the overall purpose and scope of the proposed Redevelopment Plan, and forms the basis for the taxing entity consultation, environmental review and community participation process leading to adoption of the Redevelopment Plan;
- c. The Environmental Impact Report, including this Draft EIR, as well as a Final EIR and associated statement of findings, which describes the potential environmental consequences of the proposed Redevelopment Plan and mitigation measures to reduce any significant impacts to less-than-significant levels;
- d. The Redevelopment Plan, the legal document which sets forth the Redevelopment Agency's powers and authorities within the proposed Project Area; and
- e. The Report to the City Council, which describes the need to establish the Redevelopment Plan and the process followed by the Redevelopment Agency toward its adoption, and the Implementation Plan, which describes the goals, objectives and projects proposed by the Redevelopment Agency, including actions and expenditures in the first five years of plan implementation. The Implementation Plan also describes how these projects would alleviate blighting conditions within the proposed Project Area and how the Redevelopment Agency will expend its housing set-aside fund. The Implementation Plan must be updated every five years.

3.6.2 Required Approvals and Public Review

The City Council and the Redevelopment Agency have or will hold public hearings on the proposed Rio Vista Army Reserve Center Redevelopment Plan. The public comments and deliberations during the public review process will be considered by the City Council and Redevelopment Agency before adoption of the Plan. The following steps are necessary for approval of the proposed Redevelopment Plan:

- a. Distribution of the Preliminary Report, Draft Redevelopment Plan, and Draft Environmental Impact Report to taxing agencies affected by the project, and to concerned individuals and organizations, for review;
- b. Preparation and presentation of, and public hearing on, the Report to the City Council and Final Redevelopment Plan at the Rio Vista Planning Commission, Redevelopment Agency, and City Council; and
- c. Adoption of the Redevelopment Plan and certification of the Final EIR by the Rio Vista City Council, based on consideration of the information contained in the Final Report to the City Council and Final EIR, related written comments and oral testimony received from concerned individuals and organizations, and all other evidence for and against the Project.

4. LAND USE AND PLANNING

This chapter describes existing land uses and agricultural resources in and around the proposed Project Area, pertinent City and regional land use policies and regulations, and the potential land use impacts of the Project.

4.1 SETTING

4.1.1 Regional and City Context

Rio Vista is located in rural southeastern Solano County, approximately 48 miles southwest of Sacramento and 65 miles northeast of San Francisco. Fairfield is 22 miles to the west, Dixon is 25 miles to the north, and Antioch is 18 miles to the south. The city is located on the west bank of the Sacramento River just south of the Yolo Bypass, at the western edge of the Sacramento-San Joaquin River Delta and at the eastern edge of the Montezuma Hills. The Project location and vicinity are shown in Figures 3.1 and 3.2 in Chapter 3, Project Description.

The Rio Vista city limits encompass a number of distinct and separate areas, notably the downtown and older central part of the community located on the river, outlying newly developing areas to the west, the Rio Vista airport and industrial areas to the north, and agricultural and vacant land in between these areas. The downtown and older neighborhoods are located on the river, just south of the Highway 12 Bridge, with small blocks laid out in a grid street pattern, traditional storefronts on and around Main Street, and strip commercial uses along Highway 12. Older post-war neighborhoods adjoin the original downtown.

Highway 12 and Airport Road connect the older part of the city to the newer neighborhoods to the west, where four, very large residential subdivisions approved in 1991, Brann Ranch, Gibbs Ranch, Riverwalk and Trilogy, will continue to slowly develop over time. Trilogy, a self-contained, gated senior-oriented residential subdivision located north of Highway 12 and west of Church Road, is the most developed of the four. Del Rio Hills was has been proposed with 2,500 residential units, 300,000 square feet of commercial space, a new school and a community park, approximately one mile east of the proposed Project Area.

The proposed Project Area is located on the river at the southern edge of Rio Vista, within the city limits and the city's Urban Growth Boundary. Lands to the west and south are located outside the city limits, within unincorporated Solano County territory, but are within the city's Sphere of Influence. The proposed Project Area is separated from the downtown and the rest of the city by an inlet leading to Marina Creek. Beach Drive provides access to Second Street, the city's main north-south street, and central Rio Vista to the north; to Montezuma Road to the west; and to a U.S. Coast Guard Station, the Beach Drive Wastewater Treatment Facility, and Sandy Beach Regional Park to the south.

4.1.2 Existing Land Uses Within the Proposed Project Area

The proposed Project Area is the now vacant site of the former Rio Vista Army Reserve Center. The Rio Vista Army Reserve Center was used for maintenance, repair and storage of shallow-draft river and harbor craft from the time of its establishment in 1913 until it was deactivated in 1989. The proposed Project Area has been unused since closure of the base 20 years ago. Existing vacant buildings and other facilities remaining from the previous military use are mostly clustered on the lower terrace along the central waterfront portion of the property. There are 14 buildings remaining from the former military use, with a total floor area of 56,415 square feet, and 10 other facilities, including a well, an elevated water storage tank, water, sewer and storm drainage pump stations, a marine railway where boats were drawn out of the water for repair, four docks and 14 moorings in the river. The perimeter of the proposed Project Area is fenced and there is an entry gate at the northwest corner. A PG&E natural gas regional transmission pipeline serving the greater Stockton area traverses the northern portion of the property from east to west.

The proposed Project Area is characterized by physical and economic blighting conditions. Existing facilities and blighting conditions within the proposed Project Area are further described in Chapter 3, Project Description and are shown in Table 3.1, Figures 3.2 and 3.3, and Photos 1-10, all in Chapter 3.

4.1.3 Existing Land Uses Surrounding the Proposed Project Area

Existing land uses in the vicinity of the proposed Project Area are shown in Figure 4.1. As shown, existing land uses immediately adjacent to the proposed Project Area include the Delta Marina Yacht Harbor Resort to the north, the U.S. Coast Guard Station Rio Vista to the south, the Sacramento River to the east, agricultural land to the west, a single family home across Beach Drive near the northwest corner of the property, and two single family homes across Beach Drive near the southwest corner.

The U.S. Coast Guard Station Rio Vista provides safety and rescue law enforcement services with a fleet of four 25-foot boats, four emergency vehicles, and a staff of 32 active duty and 12 reserve personnel. The facility contains operations buildings, a dock, residential apartments and parking.

The Delta Marina Yacht Harbor Resort contains several wharves with covered berths along both sides of the inlet to Marina Creek, and a fuel dock and the Point Waterfront Restaurant on the north side of the inlet. A gate to the marina is located near the northwest corner of the proposed Project Area.

Riverview Middle School, a small RV park and a single family residential neighborhood are located north of the marina. Approximately five single family homes are located on the south side of Beach Drive, and a boat repair business is located on the north side of Beach Drive, just west of the proposed Project Area. The Marina Creek wetland and the Vineyard Bluffs development are located further to the west. A single family home is located within the agricultural land at the top of the hill approximately 800 feet west of the property. The City's Beach Drive Wastewater Treatment Plant is located south of the U.S. Coast Guard Station. Beach Drive ends at Solano County's Sandy Beach Regional Park, located south of the wastewater treatment plant.



SOURCE: Rosenow Spevacek Group, Inc., Wagstaff/MIG

Figure 4.1

SURROUNDING LAND USE

Beach Drive, a two-lane paved rural road without shoulders, curb, gutter or sidewalk, extends along the western boundary of the proposed Project Area. North of the northwest corner of the proposed Project Area, Beach Drive is located within a public right-of-way. Alongside and south of the proposed Project Area, Beach Drive lies within a 20-foot wide easement owned by Solano County located on the adjacent private agricultural parcel to the west.

4.1.4 Agricultural Resources

(a) Existing Agriculture. Rio Vista is surrounded by agriculture to the north, west, and south, primarily grazing land and dry farmland planted in annual crops such as wheat and corn. Rio Vista was founded on agriculture. Farming remains an important part of the community's identity and economy.

The gross value of Solano County's agricultural production for 2008 was \$293 million, a new all-time high. Solano County farmers and ranchers produced over 80 different crops and commodities in 2008. The top ten crops were nursery products, alfalfa, tomatoes, cattle and calves, walnuts, milk, wine grapes, irrigated wheat, certified sunflower seed, and field corn.¹

The Montezuma Hills within unincorporated Solano County to the west of the proposed Project Area are in agricultural use, including the adjoining parcel across Beach Drive immediately to the west (Assessor's Parcel Number (APN) 0049-360-020). Wheat is the primary crop. Many natural gas wells are also located on farmland throughout the area.

(b) Important Farmlands. The California Department of Conservation Farmland Mapping and Monitoring Program tracks the conversion of agricultural land to urban uses throughout the state, using classifications of important farmlands developed by the US Department of Agriculture Natural Resources Conservation Service (NRCS). The NRCS classifies important farmland as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance, according to soil type and the availability of irrigation. Solano County's 153,298 acres of important farmland in 2008 were concentrated in the northeastern portion of the county because of the prevalence of grazing activity in the southern county.

The adjoining agricultural land immediately to the west of the proposed Project Area is designated "Other Land." Other Land is land not included in any other mapping category. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines, borrow pits; and water bodies smaller than forty acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land.

The proposed Project Area, the U.S. Coast Guard Station, the wastewater treatment plant, and Sandy Beach County Park are designated "Urban and Built Up" land, reflecting their developed characteristics.² Urban and Built Up Land is occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately six structures to a 10-acre parcel. This land is used

¹Solano County Department of Agriculture, 2008 Solano County Crop and Livestock Report, 2009.

²California Department of Conservation, Division of Land Resource Protection, Solano County Important Farmland 2008, July 2009.

for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.

4.1.5 Cumulative Impact Development Assumptions

According to CEQA Guidelines Section 15355, "Cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." CEQA Guidelines Section 15130(a) requires that cumulative impacts be discussed when the project's incremental effect is cumulatively considerable, as defined in Section 15065(c). "Cumulatively considerable" means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects. Section 15130 of the CEQA Guidelines states that "the discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone."

The CEQA Guidelines provide that a lead agency may describe the cumulative environment by either a listing of pending, proposed, or reasonably anticipated projects, or a summary of projections contained in an adopted general plan or a related planning document that describes area-wide or regional cumulative conditions. Table 4.1 shows the related projects considered in the cumulative impacts analyses for this EIR. Table 4.1 includes residential units and non-residential building space (i.e., floor area) which, as of the date of the Notice of Preparation of this EIR, have been approved but not yet occupied, within each of Rio Vista's six major approved development projects that remain incomplete: Brann Ranch, Del Rio Hills, Gibbs Ranch, Riverwalk, Trilogy and Vineyard Bluffs. For purposes of cumulative impact assessment throughout this Draft EIR, these currently incomplete projects are assumed to be completely built out by the 2030 analysis time frame of this EIR. All of these projects have been subject to their own environmental review in accordance with CEQA.

Cumulative impacts resulting from General Plan buildout (2025 "buildout" year) have been previously analyzed by the Rio Vista General Plan 2001 EIR (State Clearinghouse No. 2001032079).

4.2 PERTINENT PLANS AND POLICIES

4.2.1 Rio Vista General Plan

(a) Overview. The Rio Vista General Plan 2001 is the City's principal land use policy document. It sets forth a vision of the city in 2020 and a land use map, circulation map and principles, goals, policies and actions to achieve that vision. The General Plan contains State-mandated elements as well as Community Character and Design, Economic Development and Public Facilities and Services Elements.

The General Plan strives to achieve a balanced community, increased economic growth, more social, cultural, and recreational opportunities, a balance of jobs and housing, and needed infrastructure and services concurrent with development. The General Plan seeks to continue

Table 4.1
CUMULATIVE IMPACT DEVELOPMENT ASSUMPTIONS

Project	Residential (dwelling units)		Non-Residential (square feet)			Park (acres)
	Single-Family	Multi-Family	Commercial	Industrial	Public Facilities	
Brann Ranch	860	--	--	163,000	--	--
Del Rio Hills	1,921	502	300,000	--	800 student school	21.6
Gibbs Ranch	950	--	--	131,000	--	--
Riverwalk	738	229	90,000	--	170,000	--
Trilogy	2,300	--	--	--	--	--
Vineyard Bluffs	--	--	--	--	--	--
Subtotal	5,995	731	390,000	294,000	--	21.6
Project	--	--	<u>113,000</u>	--	<u>131,000</u>	<u>12.3</u>
TOTAL	5,995	731	503,000	294,000	301,000 800 student school	33.9

SOURCE: Fehr & Peers; Wagstaff/MIG.

the compact and contiguous growth patterns of the older parts of the city, and protect the agriculture and environmental resources surrounding the community. The General Plan establishes an Urban Growth Boundary coterminous with the city limits.

Buildout of the city's current General Plan would result in a projected total of 22,100 residents and 7,800 jobs by 2020. The General Plan notes that full buildout of the city's residential land use designations is unlikely to occur within the 2020 time frame of the General Plan.

(b) Army Base Reuse Area Special District. The General Plan land use designation for the proposed Project Area is "Army Base Reuse Area Special District." The following provisions are identified in the General Plan for the Army Base Reuse Area Special District:

Land Use Description and Location:

A 28-acre stretch of land along the Sacramento River, and south of the city limits formerly served as an Army Reserve Center and is now in the process of being conveyed to the City by the U.S. Army. The site is largely vacant but contains several outbuildings, some of which may undergo rehabilitation and incorporated into future development.

Purpose/Uses Allowed or Required:

The 1998 Army Base Reuse Plan suggests a range of public recreation, educational facilities, and institutional uses, such as a community park/sports facility, Delta science center, discovery park, and related uses. Residential would be allowed on a very limited basis as an accessory use. Commercial would be limited to recreation-related or -serving uses, such as lodgings or restaurants.

Mix of Uses

- 10-30% commercial recreation (lodge, retail, marina, boat launch)
- Range of public active and passive recreation (sports fields, environmental/discovery park, amphitheater, community/recreation center, swimming pool)
- Recreation-serving retail (restaurant, convenience mart, bait shop, boat/kayak rentals, sports equipment sales)
- Educational/institutional uses (Delta science and interpretive center, laboratories, riverine/environmental research facilities)
- Multifamily residential (ancillary use only: limited to short-term occupancy for visiting officials, scholars, students, and faculty)

Performance Standards and Design Characteristics:

Density/Intensity

- Nonresidential intensity: Floor Area Ratio (FAR) 20—50% on site; maximum 20% (average for district)

Design Characteristics

- Building character, scale, and massing complementary to waterfront and “historic/wharf” industrial

Goals, Policies and Actions:

At the heart of the General Plan are the *Rio Vista Principles*, an expression of the community’s fundamental values and the key components of its vision of its future. The following General Plan principle is relevant to the Project:

PRESERVE RIO VISTA’S SENSE OF COMMUNITY AND SMALL-TOWN CHARACTER

- *Farmland and nature are important elements of the community. A clear edge between urban development and agriculture should be maintained.*

Land Use Element:

The following policies of the General Plan Land Use Element are also relevant to the Project:

GOAL 4.1 TO CONTINUE A COMPREHENSIVE, LOGICAL LAND USE PLANNING PROCESS RATHER THAN AN INCREMENTAL, PIECEMEAL APPROACH.

Policy 4.1.A Growth shall provide a strong diversified economic base and a reasonable balance between employment and housing for all income ranges.

Policy 4.1.B Growth shall occur on the basis that projected revenue should be sufficient to meet public costs.

Policy 4.1.C Growth shall be managed to ensure that adequate public facilities and services, as defined in the Public Facilities & Services element, are planned and provided in a manner that protects the public’s health, safety, and welfare.

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 4.1.E The City shall ensure a comprehensive, logical growth process as areas develop, particularly where significant changes in land use are being considered.

GOAL 4.2 TO ENSURE THAT THE USE AND CHARACTER OF ALL LANDS WITHIN THE CITY'S PLANNING AREA ARE CONSISTENT WITH THE INTENT OF THIS GENERAL PLAN.

Policy 4.2.F Sub-Planning Area 6—Agricultural and Open Space Lands: The City shall strive to ensure that these lands remain in non-urban, predominantly agricultural and open space uses.

4.2.2 Rio Vista Zoning Ordinance

The City's Zoning Ordinance (Title 17 of the Municipal Code) implements the vision and policies of the General Plan by regulating the uses of land; the density of population; the bulk, locations, and uses of structures; the areas and dimensions of sites; the appearance of certain uses, structures, and signs; usable open space, screening and landscaping; parking and loading facilities; and the location, size and illumination of signs.

The zoning designation within the proposed Project Area is O-A-R Open Area Resort. The purpose of this district was originally to permit the development of the Delta Marina Yacht Harbor Resort but it has also been applied to other lands within the city. Permitted uses include parks, playgrounds and swimming pools, golf courses and country clubs. Conditionally permitted uses include museums, art galleries, libraries, and public buildings; public utility substation; hotels and motels; commercial uses accessory to permitted uses, such as refreshment stands, restaurants, sports equipment rental and sale, and marinas; public and semi-public buildings, including but not limited to, fire stations, schools, churches, libraries, hospitals, and community and civic centers; convalescent and other twenty-four (24) hour care facilities.¹

4.2.3 1998 Rio Vista Army Base Reuse Plan

The Rio Vista Army Base Reuse Plan ("Reuse Plan"), originally prepared in 1998 and supplemented in 2001, set forth a vision for the reuse of the proposed Project Area, consistent with the conditions of the transfer of the former base from the Army to the City. A primary purpose of the Reuse Plan was to establish a range of future uses of the site upon which the Army could determine and carry out an appropriate level of hazardous materials remediation sufficient to protect those uses. Although the Plan itself did not establish official City policy with respect to the land, the Plan did serve as the basis for the subsequently adopted General Plan designation and policies that pertain to the site.

The Reuse Plan proposed a public-private redevelopment in the proposed Project Area with citywide-serving recreation uses and visitor-serving uses oriented toward the river and the delta. The 1998 Reuse Plan market-feasible preferred concept plan included the following specific uses:

¹City of Rio Vista Municipal Code Chapter 17.36, O-A-R Open Air Resort District.

- a 21,000-square-foot multi-purpose community center with indoor hardwood courts, classrooms and meeting rooms;
- outdoor active recreation areas with three soccer fields or four ballfields, outdoor basketball courts and four tennis courts;
- a 2-acre Children's Delta Discovery Park with interactive activities and exhibits that teach children about the river and delta environment;
- a riverfront promenade incorporating the existing wharf and a small public marina/cove with a few temporary berths for visitors;
- a 50-room lodge/country inn retreat/conference center with meeting rooms for 100 persons, a small café/coffee shop and a small retail shop, organized along the waterfront and around the marina/cove;
- a 9,000-square-foot free-standing restaurant with some retail;
- a camping area and recreational vehicle park;
- a picnic area;
- 380 off-street parking spaces; and
- new street and water, sewer and storm drainage infrastructure.

The Reuse Plan determined that, based on the cost of rehabilitation and their limited suitability for future uses, none of the buildings on the site should be saved and renovated. When the plan was prepared in 1998, no user of a marine research facility was identified as having the need or resources for a facility in Rio Vista at that time. Additionally, dry boat storage was deemed incompatible with the envisioned recreation uses.¹

The 2001 Supplemental Economic Analysis reevaluated the financial feasibility of a marine research facility, and compared the research facility to the lodge-retail-restaurant use recommended by the 1998 Reuse Plan in terms of jobs, city revenue and economic multiplier effects. The 2001 supplemental analysis concluded that a research facility was a realistic project actively being planned by a consortium of State and federal agencies, was financially feasible, and would have significantly more economic benefits than a lodge, which was determined to be infeasible at the time.²

The following Reuse Plan goals are relevant to consideration of the Project:

Goal #1: Develop new, significant Citywide-serving recreation uses and amenities at the Army Base, consistent with the conveyance regulations for the Army Base.

¹City of Rio Vista, Rio Vista Army Base Reuse Plan, 1998.

²Brion & Associates, Rio Vista Army Reserve Center Reuse Plan Supplemental Economic Analysis, July 2001, pages 1-2.

Goal #2: Orient and integrate the reuse of the Army Base with the Sacramento River and Delta environment.

Goal #3: Encourage a public/private approach to redevelopment of the Army Base and implementation of the Reuse Plan.

Goal #4: Encourage redevelopment that allows for expansion of the City's economic base through the creation of new employment opportunities for local residents, new demand for local goods and services, and the attraction of new visitors to Rio Vista.

Goal #5: Ensure that the Army Base is conveyed to the City free of all environmental hazards, and that all toxics and other environmental problems have been remediated consistent with State and federal standards and the final Reuse Plan, and that the existing buildings, foundations, and the related asbestos are removed from the site.

Goal #6: Work with the Army to develop a remediation plan for the site that will be consistent with the Reuse Plan and take advantage of opportunities such as the creation of the public marina.

4.2.4 Solano County General Plan

Lands to the west and south of the proposed Project Area are located outside the city limits, within unincorporated Solano County territory, but within the City's Sphere of Influence. The County General Plan land use designation immediately to the west and south of the proposed Project Area is UPA Urban Project Area. This designation reflects city-designated master plan, specific plan, or other future plan areas, including the Rio Vista Army Base Reuse Area and the Rio Vista Study Area. The Solano County General Plan also identifies county parcels adjacent to the proposed Project Area as agricultural areas within a Municipal Service Area (MSA), i.e., an area within a city sphere of influence. Unincorporated lands within MSAs that are designated Agriculture are expected to continue in agricultural use until annexed to a city for urban development.¹

4.2.5 Solano County Right to Farm Ordinance

Chapter 2.2 of the Solano County Code, the Solano County Agricultural Lands and Operations Ordinance, protects farm operations from nuisance complaints associated with uses located next to active agricultural operations. These complaints often cause farm operators to cease or curtail operations. They may also deter others from investing in farm-related improvements that would support the county's agricultural economy. This "right-to-farm ordinance," as it is commonly known, guarantees the right to continue agricultural operations, including but not limited to applying approved chemicals in a proper manner. The ordinance limits the circumstances under which agriculture may be considered a nuisance, and requires notice of the ordinance to be given to purchasers of real property.

4.2.6 State of California

(a) California Community Redevelopment Law. The State of California has declared that blighted areas constitute physical, social and economic liabilities in communities where blight

¹Solano County General Plan Land Use Element LU-4 Municipal Service Areas and Figure LU-5 Interim Agricultural Areas within Unincorporated MSAs.

exists. In order to remove blight in communities, the Legislature established redevelopment agencies and granted them certain governmental functions and powers, most notably the ability to use tax increment financing.

Chapter 4.5 of the California Community Redevelopment Law (CRL) provides redevelopment agencies with special legislative authority to create redevelopment project areas on the site of former military facilities. Base closures have been found to have a significant impact on the economy and social quality of surrounding communities, warranting inclusion into a redevelopment project area. Redevelopment facilitates the reuse of closed military facilities and stimulates economic recovery by providing a mechanism for financing improvements that are needed to attract private investment.

The City Council adopted the City's first redevelopment project area in 1960, known as the Morgan Community Tract Redevelopment Project Area, which expired on January 1, 2009. The Rio Vista Redevelopment Agency was established in 1988. In 1988, the City also adopted a second redevelopment project area, known as the Rio Vista Redevelopment Project Area "A", which remains active through 2028. Project Area "A" encompasses much of central Rio Vista. If adopted, the Rio Vista Army Reserve Center Project Area would be the third redevelopment project area established in the City.

(b) California State Lands Commission. The State owns sovereign fee title to tide and submerged lands landward to the mean high water line as they existed in nature prior to fill or artificial accretions. On navigable non-tidal waterways, the State holds fee ownership of the bed landward to the ordinary low water mark and a Public Trust easement landward to the ordinary high water mark, as they last naturally existed. The State's sovereign interests are under the jurisdiction of the California State Lands Commission. State-owned sovereign lands are subject to the statewide Public Trust purposes of waterborne commerce, navigation, fisheries, water-related recreation, habitat preservation and open space.

The portion of the Sacramento River immediately adjacent to the proposed Project Area is not sovereign lands of the State of California under the jurisdiction of the California State Lands Commission. Prior to the widening of the river and the construction of the shipping lane by the Army Corps of Engineers', this portion of the river was part of the land mass associated with the former Army base. According to the California State Lands Commission, the timing of the removal of this land area and the acquisition of State Lands Commission right-of-way in river waterway areas was such that the Army base waterfront (which was previously land mass) is not in State Lands Commission jurisdiction.

(c) Delta Protection Commission Land Use and Resource Management Plan. The 1992 Delta Protection Act recognized the Sacramento-San Joaquin Delta to be of international significance and mandated designation of primary and secondary zones within the "legal Delta" as defined in Water Code Section 12220, creation of a Delta Protection Commission, and completion of a Land Use and Resource Management Plan for the Primary Zone (Management Plan). The mission of the Delta Protection Commission is to protect and restore the overall quality of the Delta environment, including agriculture, wildlife habitat, and recreational activities, and to ensure orderly, balanced conservation and development, and improved flood protection.

The proposed Project Area is not within the legal Delta. The Delta Protection Commission has indicated that the boundary of the legal Delta and the Primary Zone, run along the shore of the Sacramento River adjacent to the proposed Project Area. The existing wharves, moorings and boat ramp are located within the Primary Zone and future activities and appurtenances occurring or located within the river would be within the Primary Zone.

A Management Plan for the Primary Zone was prepared and adopted by the Commission in 1995 and revised in 2002 and 2010. The Management Plan sets out findings, policies, and recommendations in the areas of environment, utilities and infrastructure, land use, agriculture, water, recreation and access, levees, and marine patrol/boater education/safety programs. Local government general plans are to provide for consistency with the provisions of the Management Plan. The following policies of the 2010 Management Plan are potentially relevant to the Project.

Natural Resources Element

Goal. Preserve and protect the natural resources of the Delta. Promote protection of remnants of riparian and aquatic habitat. Encourage compatibility between agricultural practices and wildlife habitat.

Policy P-1. Preserve and protect the natural resources of the Delta. Promote protection of remnants of riparian and aquatic habitat. Encourage compatibility between agricultural practices, recreational uses and wildlife habitat.

Policy P-7. Incorporate, to the maximum extent feasible, suitable and appropriate wildlife protection, restoration and enhancement on publicly-owned land as part of a Delta-wide plan for habitat management.

Policy P-8. Promote ecological, recreational and agricultural tourism in order to preserve the cultural values and economic vitality that reflect the history, natural heritage and human resources of the Delta including the establishment of National Heritage Area designations.

Recreation & Access Element

Goal. To promote continued recreational use of the land and waters of the Delta; to ensure that needed facilities that support such uses are constructed, maintained, and supervised; to protect landowners from unauthorized recreational uses on private lands; and to maximize public funds for recreation by promoting public-private partnerships and multiple use of Delta lands.

Policy P-2. Encourage expansion of existing privately-owned, water-oriented recreation and access facilities that are consistent with local General Plans, zoning regulations and standards.

Policy P-3. Assess the need for new regional public and private recreation and access facilities to meet increasing public need, and ensure that any new facilities are prioritized, developed, maintained and supervised consistent with local, state, and federal laws and regulations. Ensure that adequate public services are provided for all existing, new, and improved recreation and access facilities.

Policy P-4. Encourage new regional recreational opportunities, such as Delta-wide trails, which take into consideration environmental, agricultural, infrastructure, and law enforcement needs, and private property boundaries. Also, encourage opportunities for water, hiking, and biking trails.

Policy P-7. Support improved access for bank fishing along State highways, county roads, and other appropriate areas where safe and adequate parking, law enforcement, waste management and sanitation facilities, and emergency response can be provided and where proper rights-of-access have been acquired.

Policy P-8. Ensure, for the sake of the environment and water quality, the provision of appropriate restroom, pump-out and other sanitation and waste management facilities at new and existing recreation sites, including marinas; encourage the provision of amenities including but not limited to picnic tables and boat-in destinations.

Policy P-10. Promote and encourage Delta-wide communication, coordination, and collaboration on boating and waterway-related programs including but not limited to marine patrols, removal of debris and abandoned vessels, invasive species control and containment, clean and safe boating education and enforcement, maintenance of existing anchorage, mooring and berthing areas, and emergency response in the Delta.

Water Element

Goal. Protect and enhance long-term water quality in the Delta for agriculture, municipal, industrial, water-contact recreation, and fish and wildlife habitat uses, as well as all other beneficial uses.

Policy P-1. State, federal and local agencies shall be strongly encouraged to preserve and protect the water quality of the Delta both for in-stream purposes and for human use and consumption.

Utilities & Infrastructure Element

Goal. Ensure that the construction of new utility and infrastructure facilities is appropriate and the impacts of such new construction on the integrity of levees, wildlife, recreation, agriculture and Delta communities are avoided, minimized and mitigated.

Policy P-3. Ensure that new municipal sewage treatment facilities (including storage ponds) that support development or business outside of the Delta Primary Zone are not located within the Delta Primary Zone. The Rio Vista project, as described in the adopted Final Environmental Impact Report for such project, and the Ironhouse Sanitary District use of Jersey Island for disposal of treated wastewater and biosolids are exempt from this policy.

Policy P-7. Encourage the provision of infrastructure for new water, recreational, and scientific research facilities.

4.3 IMPACTS AND MITIGATION MEASURES

4.3.1 Significance Criteria

Based on the CEQA Guidelines,¹ the Project would be considered to have a significant impact related to land use and planning if it would:

- (a) Disrupt or divide the physical arrangement of a community;
- (b) Be incompatible with existing land use in the vicinity;
- (c) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect;
- (d) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use; or
- (e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use.

4.3.2 Impacts and Mitigation Measures

This section discusses potential land use impacts of the Project with respect to community cohesion, land use compatibility, conformity with plans and policies and agricultural resources, as well as the Project's contribution to cumulative land use impacts.

Divide the Physical Arrangement of a Community. The proposed Project Area was formerly a fenced, gated and guarded military installation, at the southern edge of the city, outside the city and separated from the community by the inlet to Marina Creek. It was a self-contained, specialized use set apart from the community.

The proposed Project Area has been transferred to the City and annexed into the city. However, because of its isolated location; existing blighting conditions; lack of proper road, water, sewer, and storm drainage infrastructure; remaining hazardous materials contamination; and remaining buildings, structures and pavement requiring costly demolition or rehabilitation; the site has remained stagnant, improperly utilized and isolated from the community.

The proposed Redevelopment Plan is considered by the City and Agency to be the next important step in enabling and speeding up the community's recovery from the base closure and integrating this key waterfront parcel into the fabric of the community. Redevelopment, including tax increment funds, are proposed in part to provide city-wide serving recreational amenities; a community park that serves adjacent neighborhoods and the entire community; a community center gathering place; and Primary Trail System multi-use trail connections envisioned in the General Plan and the Parks Master Plan. The proposed redevelopment actions would serve to reconnect the city with its waterfront and implement General Plan and Parks Master Plan objectives to interpret and celebrate the city's river and Delta heritage. Redevelopment would also be expected to help integrate this opportunity site into the local

¹CEQA Guidelines, Appendix G, Items II(a), II(c), IX(a), and IX(b).

economy, generating high quality jobs for city residents and increased demand for local goods and services. Redevelopment activities and redevelopment-facilitated development would be expected to enhance the city's identity, visibility and regional importance. The infrastructure improvements and development enabled by the proposed Redevelopment Plan would also help integrate Sandy Beach County Park and other properties and uses along Beach Drive.

The Project would therefore not divide the physical arrangement of the community but would instead have a **beneficial impact** related to community cohesion.

Mitigation. No significant adverse environmental impact has been identified; no mitigation is required.

On-Site Land Use Compatibility. All future uses within the proposed Project Area would be recreation and recreation-supporting uses, consistent with the condition of conveyance from the Army to the City, and in that way and to that extent, would be compatible. Visual and physical access to the river would be important to each of the anticipated uses. The research station, lodge and parks/community center uses facilitated by the Redevelopment Plan would each be oriented toward, make use of and rely on the unique riverfront location. There are also potentially important synergies among the assumed future uses. Opportunities for joint uses among the research station, lodge and parks/community center include meeting space, parking, boat launch facilities, dry boat storage, museum and educational/interpretive facilities.

A PG&E natural gas pipeline easement traverses the northern portion of the site east-west. This area would be limited to parking, open storage, open recreation and similar uses without occupied structures. The assumed uses would be compatible with this existing site constraint.

Depending on the precise layout and design of future development within the proposed Project Area, there may be limited, localized compatibility issues associated with noise, lighting, odors or appearance. Existing General Plan policies and actions, zoning regulations, including required development review and design criteria, would serve to reduce or avoid potential incompatibilities. The City's participation and control as Redevelopment Agency, property owner, and recreation user would provide additional opportunity for better outcomes.

The Project would therefore have a **less-than-significant impact** related to on-site land use compatibility.

Mitigation. No significant adverse environmental impact has been identified; no mitigation is required.

Compatibility With Adjacent Agriculture. The adjacent property to the west of the proposed Project Area is in agricultural use. The use of agricultural chemicals on the adjacent agricultural land to the west could potentially be injurious to users of the proposed park and recreation facilities and other future occupants of the proposed Project Area. However, State laws and regulations regarding setbacks and the Solano County Department of Agriculture permitting process and on-site inspections would ensure the use of only approved chemicals in the specified manner and that sensitive receptors would be avoided. The adjacent agricultural use may be limited in its ground application of agricultural chemicals within an approximately 50- to 100-foot wide portion of its property. Dust created by tilling fields or smoke created by burning agricultural waste, if any, may be incompatible with active recreation uses on a very infrequent

short-term basis and could lead to occasional complaints. However, the limitations on chemical applications and potential complaints from recreation users would not so curtail operations on the adjacent farm as to impair its continued viability. The potential impact of the Project related to compatibility with adjacent agriculture would therefore be ***less than significant***.

Mitigation. No significant adverse environmental impact has been identified; no mitigation is required.

Compatibility With Other Surrounding Uses. No compatibility issues are known to have been raised by adjacent uses during the scoping process for this EIR or during the various actions taken by the Army and the City with respect to the transfer of the former base and planning for future uses.

The adjacent Delta Marina Yacht Harbor Resort to the north is a similar and compatible recreation and boating facility. The property is lower than the northern portion of the site, and is partially screened by vegetation. Additionally, the provisions of the existing PG&E natural gas pipeline easement that traverses the northern portion of the site limit development in that area to compatible parking, open storage, open recreation and similar uses. The Delta Marina could also potentially provide berths, storage and fueling for recreation and research station boats.

The recreation facilities would generate noise and lighting which could be incompatible with the existing residential uses near the northwest corner of the proposed Project Area and the residential use at 2333 Beach Drive near the southwest corner of the site. The proposed sports fields would be located on the western portion of the site and, in accordance with the City's Parks Master Plan, would be expected to include organized league play and lighted nighttime play. Noise impacts from potential recreation facilities are addressed in chapter 12, Noise. Light and glare impacts from potential sports field nighttime lighting are addressed in Chapter 7, Aesthetics.

The adjacent U.S. Coast Guard Station to the south is separated by a fence from the proposed Project Area. The U.S. Coast Guard Station could potentially make use of the proposed recreation, meeting, lodge, restaurant and research facilities. The multi-use trail connection to the city to the north would provide an alternate means of access to Sandy Beach County Park, the U.S. Coast Guard Station and other uses on Beach Drive.

The Project would therefore have ***no impact*** related to compatibility with surrounding uses.

Conformity With Plans and Policies. The proposed Redevelopment Plan would facilitate a total of up to 244,500 square feet of development within the proposed Project Area, which is consistent with the 0.2 FAR development intensity allowed under the General Plan. The Project would facilitate the development of the full range of recreation and recreation-supporting uses suggested by the General Plan and the Reuse Plan. Development resulting from the Redevelopment Plan would further General Plan principles, goals and policies for a vibrant and diversified economy and jobs/housing balance. The proposed Redevelopment Plan would facilitate development of financially feasible and fiscally positive uses¹ that are related to the unique riverfront setting and do not duplicate other uses already existing in the community.

¹Brion & Associates, Rio Vista Army Reserve Center Reuse Plan Supplemental Economic Analysis, July 2001.

Redevelopment activities would provide needed public services and utilities concurrent with development.

Project activities would allow continued agricultural use of adjacent county lands.

Development facilitated by the proposed Redevelopment Plan would be consistent with the uses allowed by the O-A-R Open Air Resort zoning designation.

The Redevelopment Plan would help realize the Reuse Plan's vision and goals of city-wide recreational amenities, reuse of the site oriented to and integrated with the river, clean-up of remaining environmental hazards, a public-private redevelopment approach, and employment and economic opportunities for local residents and businesses.

Activities associated with future Redevelopment Plan-facilitated uses that may occur in the river adjacent to the proposed Project Area would be consistent with the public trust purpose of State-owned sovereign lands within the jurisdiction of the California State Lands Commission and the public navigation easement of State waters. The Project would also be consistent with the mission of the Delta Protection Commission and the policies and recommendations of the Land and Resource Management Plan for the Primary Zone of the Delta.

The Project would have a **no impact** related to conformity with plans and policies.

Mitigation. No significant adverse environmental impact has been identified; no mitigation is required.

Farmland Conversion Impacts. There is no Prime Farmland, Unique Farmland or Farmland of Statewide Importance and no lands under Williamson Act contracts within or adjacent to the proposed Project Area. The proposed Project Area, the U.S. Coast Guard Station, the wastewater treatment plant, and Sandy Beach County Park are state-designated Urban and Built Up land, reflecting their developed characteristics. The adjoining agricultural land immediately to the west of the proposed Project Area is designated Other Land.¹ As explained in Section 4.4.2 above, potential land use incompatibility with the adjacent agricultural land to the west would not impair operations to such a degree as to affect the property's continued viability for agricultural use and production. As explained in Section 17.1, Growth-Inducing Impacts, these lands are planned to continue in agricultural use through the 2025 time frame of the General Plan, in accordance with the Solano County General Plan land use designation and Land Use Element Policy 4.2.F of the Rio Vista General Plan. Either directly or indirectly, the impact of the Project related to farmland conversion would be **less than significant**.

Mitigation. No significant adverse environmental impact has been identified; no mitigation is required.

¹California Department of Conservation, Division of Land Resource Protection, Solano County Important Farmland 2008, July 2009.

5. POPULATION, HOUSING, AND EMPLOYMENT

This section describes the existing conditions and regulatory setting related to population, housing and employment within the proposed Project Area and Rio Vista, and the potential impacts of the proposed Redevelopment Plan.

5.1 SETTING

The proposed Project Area is currently vacant. There is no existing population, housing or employment within the proposed Project Area. The former barracks and commander's quarters which remain on the site were accessory to the former military use and are not housing units.

This section describes population, housing and employment characteristics and trends in the city and county, based primarily on forecasts developed by the Association of Bay Area Governments (ABAG).¹ ABAG periodically produces growth forecasts for public information and for use by other regional agencies, including the Metropolitan Transportation Commission (MTC) and the Bay Area Air Quality Management District (BAAQMD), in making project funding and regulatory decisions. For example, the ABAG projections provide the basis for the MTC Regional Transportation Plan and the BAAQMD regional Ozone Attainment Plan. In this way, the ABAG projections have practical consequences that shape growth and environmental quality.

The general plans and development regulations of local jurisdictions are a key basis for the ABAG projections. The forecasts also reflect larger realities like climate change, high energy costs and the aging population which many local governments may have yet to incorporate into their planning documents but which, over the long-term, are expected to influence development outcomes. The ABAG projections also reflect the anticipated impact of "smart growth" policies and incentives in shifting development patterns from historical trends toward better jobs-housing balance, cleaner air, lower greenhouse gas (GHG) emissions, increased preservation of open space, and lower housing and travel costs.

Table 5.1 presents ABAG projections of population, housing and employment in the city and county for the period 2000 to 2030.

5.1.1 Population

Solano County has been steadily urbanizing over several decades. As shown in Table 5.1, the county is projected to be home to nearly a half million people by 2030, a 12 percent increase over the county's current 2010 population of 443,100.

¹Unless otherwise indicated, all data in this section is from Association of Bay Area Governments, Building Momentum, Projections and Priorities 2009, San Francisco Bay Area Population, Household and Job Forecasts, 2009.

Table 5.1
 POPULATION, HOUSING AND EMPLOYMENT FORECASTS--RIO VISTA AND SOLANO
 COUNTY

	<u>2000³</u>	<u>2010</u>	<u>Percent Change 2000-2010</u>	<u>2020</u>	<u>Percent Change 2010-2020</u>	<u>2030</u>	<u>Percent Change 2020-2030</u>
Rio Vista¹							
Population	4,715	9,200	95.1	11,900	29.3	14,600	22.7
Households ²	1,940	3,800	95.9	4,900	28.9	5,960	21.6
Jobs	2,290	2,930	27.9	3,750	28.0	5,260	40.3
Employed Residents	2,051	4,460	117.5	7,300	63.7	9,700	32.9
Jobs Per Employed Resident	1.12	0.66	-41.2	0.51	-21.8	0.54	5.6
Solano County							
Population	394,542	443,100	12.3	472,100	6.5	495,800	5.0
Households	130,403	148,160	13.6	157,280	6.2	166,490	5.9
Jobs	136,740	140,120	2.5	167,060	19.2	196,730	17.8
Employed Residents	182,964	205,700	12.4	229,200	11.4	250,200	9.2
Jobs Per Employed Resident	0.75	0.68	-8.9	0.73	7.0	0.79	7.9

SOURCE: Association of Bay Area Governments, Building Momentum, Projections and Priorities 2009, San Francisco Bay Area Population, Household and Job Forecasts, 2009.

¹ Rio Vista data is for the city's sphere of influence.

² ABAG forecasts households (i.e., occupied housing units). Households does not include vacant housing units (estimated by the California Department of Finance in its Table E-5 at 4.29 percent of total housing units in Rio Vista on January 1, 2009) and persons residing in group quarters such as nursing homes or rooming houses.

³ 2000 data is from the U.S. Census as reported by ABAG.

The smallest of Solano County's seven cities, Rio Vista has an estimated 2010 population of 9,200. After a period of moderate growth between 1980 and 2000, Rio Vista has doubled its population since 2000. It was the State's second fastest growing city in 2001, fifth fastest in 2002 (12.9 percent), tenth fastest in 2003 (8.5 percent), and seventh fastest in 2004 (10.8 percent).¹ Rio Vista is expected to experience the greatest relative population change of all of the county's cities in the next 20 years, with a projected growth in population of 60 percent. The city is projected to be home to 14,600 people by 2030.

5.1.2 Housing

As shown in Table 5.1, Rio Vista had 3,800 households in 2010². The majority of existing and projected new housing units are single family homes. The city's large senior housing communities have contributed to a lower average household size than the county as a whole.

¹City of Rio Vista, Del Rio Hills Planned Unit Development Draft Environmental Impact Report, December 2008, page 4.10-2.

²ABAG forecasts households (i.e., occupied housing units). Households do not include vacant housing units (estimated by the California Department of Finance in its Table E-5 at 4.29 percent of total housing units in Rio Vista on January 1, 2009) and persons residing in group quarters such as nursing homes or rooming houses.

5.1.3 Employment

Because of its extensive transportation access, Solano County has been competitive for distribution and manufacturing businesses and, more recently, retail businesses, particularly along the I-80 corridor. In addition, Travis Air Force Base is a key military supply and medical center. Like the Rio Vista Army Reserve Center, the closure of the Mare Island Naval Shipyard in Vallejo reduced local employment, but also as in Rio Vista, Vallejo anticipates positive impacts from redevelopment of the former shipyard.

Rio Vista has an estimated 2,930 jobs in 2010. As shown in Table 5.1, job growth in the city since 2000 (28 percent) has not kept pace with population growth (95 percent). This trend is projected to change in the coming decades, with the rate of job growth drawing even with population growth by 2020. From 2020 to 2030, jobs will grow nearly twice as fast as population.

5.1.4 Jobs/Housing Balance

Regional planning goals and the City's General Plan seek to improve the local balance between housing and jobs. To the degree that a balance can be achieved between local jobs and housing, there is greater opportunity for local residents to work close to where they live. A better jobs/housing balance can reduce commuting, traffic congestion, air quality and global warming impacts, and the need for costly transportation infrastructure, personal transportation costs, and lost leisure and family time.

While "jobs/housing balance" is the term commonly used, the "jobs/employed resident balance" is the more precise measure of the local ratio of housing to jobs, since housing units (or households), on average, contain more than one employed resident. Where a city's jobs/employed resident ratio is higher than the regional ratio, a higher tendency toward in-commuting is indicated; where the ratio is lower than the regional ratio, a higher tendency toward out-commuting is indicated.¹

As shown in the Table 5.1, Rio Vista has one-third fewer jobs than employed residents in 2010, with a jobs/employed resident ratio of 0.66. This is a reversal since 2000 when the city had more jobs than employed residents. Solano County as a whole showed a similar trend toward out-commuting during the past decade, though not as large as occurred locally. Despite the City's General Plan goal for a jobs/employed residents balance and land use designations that would achieve that balance, market realities are forecast to continue the trend towards more housing than employment-generating development in Rio Vista. Rio Vista's jobs/employed resident balance is projected to continue to decrease, reaching 0.54 by 2030.

¹It is important to note that a simple numerical balance in the jobs/employed resident ratio does not necessarily indicate that local residents have adequate opportunity to work in their community. Other factors, such as the match between local resident employee skills and the skills required for local jobs, and the match between local job compensation levels and local housing prices, also influence a community's actual jobs/housing relationship.

5.2 PERTINENT PLANS AND POLICIES

Rio Vista General Plan policies relevant to consideration of the potential population, housing and employment impacts of the Project are listed below:¹

CREATE AND MAINTAIN ECONOMIC VITALITY; PROVIDE NEW OPPORTUNITIES TO LIVE, WORK, AND SHOP IN RIO VISTA.

- *The Rio Vista community should be planned for a balance of jobs and housing. Rio Vista should not become another bedroom suburb like so many neighboring communities.*
- *Commercial development should occur in locations and configurations that complement existing business. New retail projects should:*
 - *Provide goods and services not currently available or for which an unmet demand clearly exists, and*
 - *Be sized in proportion to market demand.*

The General Plan Housing Element contains the following relevant goal, policy and action statements.

GOAL 6.3 TO ENCOURAGE THE PRODUCTION OF HOUSING AFFORDABLE TO LOW- AND MODERATE-INCOME HOUSEHOLDS.

Policy 6.3.F The City shall ensure that adequate sites are available for affordable housing development in the Redevelopment Project Area and on appropriate infill sites.

Action H-12 REDEVELOPMENT AGENCY (Existing) The City's Redevelopment Agency will continue to implement its Redevelopment Plan to rehabilitate and revitalize the commercial and residential structures in Rio Vista's older areas, such as downtown and the historic residential neighborhoods between Highway 12 and Bruning Avenue. The City will use all potential sources of public and private housing funding for repairs and upgrades. Twenty percent of the tax increment generated by the Redevelopment Agency's program will go into the Redevelopment Low- and Moderate-Income Housing Fund. The fund will be utilized to assist the production of 15% of all units produced in the boundaries of the Agency as affordable to lower income households. This ratio (at least 15% affordable to lower income households and 6% affordable to very low income households) will be provided in each major development site, particularly the Riverwalk project and other large infill sites subject to Agency authority. Quantified Objective: 20 Very Low, 50 Low Income Units

In addition, General Plan Economic Development Element Figure 7-2, Existing and Planned Commercial and Employment Sites, identifies the proposed Project Area as a planned commercial and employment center. The Economic Development Element describes the recreational and community amenities envisioned for the site, which would attract visitor's and businesses to the city, as well as the anticipated Delta research field station on approximately 20 percent of the site, providing up to 200 jobs, with possible joint use facilities, such as a combined community center/Delta interpretive center/conference facility and joint recreational/research boat launch facilities.

¹City of Rio Vista, Rio Vista General Plan 2001.

The Economic Development Element also contains the following relevant goals and policies:

GOAL 7.1: TO PROMOTE AN EXPANDING AND INCREASINGLY DIVERSIFIED LOCAL ECONOMY THAT WILL MEET THE EMPLOYMENT NEEDS OF LOCAL RESIDENTS AND STRENGTHEN THE LOCAL TAX BASE.

Policy 7.1.A The City shall make every effort to attract new job-producing businesses that will maximize economic benefits to existing residents and businesses, and attract other businesses to Rio Vista.

Policy 7.1.B The City shall concentrate its business assistance efforts on the most productive, cost-effective, and compatible industrial sectors:

- *Those most likely to be attracted to a community with Rio Vista's attributes;*
- *Sectors that will produce the most basic manufacturing jobs and related service needs; and*
- *Sectors that are environmentally and otherwise compatible with the community.*

Policy 7.1.C The City shall investigate and use all feasible means of providing economic and other incentives to new businesses and business retention/expansions.

GOAL 7.2: TO ACHIEVE A JOBS/HOUSING BALANCE WITHIN THE CITY.

Policy 7.2.A The City shall strive to achieve a long-term jobs/housing balance of at least 1.0 and work toward a goal of one job for every employed Rio Vista resident. The City will attempt to maintain these ratios at or above their current levels.

5.3 IMPACTS AND MITIGATION MEASURES

This section describes potential project impacts, including beneficial impacts, on population, housing and employment within the proposed Project Area and greater Rio Vista. This section also evaluates the consistency of the project with General Plan policies related to population, housing, employment and, notably, jobs/housing balance.

The Army Base Special District General Plan designation for the site does not allow housing. There would be no housing and no resident population within the proposed Project Area.

Changes in population and housing, in and of themselves, are generally characterized for CEQA purposes as social and economic effects, not physical effects on the environment. CEQA provides that economic or social effects are not considered significant effects on the environment unless the economic or social effects are connected to physical environmental effects.

Economic or social effects of a project shall not be treated as significant effects on the environment. An EIR may trace a chain of cause and effect from a proposed decision on a project through anticipated economic or social changes resulting from the project to physical changes caused in turn by the economic or social changes. The intermediate economic or social changes need not be analyzed in any detail greater than necessary to trace the chain of cause and effect. The focus of the analysis shall be on physical changes.

Economic or social effects of a project may be used to determine the significance of physical changes caused by the project. (CEQA Guidelines Section 15131(a) and (b)).

5.3.1 Significance Criteria

Based on Appendix G of the CEQA Guidelines,¹ the Project would be considered to have a significant adverse impact related to population and housing if it would:

- (a) induce substantial population growth either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure); or
- (b) displace substantial numbers of people or existing housing, necessitating the construction of replacement housing elsewhere.

5.3.2 Growth Inducement

Growth Inducement. For “worst case” CEQA environmental impact assessment purposes, it is assumed in this EIR that the proposed Redevelopment Plan would be fully successful in facilitating the redevelopment of the proposed Project Area and the development of additional new housing outside the proposed Project Area, and in indirectly stimulating economic activity throughout the city. As shown in Table 4.2 in Chapter 4, Land Use, of this EIR, the Project would be expected to facilitate the development of up to approximately 244,500 square feet of non-residential uses within the proposed Project Area (a 0.2 FAR), including:

- a 110,000-square-foot research station,
- a 150-room lodge with meeting and retail space (104,000 square feet),
- a 9,000-square-foot restaurant,
- a 21,000-square-foot multi-purpose community center, and
- 12.3 acres of recreation space.

This development would be in accordance with the land use designations and policies of the Rio Vista General Plan 2001, as well as the zoning designations and standards that implement the General Plan. The General Plan limits the development intensity on any individual parcel within the proposed Project Area to a 0.5 FAR, and to a 0.2 FAR within the overall proposed Project Area. Because development facilitated by the Project would be within the range of development allowed under the General Plan, it would not represent significant unexpected growth for which adequate planning has not occurred and, thus, with respect to growth inducement, would be considered a ***less-than-significant impact***.

Mitigation: No significant impact has been identified; no mitigation is required.

Growth Inducement is addressed more fully in Chapter 17, CEQA-Required Assessment Considerations.

¹CEQA Guidelines, Appendix G, Items XII a-c.

5.3.3 Population and Housing

Displacement of People or Housing. There are no housing units within the proposed Project Area. The Project would have ***no impact*** in terms of the displacement of people or housing.

Mitigation: No significant impact has been identified; no mitigation is required.

Affordable Housing. The Redevelopment Agency is required by law to set aside at least 20 percent of its gross tax increment revenues into a fund to increase, improve, and preserve the community's supply of affordable housing. The Redevelopment Agency anticipates spending approximately \$4.2 million on affordable housing projects over the duration of the Plan. Such funds would be used outside the proposed Project Area. These activities may result in new housing units. These housing fund expenditures will assist the City and Agency in implementing the goals and programs set forth in the Agency's affordable housing compliance plan and five-year implementation plan, as well as the General Plan Housing Element. The increase, improvement and preservation of affordable housing under the proposed Redevelopment Plan would be a ***beneficial impact***.

The location, nature, extent and severity of potential environmental impacts caused by the potential development of new affordable housing with tax increment revenue generated by the Project accruing to the Housing Set-Aside Fund is too speculative to predict or evaluate in this EIR. This growth would generally be already contemplated in and consistent with existing adopted plans and the environmental documents prepared for those plans, and would be addressed by existing policies and codes, public services and utilities master plans and funding programs. Individual discretionary development projects would be subject to their own environmental review to evaluate their specific characteristics and changes in the environmental setting over time.

Mitigation. No significant impact has been identified; no mitigation is required.

5.3.4 Employment

Temporary and Permanent Employment. Community facilities, site preparation and infrastructure improvements undertaken under the proposed Redevelopment Plan, and development facilitated by the plan within the proposed Project Area, would directly and indirectly result in new temporary construction jobs and permanent employment opportunities within the proposed Project Area. The Project would generate an estimated total of 230 permanent direct new jobs within the proposed Project Area by 2030. The economic multiplier effect would generate an additional 262 indirect jobs throughout Solano County, a portion of which would be created in Rio Vista.¹ Additional temporary and permanent employment could be generated outside the proposed Project Area due to the affordable housing programs funded under the proposed Redevelopment Plan. Employment generated by the development and economic activity facilitated by the proposed Redevelopment Plan would be a ***beneficial impact***.

¹Brion & Associates, Rio Vista Army Reserve Center Reuse Plan Supplemental Economic Analysis, July 2001. The jobs, city revenue and economic multiplier effects of a proposed research station, lodge and restaurant within the proposed Project Area estimated in 2001 Base Reuse Plan Supplemental Economic Analysis are discussed more fully in chapter 17, CEQA-Required Assessment Considerations.

Mitigation. No significant impact has been identified; no mitigation is required.

Jobs/Housing Balance. Rio Vista is projected to continue to have fewer jobs than employed residents through 2030, with a projected jobs/employed residents ratio by 2030 of 0.54. As shown in Table 5.2, development facilitated by the Project would result in an estimated 230 jobs and no housing within the proposed Project Area by 2030. By resulting in the creation of more jobs than housing, the Project would cause a slight improvement in the city's jobs/employed residents ratio, from a projected 0.54 without the Project to a projected 0.57 with the Project. This slight improvement in the city's jobs/housing balance as a result of the Project would be a ***beneficial impact***.

Mitigation. No significant impact has been identified; no mitigation is required.

6. CULTURAL AND HISTORIC RESOURCES

This chapter describes the existing conditions and regulatory setting related to cultural resources in and around the proposed Project Area, and the potential cultural resources impacts of the proposed Redevelopment Plan. Under CEQA, cultural resources may include historic-period buildings or structures, prehistoric or historic-period archaeological resources, or paleontological resources.

6.1 SETTING

6.1.1 Ethnographic Setting

The Rio Vista area is considered to have been used by more than one Native American group. The primary groups known to have used the area are the Patwin and two tribelets of the Eastern Miwok, the Bay Miwok and the Plains Miwok.¹

The tribelet center for the Anizumne, a moderate sized tribelet who spoke the Miwok language, may have been on a knoll one-half mile north of the present town beside a small marsh on the west bank of the Sacramento River. There are remnants of an archaeological site there, its cultural deposits eroding from wave action. Its people were missionized between 1812 and 1825, with most members removed to Mission San Jose.²

The largest political unit among Miwok-speaking people was the tribelet, comprised of several more or less permanent settlements and/or a larger number of seasonal campsites that combined to make an independent, land-holding group within a well-defined territory. Each tribelet included a number of lineages, an extended kinship group going back five or six generations tied to specific settlements. Miwok people living along the waterways of the west Delta were fishermen, hunters and gatherers. Some villages may have specialized in fishing, while others relied on seasonal rounds of hunting, fishing and seed gathering. Miwok-speaking people lived in dome-shaped houses covered with tule mats or tule thatch. Other structures in a typical village included semi-subterranean lodges, a sweathouse, a menstrual hut, acorn granaries and shelters over bedrock mortars where acorns were pulverized for meal.³

¹U.S. Army Corps of Engineers Sacramento District, Environmental Assessment for the Disposal and Reuse of the Rio Vista Army Reserve Center, October 2000, page 4-30.

²City of Rio Vista, Del Rio Hills Planned Unit Development Draft Environmental Impact Report, December 2008, page 4.4-3.

³City of Rio Vista, Del Rio Hills Planned Unit Development Draft Environmental Impact Report, December 2008, page 4.4-3.

6.1.2 Historic Setting

(a) History of Rio Vista. The earliest recorded Euro-American settlement of the Rio Vista Township was in the mid-1800s. Captain John Bidwell was the first European to settle in the area, establishing a residence in the Rio Vista Township in 1844. The town of Rio Vista was established in 1857 by Colonel N. H. Davis. In 1858, Colonel Davis established a wharf, making Rio Vista the only landing between Sacramento and Benicia. Rio Vista soon became a major waterlink and shipping headquarters for salmon caught in the area.¹

Until the Gold Rush, the Delta was a network of waterways and natural islands of sand and peat. When Rio Vista was established in its current location in 1862, levees were under construction throughout the region. These levees opened up the vast, rich agricultural lands around Rio Vista and enabled the small river landing settlement to grow and prosper. Levee construction in combination with hydraulic gold mining eliminated most of the Delta marshlands before 1900.

Rio Vista lies on the eastern edge of the wheat farming country of the Montezuma Hills. The Rio Vista area remained predominantly agricultural for many years. By the mid-1930s, the Rio Vista area was also recognized as the largest natural gas field in northern California.²

Following World War II, the west Delta became a popular destination for weekend fishermen from the Bay Area.

(b) History of Proposed Project Area.³ The delta area surrounding Rio Vista has in the historic past been subject to frequent flooding from the Sacramento River. The U.S. Army Corps of Engineers started making limited flood control improvements in this delta area as early as 1875. Plans for systematic flood control in the Sacramento Valley began to take shape in the 1890s. In 1911, in response to the need for mooring and shore facilities for dredging craft, the Corps of Engineers acquired an approximately 60-acre tract along the west bank of the Sacramento River just south of the town of Rio Vista, near the site of planned dredging operations. The site was originally part of John Bidwell's Los Ulpinos land grant and later acquired by Marie Joseph.

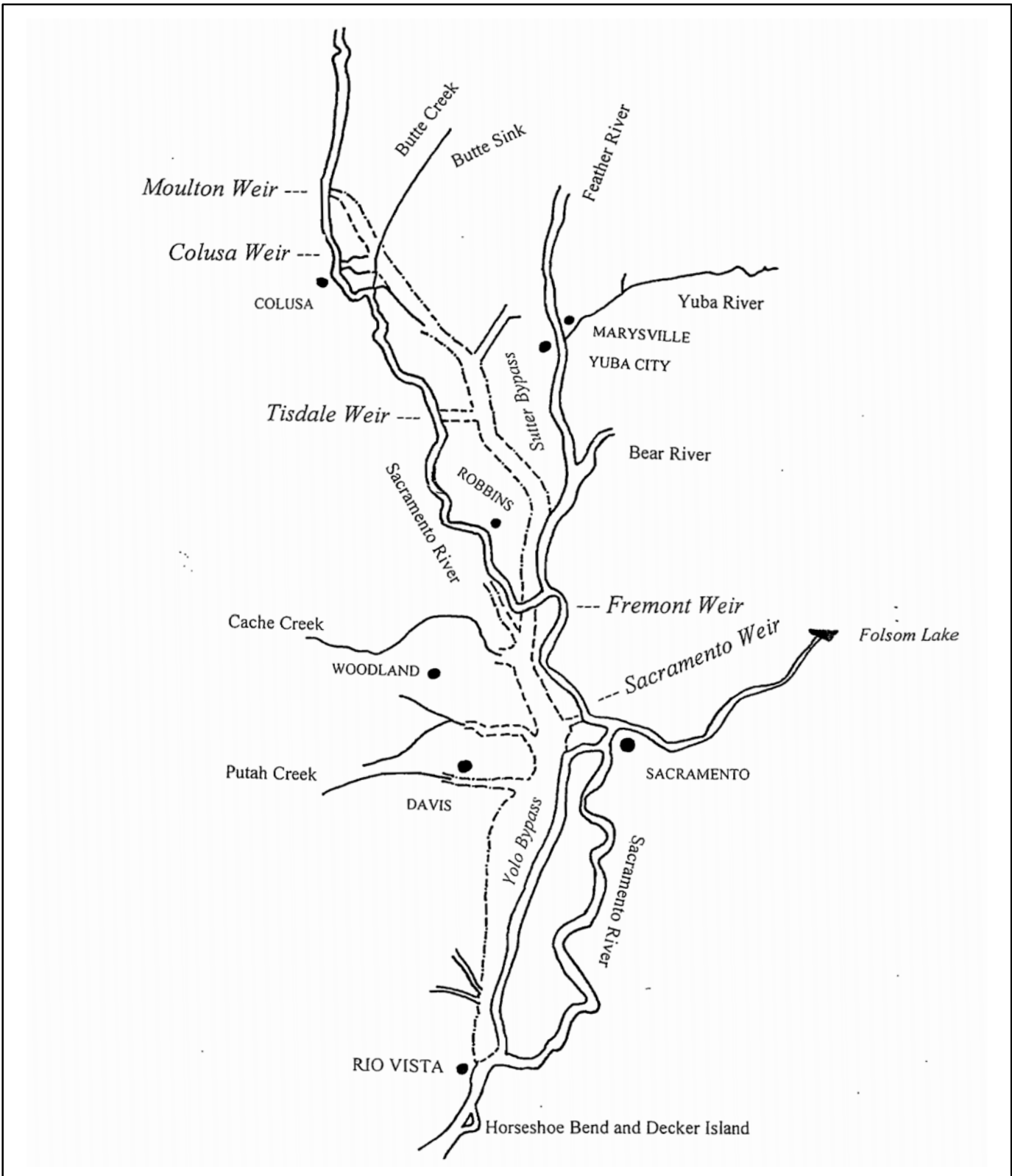
Subsequently, the Corps of Engineers built the U.S. Engineer Storehouse, Rio Vista, in the proposed Project Area, with mooring grounds, a storehouse and a wharf. The facility was used as a marine storage area, for engine and hull repair for motor launches and barges, and for surface maintenance of steel pontoons used for floating suction dredges. The facility was also used as winter headquarters for floating equipment used for work on the Sacramento and well as the San Joaquin and Mokelumne Rivers. The dredge tender "Rio Vista" was placed into service at the site in 1913, ferrying parts and supplies to the dredging operations. By 1929, the U.S. Engineers Storehouse, Rio Vista, was a complex of at least seven buildings plus marine ways, wharf and derrick.

Congress adopted the Sacramento River Flood Control Project as part of the Flood Control Act of 1917, which for the first time made flood control a federal responsibility. Figure 6.1 shows the

¹U.S. Army Corps of Engineers Sacramento District, Environmental Assessment for the Disposal and Reuse of the Rio Vista Army Reserve Center, October 2000, page 4-30.

²City of Rio Vista, Del Rio Hills Planned Unit Development Draft Environmental Impact Report, December 2008, page 4.4-4.

³JRP Historical Consulting Services, Evaluation of National Register Eligibility Rio Vista Army Reserve Center, February 1997, Davis, California.



SOURCE: JRP Historical Consulting Services 1997

Figure 6.1

SACRAMENTO RIVER FLOOD CONTROL PROJECT

overall Sacramento River Project and its main components. The Sacramento River Project extended for 95 miles from Colusa south to Suisun Bay, and included 980 miles of levees, seven weirs, three drainage pumping plants, 438 miles of channels and canals, seven bypasses, 91 gauging stations, and eight radio water stage transmitters. Based on the bypass concept, the project essentially created a second broad and shallow river channel into which flood waters overflow and are carried into Suisun Bay. The overflow channel leads out from the east bank of the river north of Colusa, down through the Sutter Bypass, into the Yolo Bypass and down to Cache Slough, where it rejoins the river just above Rio Vista.

This grand system of levees, weirs and bypasses rested fundamentally on one central improvement, popularly known as “uncorking the bottle”: the widening of the mouth of the river channel just downstream of Rio Vista, where a sharp curve in the original channel of the Sacramento River acted as a cork behind which flood waters would back up and flood the Delta and the upper valley. Figure 6.2 shows these key improvements at the mouth of the river near Rio Vista.

By 1944, the Sacramento River Flood Control Project was essentially complete. In 1952, the Army reassigned the Rio Vista facility from civilian to military jurisdiction. Redesignated the Rio Vista Transportation Corps Marine Depot, the site was used to maintain and store harbor craft, small freighters, tugs, barges, and floating cranes, some of which served in the Korean war and, likely, the Vietnam war. At the height of operations in the late 1950s, the facility stored over 350 vessels, employed nearly 300 civilians, and was contributing substantially to the local economy.

In 1964, the Army transferred a four-acre portion of the facility to the U.S. Coast Guard. In 1980, the facility was redesignated the Rio Vista Army Reserve Center and used for weekend training of Army reserve units for amphibious assaults, ship maintenance, and for service as deck hands. The facility was deactivated in 1989 and formally closed in 1995 by the federal Base Realignment and Closure Act. The land was conveyed to the City in 2003 and annexed in 2006.

6.1.3 Archaeological Resources

The proposed Project Area has been subject to intensive ground-disturbing activities throughout its history. Many feet of dredged sand and silt from the river and adjacent marshlands was placed over the property. In 1923, a levee traversed the property approximately 50 to 100 feet west of Building T-7.¹ These activities may have buried, disturbed, altered or eliminated archaeological resources that may have existed on the site.

A records search for previous surveys and previously identified cultural resources in the Rio Vista area was conducted by the Northwest Information Center of the California Historical Resources Information System in 1995. The results of the records search indicated no previous surveys have been made and no cultural resources had been previously identified in the Rio Vista area.

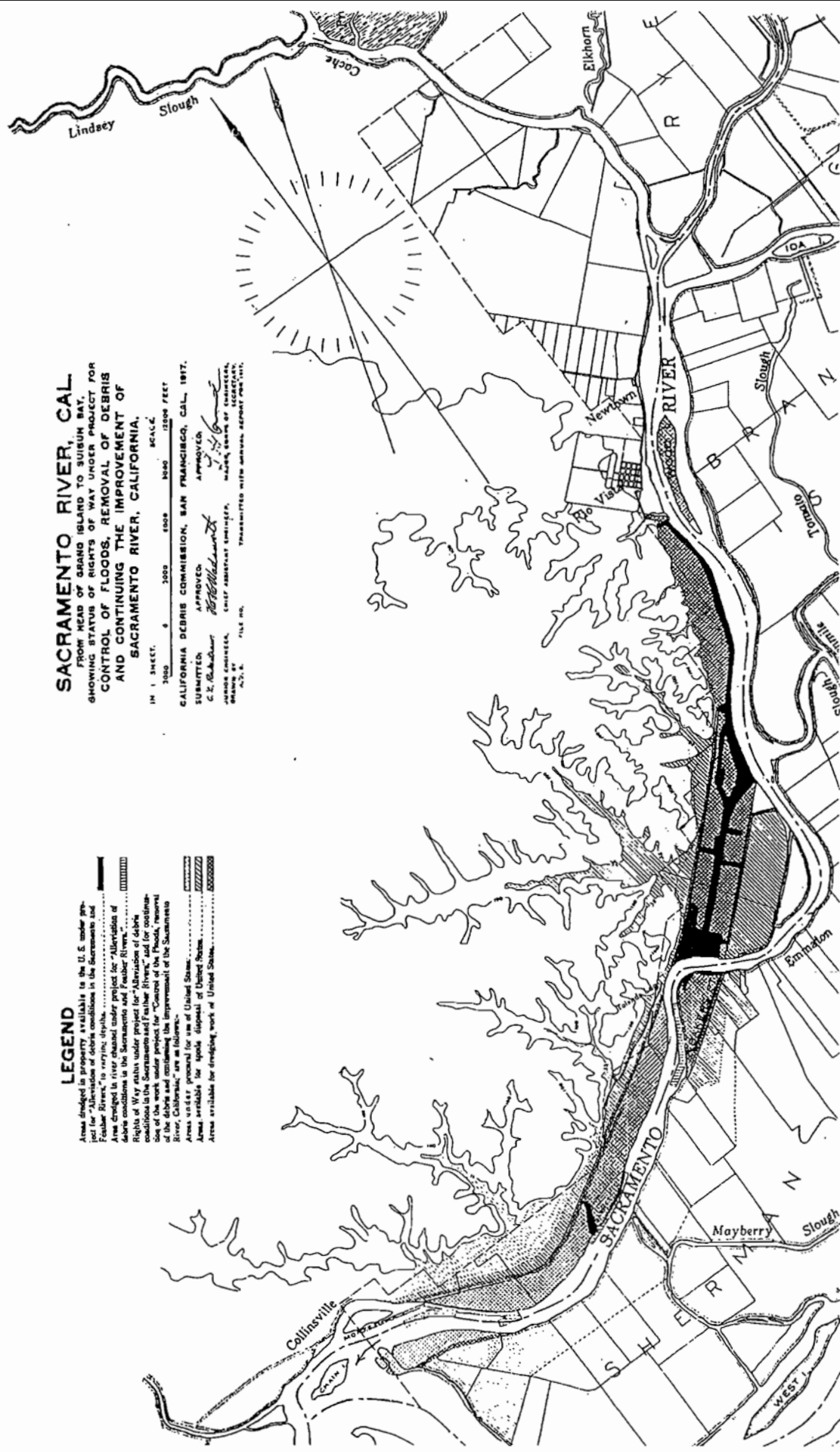
¹U.S. Army Corps of Engineers Sacramento District, Environmental Assessment for the Disposal and Reuse of the Rio Vista Army Reserve Center, October 2000, page 4-31.

LEGEND

- Areas dredged in accordance with the U.S. order approved for "Abatement of debris conditions in the Sacramento and Feather Rivers," to varying depths.
- Areas dredged in river channel under project for "Abatement of debris conditions in the Sacramento and Feather Rivers."
- Rights of Way status under project for "Abatement of debris conditions in the Sacramento and Feather Rivers," and for continuation of the work under project for "Control of floods, removal of debris and continuing the improvement of the Sacramento River, California," are as follows:
- Areas under grant for use of United States.
- Areas available for spoils disposal of United States.
- Areas available for dredging work of United States.

SACRAMENTO RIVER, CAL.
 FROM HEAD OF GRAND ISLAND TO BUISUN BAY,
 SHOWING STATUS OF RIGHTS OF WAY UNDER PROJECT FOR
 CONTROL OF FLOODS, REMOVAL OF DEBRIS
 AND CONTINUING THE IMPROVEMENT OF
 SACRAMENTO RIVER, CALIFORNIA.

IN 1 SHEET. SCALE.
 2000 0 3000 6000 12000 24000 FEET
 CALIFORNIA DEBRIS COMMISSION, SAN FRANCISCO, CAL., 1917.
 SUBMITTED: APPROVED:
 C. E. BUSHNELL CHIEF ASSISTANT ENGINEER, U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO, CALIF. SECRETARY.
 TRANSMITTED WITH ANNUAL REPORT FOR 1917.



SOURCE: JRP Historical Consulting Services 1997

Figure 6.2
SACRAMENTO RIVER FLOOD CONTROL PROJECT
KEY IMPROVEMENTS NEAR RIO VISTA

6.1.4 Historical Resources

The proposed Project Area contains many buildings and structures, such as a water tower and docks, remaining from the former military use, which qualify under CEQA as historic resources. The State Office of Historic Preservation (SHPO) has determined that buildings, structures and objects 45 years or older may be of historical value. Buildings 50 years or older may be eligible for the National Register of Historic Places (National Register). All of the buildings and structures within the proposed Project Area were built before 1960 and are 50 years or older.

In 1997, a report was prepared by JRP Historical Consulting Services under contract with the Corps of Engineers to evaluate the Rio Vista Army Reserve Center complex for eligibility to the National Register. The report concluded that 12 of the buildings and structures appeared to collectively be eligible for the National register as a possible U.S. Engineer Storehouse Historic District. The report also concluded that none of the individual buildings or structures within the proposed Project Area appeared to be individually eligible for the National Register.¹

Subsequent to issuance of the JRP report, the Army determined that no buildings at the Rio Vista Army Reserve Center individually or collectively met the eligibility requirements for inclusion in the National Register. The SHPO concurred with the Army determination that no buildings individually or collectively met the eligibility requirements for inclusion in the National Register. A copy of a July 1997 correspondence documenting this determination and SHPO concurrence, as well as earlier Army correspondence explaining the basis for its determination, is included as Appendix 21.6.² This SHPO concurrence in the Army finding remains a conclusive determination that there are no historical resources eligible for the National Register within the proposed Project Area.³

Despite these determinations with respect to actions by the federal government and National Register eligibility, the 12 buildings and structures nonetheless appear to be collectively eligible for the California Register of Historic Resources (California Register), for the reasons explained in the JRP report and summarized below, and therefore appear to be “historical resources” for purposes of CEQA. A substantial adverse change in the significance of these historical resources would be a significant effect under CEQA.

Laws, regulations and guidelines pertaining to historical resources, including those of CEQA, the National Register and the California Register, are described in Section 6.2, Pertinent Plans and Policies, of this EIR chapter.

(a) U.S. Engineer Storehouse Historic District. The following section summarizes the findings of the JRP report regarding the eligibility to the National Register of historical resources within the proposed Project Area and describes the U.S. Engineer Storehouse Historic District

¹JRP Historical Consulting Services, Evaluation of National Register Eligibility Rio Vista Army Reserve Center, February 1997, Davis, California.

²Letter from Paul R. McGuff, Installation Cultural Resources Management Officer, Department of the Army, Fort Lewis, Washington to Cheryl Widdel, State Historic Preservation Officer referencing Rio Vista Army Reserve Center National Register Determination, July 9, 1997.

³Mark Beason, State Historian II, California Office of Historic Preservation, Project Review Unit. Personal communication with Ricardo Bressanutti, Wagstaff/MIG, January 11, 2010.

suggested in the report.¹ The existing buildings and structures within the proposed Project Area appeared to JRP to be eligible for listing on the National Register under Criterion A as the U.S. Engineer Storehouse Historic District because of their association with the construction of the Sacramento River Flood Control Project. The identified period of significance was from 1919 to 1944, from the earliest year to which the oldest building in the complex could be reliably dated, up to the generally accepted completion date of the Sacramento River Flood Control Project.

(1) *Historic District Boundary.* The district boundary suggested by JRP is shown in Figure 6.3. The suggested district boundary encompasses the historic central waterfront portion of the site. The buildings and structures within the suggested district represent the original cluster of buildings built by the Corps of Engineers at the site to support their dredging activities. The seven buildings and structures outside the boundary were built after 1944, appeared to JRP to be individually and collectively ineligible, and appeared to not be linked historically or physically to the historic district.

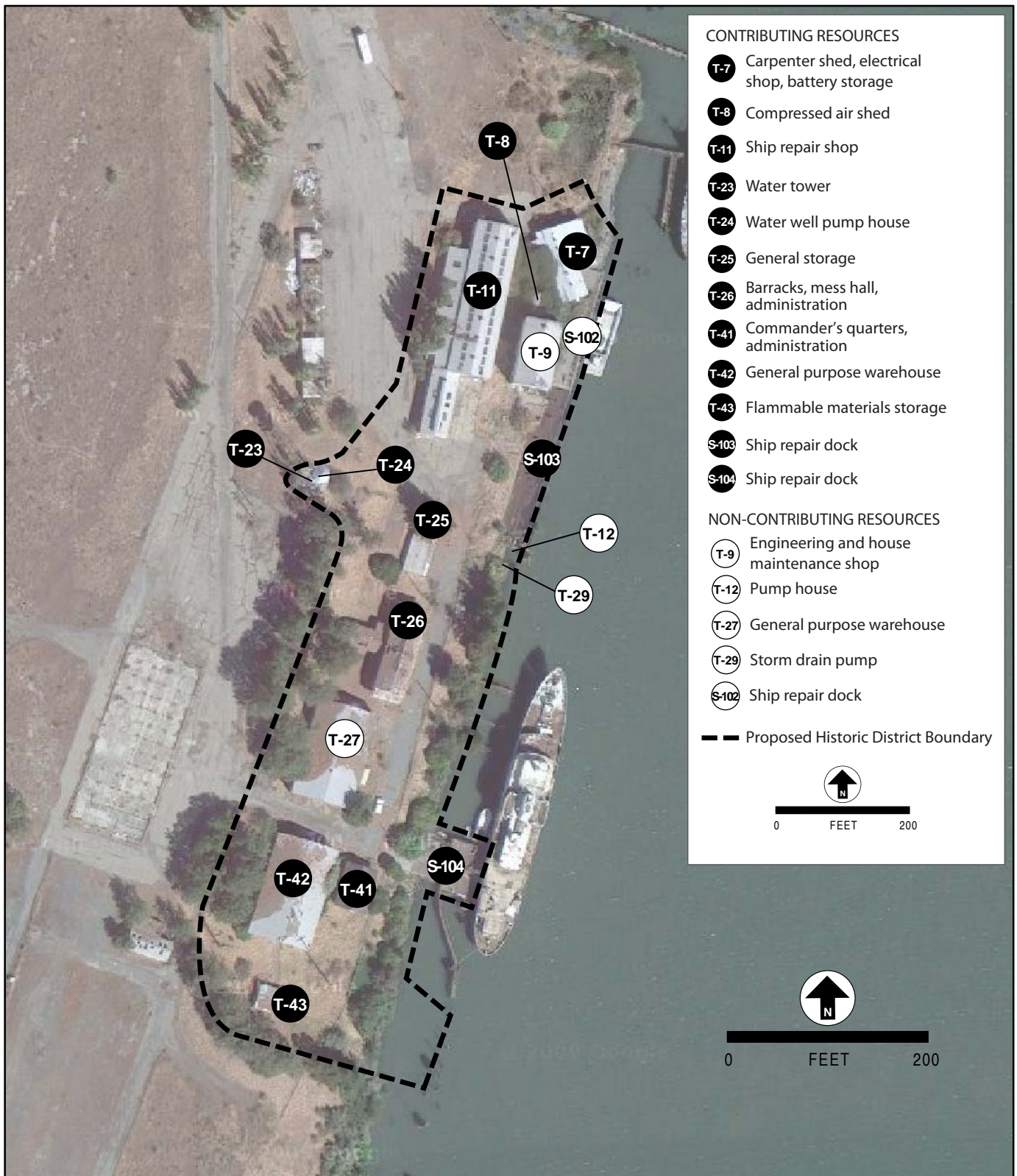
(2) *Historic District Resources.* The JRP-suggested "U.S. Engineer Storehouse Historic District" comprises 17 buildings and structures: 12 contributing resources and five non-contributing elements. The buildings and structures within the suggested historic district are shown in Figure 6.3 and listed in Table 6.1.

A number of previous buildings and other structures were removed from the upper terrace and marine railway portions of the proposed Project Area. The foundations of seven of these former structures remain on the property, outside the suggested historic district boundary. None of these removed buildings and structures dated to the period of significance of the suggested historic district.

(3) *Significance.* A property must have both significance and integrity to be considered eligible for listing on the National Register. The National Register and California Register significance criteria are discussed under Section 6.2 Pertinent Plans and Policies. The JRP-suggested historic district is eligible for the National Register under Criterion A: association with "events that have made a significant contribution to the broad patterns of our history." The Sacramento River Flood Control Project was one of California's most important public works projects, transforming the Sacramento Valley into a productive and prosperous region by reducing the threat of annual overflow and periodic severe flooding. The flood control project protected nearly one million acres of some of the most productive farmland in the world, as well as important cities such as Sacramento, Marysville, Yuba City and a large number of small towns. The flood control project allowed land formerly used for field crops like wheat to be safely planted with higher value orchard crops, increased reliance on river transportation, and made possible substantial settlements and population growth.

The Sacramento River Flood Control Project was also a pioneering effort in the design of large federally subsidized flood control systems. Before the project, the Corps of Engineers believed that the only way to control a river was by levees only. With the exception of the Sacramento River project with its bypasses, the Corps of Engineers held firm to the levees only system for flood control on all

¹JRP Historical Consulting Services, Evaluation of National Register Eligibility Rio Vista Army Reserve Center, February 1997, Davis, California.



SOURCE: JRP Historical Consulting Services 1997

Figure 6.3

PROPOSED U.S. ENGINEER STOREHOUSE HISTORIC DISTRICT

Table 6.1
 BUILDINGS AND STRUCTURES WITHIN THE SUGGESTED HISTORIC
 DISTRICT

Facility Number ¹	Use	Year Built
<i>Contributing Resources</i>		
T-7	Carpenter shed, electrical shop, battery storage	Before 1919
T-8	Compressed air shed	1940-1944
T-11	Ship repair shop	1923-1944
T-23	Water tower	1940-1944
T-24	Water well pump house	1940-1944
T-25	General Storage	1923-1940
T-26	Barracks, mess hall, administration	1923-1929
T-41	Commander's quarters, administration	1923-1929
T-42	General purpose warehouse	1923-1929
T-43	Flammable materials storage	1940-1944
T-103	Ship repair dock	1940-1944
T-104	Ship repair dock	1929-1940
<i>Non-contributing Elements</i>		
T-9	Engineering, housing maintenance shop	1945-1949
T-12	Pump house	1944-1949
T-27	General purpose warehouse	1944-1949
T-29	Storm drain pump	1944-1949
T-102	Ship repair dock	1953-1966

SOURCE: JRP Historical Consulting Services, Evaluation of National Register Eligibility Rio Vista Army Reserve Center, February 1997, Davis, California.

¹ Former Army facility numbers used in the JRP report and other documents prepared for the Army and the base closure, which are part of the project record.

major rivers until the late 1920s. After a 1927 flood on the lower Mississippi demonstrated the failure of the levees only policy, the Sacramento River approach became the national model for future flood control projects.

(4) *Integrity.* The historic resources within the suggested historic district retain a strong level of integrity of location, design, setting, workmanship, feeling and association. There have been some losses of integrity, but these have not been sufficient to result in ineligibility:

- Many of the buildings had their original wood siding covered with asbestos shingles in the 1950s. The original wood siding remains underneath the asbestos siding and the addition of the siding is reversible.
- Alterations were made to Building T-7 and, to a lesser degree, Buildings T-11 and T-26. Although substantial, these modifications are insufficient to disqualify the buildings' inclusion as contributing resources to the suggested district.
- The suggested district contains several non-contributing elements from outside the period of significance. However, the architectural style of these elements is generally consistent with

the rest of the district. The waterfront complex of warehouses, shops and wharves conveys a clear sense of its mission and function. The more modern buildings on the site, both inside and outside the district boundary, do not detract substantially from the overall feeling and the strong sense of time and place.

6.1.5 Paleontological

Paleontological resources include fossil remains, as well as fossil localities and rock or soil formations that have produced fossil material. Fossils are the remains or traces of prehistoric animals and plants. Fossils are important scientific and educational resources because of their use in: (1) documenting the presence and evolutionary history of particular groups of now extinct organisms, (2) reconstructing the environments in which these organisms lived, and (3) determining the relative ages of the strata in which they occur and of the geologic events that resulted in the deposition of the sediments that formed these strata and in their subsequent deformation.

Paleontological resources are classified as non-renewable scientific resources and are protected by federal and state statutes, most notably the 1906 federal Antiquities Act. Professional standards for assessment and mitigation of adverse impacts on paleontological resources have been established by the Society for Vertebrate Paleontology.¹

Rio Vista is located in what is geologically known as the Great Valley, which consists of Quaternary sedimentary deposits which contain well-preserved vertebrate and plant fossils. A records search of the University of California's Museum of Paleontology collections catalog for localities from where Museum specimens have been collected revealed localities within Rio Vista.² Previous placement of dredge fill and ground-disturbing activities within the proposed Project Area reduces the likelihood of encountering paleontological resources.

6.2 PERTINENT PLANS AND POLICIES

The treatment of cultural resources is governed by federal, State, and local laws, policies, and guidelines. These provisions set forth specific criteria for determining whether prehistoric and historic sites or objects are significant and/or protected by law. Federal and State significance criteria generally focus on the resource's integrity and uniqueness, its relationship to similar resources, and its potential to contribute important information to scholarly research. Some resources that do not meet federal significance criteria may be considered significant under State criteria.

6.2.1 Federal Laws, Regulations, Standards and Guidelines

(a) National Historic Preservation Act. The National Historic Preservation Act of 1966 established the National Register of Historic Places (National Register) as the official designation of historical resources, including districts, sites, buildings, structures and objects. Sites less than 50 years in age, unless of exceptional importance, are not eligible for the

¹City of Rio Vista, Del Rio Hills Planned Unit Development Draft Environmental Impact Report, December 2008, page 4.4-1.

²University of California Museum of Paleontology specimen search, February 22, 2010, <http://ucmpdb.berkeley.edu/>.

National Register. Listing in the National Register does not entail specific protection for a property, but project effects on properties listed or eligible for listing in the National Register must be evaluated under CEQA.

For a property to be eligible for listing in the National Register, it must be significant and possess integrity. A property is significant in American history, architecture, archeology, engineering, and culture if it is:

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

Integrity is the authenticity of a property's historic identity, evidenced by the survival of physical characteristics that existed during the property's historic or prehistoric period. Integrity is determined through application of seven factors: location, design, setting, workmanship, materials, feeling, and association. Loss of integrity, if sufficiently great, will overwhelm the historical significance of a resource and render it ineligible.

(b) Secretary of the Interior's Standards for the Treatment of Historic Properties. The U.S. Secretary of the Interior's Standards for the Treatment of Historic Properties promote responsible practices that help protect our Nation's irreplaceable cultural resources. The Standards are neither technical nor prescriptive, and cannot, in and of themselves, be used to make essential decisions about which features of the historic building should be saved and which can be changed. But once a treatment is selected, the Standards provide philosophical consistency to the work. The four treatment approaches are Preservation, Rehabilitation, Restoration, and Reconstruction:

- **Preservation** requires retention of the greatest amount of historic fabric, along with the building's historic form, features, and detailing as they have evolved over time.
- **Rehabilitation** acknowledges the need to alter or add to a historic building to meet continuing or new uses while retaining the building's historic character.
- **Restoration** allows for the depiction of a building at a particular time in its history by preserving materials from the period of significance and removing materials from other periods.
- **Reconstruction** establishes a limited framework for re-creating a vanished or non-surviving building with new materials, primarily for interpretive purposes.

Of the four treatment approaches, only the Standards for Rehabilitation allow alterations or additions to a historic resource to allow new uses while retaining the resource's historic

character. The Standards for Rehabilitation include the following standards which are particularly relevant to the Project and the historical resources within the proposed Project Area:

1. *A property will be used as it was historically or be given new use that requires minimal changes to its distinctive materials, features, spaces and spatial relationships.*
2. *The historic character of a property will be retained and preserved. The removal of distinctive materials or alterations of features, spaces and spatial relationships that characterize a property will be avoided.*
5. *Distinctive materials, features, finishes and construction techniques or examples of craftsmanship that characterize a property will be preserved.*
9. *New addition, exterior alterations, or related new construction will not destroy historic materials, features and spatial relationships that characterize the property. The new work shall be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.*
10. *New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.*

(c) Secretary of the Interior's Standards for Architectural and Engineering Documentation.

These standards concern the development of documentation for historic buildings, sites, structures and objects. This documentation, which usually consists of measured drawings, photographs and written data, provides important information on a property's significance for use by researchers, preservationists, architects and others interested in preserving and understanding historic properties. Documentation permits accurate repair or reconstruction of parts of a property, or may present information about a property that is to be demolished. These Standards are intended for use in developing documentation to be included in the Historic American Building Survey (HABS) and the Historic American Engineering Record (HAER) Collections in the Library of Congress. The requirements for content, quality, materials and presentation may also be applied to documentation for other purposes such as State or local archives.

6.2.2 State Laws and Regulations

(a) CEQA Guidelines. State Public Resources Code and CEQA Guidelines provisions for historic and cultural (archaeological) resources are summarized below:

- (1) *Historical Resources:* Section 15064.5 of the State CEQA Guidelines states that a project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant impact on the environment. The CEQA Guidelines define the following four ways that a property can qualify as a significant historical resource for purposes of CEQA compliance:
 - The resource is listed in or determined eligible for listing in the California Register of Historical Resources, as determined by the State Historical Resources Commission.

- The resource is included in a local register of historical resources, as defined in Section 5020.1(k) of the Public Resources Code, or identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the Public Resources Code, unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
- The lead agency determines the resource to be significant as supported by substantial evidence in light of the whole record.
- The lead agency determines that the resource may be a historical resource as defined in Public Resources Code Sections 5020.1(j) or 5024.1 (CEQA Guidelines Section 15064.5) which means, in part, that it may be eligible for the California Register.

For historic resources, CEQA Guidelines Section 15064.5 (b) (3) indicates that a project that follows the U.S. Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings, or the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings (1995), shall mitigate impacts to a less than significant level.

(2) *Archaeological Resources:* In addition, Public Resources Code Section 21083.2 and Section 15126.4 of the CEQA Guidelines specify lead agency responsibilities to determine whether a project may have a significant effect on archaeological resources. If it can be demonstrated that a project will damage a unique archaeological resource, the lead agency may require reasonable efforts for the resources to be preserved in place or left in an undisturbed state. Preservation in place is the preferred approach to mitigation. The Code also details required mitigation if unique archaeological resources are not preserved in place.

Section 15064.5 of the CEQA Guidelines also specifies procedures to be used in the event of an unexpected discovery of Native American human remains on non-federal land. This CEQA Guidelines section and related Public Resources Code sections protect such remains from disturbance, vandalism and inadvertent destruction, establish procedures to be implemented if Native American skeletal remains are discovered during construction of a project, and establish the Native American Heritage Commission (NAHC) as the authority to resolve disputes regarding disposition of such remains.

(b) California Register of Historic Resources. The California Register of Historic Resources establishes a list of properties to be protected from substantial adverse change (Public Resources Code Section 5024.1). A historical resource may be listed in the California Register if it is determined to be historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political or cultural annals of California, and meets any of the following criteria:

- 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 California's 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 value.
- has yielded or is likely to yield information important in prehistory or history.

The California Register includes properties that are listed or have been formally determined eligible for listing in the National Register, State Historical Landmarks and eligible Points of Historical Interest. Other potential resources require nomination for inclusion in the California Register.

(c) Health and Safety Code Section 7052 and 7050.5. Section 7052 of the Health and Safety Code states that the disturbance of Native American cemeteries is a felony. Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the county coroner can determine whether the remains are those of a Native American. If determined to be Native American, the coroner must contact the California Native American Heritage Commission (NAHC).

(d) California Native American Historical, Cultural and Sacred Sites Act. The California Native American Historical, Cultural and Sacred Sites Act applies to both State and private lands. The Act requires that upon discovery of human remains, construction or excavation activity cease and the county coroner notified. If the remains are of a Native American, the coroner must notify the NAHC. The NAHC then notifies those persons most likely to be descended from the Native American remains. The Act stipulates the procedures the descendants may follow for treating or disposing of the remains and associated grave goods.

(e) Public Resources Code Section 5097. Public Resources Code Section 5097 specifies the procedures to be followed in the event of the unexpected discovery of human remains on non-Federal public lands. The disposition of Native American burials fall within the jurisdiction of the NAHC, which prohibits willfully damaging any historic, archaeological or vertebrate paleontological site or feature on public lands.

6.2.3 Rio Vista General Plan

The Rio Vista General Plan 2001 encourages the preservation of the city's historic resources through cultural resources inventories for new development projects, public education and awareness programs, the adoption of a preservation ordinance, the use of State and Federal funding and tax programs, application of the State Historical Building Code, and the establishment of a cultural resources database to be maintained by the Rio Vista Museum. The Rio Vista Museum, located at 16 N. Front Street and operated by the private non-profit Rio Vista Museum Association, is the primary local source and repository for historical and genealogical data. The following goal, policies and actions of the General Plan Resource and Conservation Management Element are relevant to consideration of the environmental impacts of the Project.

GOAL 10.10 TO ENCOURAGE PRESERVATION OF THE CITY'S HISTORIC RESOURCES WHILE ENHANCING THEIR VALUE AND ECONOMIC LIFE.

Policy 10.10.A The City shall ensure that urban changes preserve and maintain historic and architectural resources, including historic buildings and industrial spaces that are of historical significance.

Policy 10.10.B The City shall improve local awareness of its cultural and historical resources.

Policy 10.10.C The City shall require that discretionary development projects identify important historic, archaeological, and cultural sites and their contributing environment from damage, destruction, and abuse. The City shall ensure that such assessments are incorporated into the City's cultural and historical database, to be maintained by the Rio Vista Museum.

Policy 10.10.D The City shall identify and promote incentive programs to assist private property owners in preserving and enhancing historic structures.

Policy 10.10.E The City shall encourage the preservation of historic structures and shall discourage rehabilitation and remodel projects that would alter their historic character.

Policy 10.10.F The City shall regard demolition of historic resources as a last resort, to be permitted only after the City determines that the resource retains no reasonable economic use; that demolition is necessary to protect health, safety, and welfare; or that demolition is necessary to proceed with a new project where the benefits of the new project outweigh the loss of the historic resource.

Policy 10.10.G The City shall support public, quasi-public, and private entities in their preservation efforts.

6.3 IMPACTS AND MITIGATION MEASURES

6.3.1 Significance Criteria

Based on Appendix G of the CEQA Guidelines,¹ the Project would be considered to have a significant adverse impact on cultural resources if it would:

- (a) Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines section 15064.5;
- (b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines section 15064.5;
- (c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; or
- (d) Disturb any human remains, including those interred outside of formal cemeteries.

¹CEQA Guidelines, Appendix G, Items V(a) through (d).

6.3.2 Archaeological Resources

Impact 6-1: Disturbance of Archaeological Resources. Redevelopment activities or development facilitated by the Project could potentially disrupt, alter or eliminate as-yet undiscovered archaeological sites, potentially including Native American remains. This possibility represents a ***potentially significant impact*** (see Criteria (b) and (d) under subsection 6.3.1, "Significance Criteria," above).

Explanation:

Despite the history of disturbance within the proposed Project Area, additional future ground-disturbing activities associated with implementation of the proposed Redevelopment Plan, including demolition of existing site improvements and construction of new redevelopment projects facilitated by the Plan could potentially disrupt, alter or eliminate as-yet undiscovered archaeological sites, potentially including Native American remains, within or immediately adjacent to the proposed Project Area.

Mitigation 6-1: If prehistoric or historic-period archaeological resources are encountered during grading or excavation, work shall avoid altering the materials and their context until a qualified professional has evaluated, recorded and determined appropriate treatment of the resource, in consultation with the City. Project personnel shall not collect cultural resources. Cultural resources shall be recorded on DPR 523 historic resource recordation forms. If it is determined that the proposed development could damage a unique archaeological resource, mitigation shall be implemented in accordance with Public Resources Code Section 21083.2 and Section 15126.4 of the CEQA Guidelines, with a preference for preservation in place. This measure would reduce the potential impact on archaeological resources to a ***less-than-significant level***.

6.3.3 Historical Resources

Impact 6-2: Loss of Historic Resources. A 1997 historic resource evaluation report prepared for the U.S. Army Corps of Engineers by JRP Historical Consulting Services concluded that, although none of the remaining structures originally constructed by the Corps of Engineers to support dredging activities for its Sacramento River Flood Control Project (1914-1944) appeared to be individually eligible for listing in the National Register of Historic Places (National Register), 12 of the buildings collectively appeared to be eligible for listing as a historic district, suggested by the JRP report as the "U.S. Engineer Storehouse Historic District." Subsequent to issuance of the JRP report, the Corps of Engineers determined that none of the buildings individually or collectively met the eligibility requirements for

(continued)

Impact 6-2 (continued):

listing on the National Register, and the State Historic Preservation Officer (SHPO) concurred with the Corps of Engineers determination. Despite these determinations, however, the suggested historic district nonetheless still appears to be eligible for listing in the California Register of Historic Resources (California Register) and therefore is a historical resource for purposes of CEQA. The Project could therefore damage, alter, obscure or eliminate character-defining elements of the suggested U.S. Engineer Storehouse Historic District so as to cause a loss of integrity and loss of continued eligibility to the California Register. This possibility represents a ***potentially significant impact*** (see Criterion (a) under subsection 6.3.1, "Significance Criteria," above).

Explanation:

Redevelopment activities under the proposed Redevelopment Plan, or the construction of development projects facilitated by the Plan, could damage, alter, obscure or eliminate the character defining features, materials, spaces, spatial relationships or setting of the contributing buildings and structures within the previously-suggested U.S. Engineer Storehouse Historic District. If such changes were sufficient to cause a loss of integrity and loss of continued eligibility to the California Register of Historic Resources, this would be a significant impact on historic resources under CEQA.

The 1997 JRP report identified which buildings and structures within the suggested historic district boundaries were contributing elements and which were not. However, the evaluation did not identify the character defining features, materials, spaces, spatial relationships and setting of these suggested contributing elements or the district as a whole. A historic district consists of historic buildings, structures, and their setting. The buildings, water tower, wharves, moorings, river, views, topography, and landscape features may together create the historic character of the district.

Under the CEQA Guidelines, a project that follows the Secretary of the Interior's Standards for the Treatment of Historic Properties shall mitigate impacts to a less than significant level. Of the four treatment approaches, only the Standards for Rehabilitation allow alterations or additions to a historic resource to allow new uses while retaining the resource's historic character. Under the Standards for Rehabilitation, new additions, alterations, or adjacent new construction must not destroy character-defining features, spaces and spatial relationships. New work must be differentiated from the old and must be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment. New additions, alterations and new construction must be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

In some cases, it can be very challenging to accommodate the needs of new uses while fully adhering to the Standards for Rehabilitation and, in many situations, it can be altogether infeasible. It cannot be determined at this time whether it would be feasible to mitigate to a less than significant level the impacts of redevelopment activities and development under the proposed Redevelopment Plan. The following mitigation provides for two possible outcomes.

Measures (a) and (b), if feasible, would mitigate the impact on historic resources to a less than significant level. If measures (a) and (b) are not feasible, then the City would be required to implement the remaining measures (c) through (h) to the extent feasible, but despite these measures, the impact to historic resources would remain an unavoidable significant impact.

Mitigation 6-2: Before undertaking any activity involving the suggested historic district or its contributing structures, including the removal of hazardous building materials, the City or project sponsor shall evaluate the proposed historic district and its contributing buildings, structures, landscape features and setting to identify the character-defining spaces, features, materials, spatial relationships and setting that make it significant and either:

(a) Adhere to the Secretary of the Interior's Standards for the Rehabilitation of Historic Properties in all work within and adjacent to the suggested historic district so that the integrity of the historic district and its continued eligibility to the California Register of Historic Resources is preserved.

Implementation of mitigation alternative 6-2(a) would reduce the potential impact on historical resources to a ***less-than-significant level***.

or

(b) If implementation of mitigation alternative 6-2(a) above is not feasible and a character-defining element of the historic district would be damaged, altered, obscured or eliminated so as to cause a loss of integrity and loss of continued eligibility to the California Register of Historic Resources, the project sponsor shall nevertheless implement all feasible mitigation as required by CEQA, consisting of the following measures in the following order, to the extent feasible:

- (1) Document the suggested historic district and its contributing elements before any changes that would cause a loss of integrity and loss of continued eligibility to the California Register of Historic Resources. The documentation shall adhere to the Secretary of the Interior's Standards for Architectural and Engineering Documentation. The documentation shall be made available for inclusion in the Historic American Building Survey (HABS) or the Historic American Engineering Record (HAER) Collections in the Library of Congress, the California Historical Resources Information System, the Bancroft Library, the Rio Vista Library and the Rio Vista Museum.
- (2) Retain and reuse the proposed historic district's contributing buildings, structures and setting to the maximum feasible extent.

(continued)

Mitigation 6-2 (continued):

- (3) Continue to apply the Standards for Rehabilitation to the maximum feasible extent in all alterations, additions and new construction within and adjacent to the proposed historic district.
- (4) Relocate contributing buildings or structures to another location compatible with their original use, character and setting, preferably within the proposed Project Area, or a nearby riverfront location within or near Rio Vista.
- (5) Through careful methods of planned deconstruction to avoid damage and loss, salvage character-defining features and materials for educational and interpretive use on-site or at the Rio Vista Museum, or for reuse in new construction on the site in a way that commemorates their original use and significance.
- (6) Interpret the historical significance of the proposed historic district through a permanent exhibit or program within the proposed Project Area, potentially within the proposed park facilities, community center, lodge or research station.

Even with implementation of one or more of measures (1) through (6) above, there would still be a loss of continued eligibility of the suggested historic district to the California Register and therefore the potential impacts on historic resources under mitigation alternative 6-2(b) would be ***significant and unavoidable***.

6.3.4 Paleontological Resources

Impact 6-3: Disturbance of Paleontological Resources. Redevelopment activities or development facilitated by the Project could potentially disrupt, alter or eliminate as-yet undiscovered paleontological resources. This would be a ***potentially significant impact*** (see Criterion (c) under subsection 6.3.1, "Significance Criteria," above).

Explanation:

The intensive ground-disturbing activities throughout the history of the Rio Vista Army Reserve Center reduced the likelihood of encountering paleontological resources. Nonetheless, ground-disturbing activities during demolition of existing site improvements and construction of redevelopment projects under the proposed Redevelopment Plan, or the construction of development projects facilitated by the Plan, could potentially disrupt, alter or eliminate as-yet undiscovered paleontological sites within or immediately adjacent to the proposed Project Area.

Mitigation 6-3: If paleontological resources are encountered, work shall avoid altering the resource and its stratigraphic context until a qualified paleontologist has evaluated, recorded and determined appropriate treatment of the resource, in consultation with the City. Project personnel shall not collect cultural resources. Appropriate treatment may include collection and processing of "standard" samples by a qualified paleontologist to recover micro vertebrate fossils; preparation of significant fossils to a reasonable point of identification; and depositing significant fossils in a museum repository for permanent curation and storage, together with an itemized inventory of the specimens. This measure would reduce the potential impact on paleontological resources to a ***less-than-significant level***.

6.3.5 Cumulative Impacts

Impact 6-4: Cumulative Loss of Cultural Resources. The loss of significant historical resources caused by the Project would be a cumulatively considerable contribution to a loss of cultural resources throughout Rio Vista and the surrounding region, and thus a ***significant impact*** (see Criteria (a) through (d) under subsection 6.3.1, "Significance Criteria," above).

Explanation:

Continued development throughout Rio Vista has the potential to cause a substantial adverse change in a significant historic or archaeological resource or to destroy a significant paleontological resource. Compliance with federal, State and local laws, regulations and policies addressing historic and archaeological resources, would reduce potential cultural resources impacts. Nonetheless, despite these policies, development under the proposed Redevelopment Plan, together with other reasonably foreseeable development, could potentially cause a substantial adverse change in a significant historic or archaeological resource or destroy a significant paleontological resources, which would be considered a significant cumulative impact.

Mitigation 6-4: Adhering to the Secretary of the Interior's Standards for the Rehabilitation of Historic Properties in all work within and adjacent to the suggested historic district would reduce the Project contribution to this cumulative impact. The feasibility of this mitigation measure cannot be determined until the specific character-defining elements of the proposed historic district are determined. The cost, delay and limitations on development associated with this mitigation measure may make it ultimately infeasible. Therefore, the Project contribution would remain cumulatively considerable and thus ***significant and unavoidable***.

7. AESTHETICS

This chapter describes the existing visual setting within and around the proposed Project Area, pertinent plans and policies, and the potential impacts of the Project related to aesthetics.

7.1 SETTING

7.1.1 Existing Visual Character and Quality

(a) Rio Vista. Rio Vista's main character-defining visual features are the Sacramento River, the Montezuma Hills, and the historic downtown. The drawbridge spanning the river with its towers and trusses, the freighters and pleasure craft that move up and down the river, and the tugs and barges that tie up at the river's edge, also define this river town. The rolling grasslands of the Montezuma Hills, with long views to the river and surrounding Delta farmland add to the setting. Rio Vista's historic downtown and traditional neighborhoods link the city to the waterfront and its past, and provide a strong small-town charm and sense of community.

(b) Proposed Project Area. Like Rio Vista, the character of the proposed Project Area is defined by its location on the edge of the river and foot of the Montezuma Hills, in combination with its collection of historic waterfront buildings and wharves.

The flat site is composed of two terraces separated by a slight bluff: a lower terrace lying a few feet above the river and an upper terrace approximately 15 feet higher. A number of tall, mature trees located between the upper and lower terraces form a backdrop to the historic waterfront buildings and wharves. Riparian vegetation lines the river, marsh vegetation is located along the edges of a large boat ramp, and a few shrubs and trees, and weedy, mowed grasses cover the remainder of the site. A chain link fence borders the site and parts of the interior of the site are also fenced. A few large boats and barges are moored at the docks and in the river next to the site.

The lower terrace contains the original historic waterfront complex of buildings and wharves, including a large ship repair shop and two large warehouses, several smaller buildings, an elevated water storage tank, a large boat ramp, four docks and 14 moorings in the river. The two large warehouses, main ship repair shop, and water tower are the most visually dominant features on the site, due to their height, scale and visible surface area. The elevated water storage tank is a distinctive site landmark visible above buildings and vegetation in distant views.

This is the original cluster of buildings built by the Corps of Engineers beginning as early as 1919 to support their dredging activities associated with the construction of the Sacramento River Flood Control Project. Though severely dilapidated, this unique waterfront complex of warehouses, shops and wharves conveys a clear sense of its original function, and the strong sense of time and place.

Fenced and gated, at the southern edge of the city, separated from rest of the city by the inlet to Marina Creek, the proposed Project Area has a sense of being outside the city.

7.1.2 Scenic Vistas

(a) Viewer Sensitivity. Viewers in the vicinity of the proposed Project Area that could be particularly sensitive to visual changes within the proposed Project Area include residential households in homes near the northwest corner and the southwest corner of the site, and at the top of the hill west of the site, recreationists at Sandy Beach Regional Park, recreationists traveling to and from Sandy Beach Regional Park on Beach Drive, boaters in the Sacramento River, travelers on River Road/SR 160 on the east bank of the Sacramento River, and travelers on the Highway 12 drawbridge entering Rio Vista.

(b) Views of the Proposed Project Area. The proposed Project Area is visible from River Road/SR 160, which is an officially-designated State Scenic Highway, and the Duck Island Trailer Park, on the east bank of the Sacramento River.

The proposed Project Area is prominent in views from adjacent homes near the northwest and southwest corners of the site. The site is prominent in middleground views from the home on the adjacent hilltop to the west. The proposed Project Area is also prominent in views from Beach Drive alongside the property. The existing structures within the proposed Project Area are clustered near the river, away from Beach Drive and surrounding uses.

The waterfront portions of the site and the water tower are visible from the Point Waterfront Restaurant and the RV park at the end of Marina Drive, from the Delta Marina and Yacht Harbor, from some homes on Edgewater Drive, and from portions of Sandy Beach Regional Park. The waterfront portions of the property are also visible in distant views from parts of the downtown waterfront and the Highway 12 drawbridge entering Rio Vista.

(c) Views from the Proposed Project Area. Significant views from within the proposed Project Area include views of the Sacramento River, including views of the Highway 12 drawbridge, views up and down the river, and views of the east bank of the river. Other views from the flat site are blocked by vegetation and the Montezuma Hills.

7.1.3 Light, Glare and Sky Glow

Existing sources of nighttime light within and around the proposed Project Area include those common to urban areas, such as street lights, parking lot and storage yard lights, building lighting, signs, vehicle headlamps and interior lighting visible through windows. Glare is created by reflection of sunlight and artificial light off of windows, buildings and other surfaces.

Existing sources of nighttime light include the Delta Marina Yacht Harbor Resort, the U.S. Coast Guard Station, the Beach Drive Wastewater Treatment Plant and Sandy Beach Regional Park. There is no existing lighting that is operational within the proposed Project Area. The proposed Project Area and vicinity, at the edge of the city between the Montezuma Hills and the Sacramento River, are relatively dark at night, which enables comparatively good night sky access for visitors and campers at Sandy Beach Regional Park and adds to the city's small-town rural community character and desired contrasts between town and country.

7.2 PERTINENT PLANS AND POLICIES

7.2.1 Rio Vista General Plan

The Rio Vista General Plan provides direction related to aesthetics and community design in the Community Character & Design Element, as well as the Land Use, Open Space & Recreation, and Resource Conservation & Management Elements. Actions CD-5 through CD-20 of the Community Character & Design Element set forth detailed design criteria for a range of issues.

(a) Gateways and Landmarks. Figure 5-6 Community Entryways, Identity Features and Landmarks, of the Community Character & Design Element, identifies the proposed Project Area as an opportunity for commercial and recreational use along the Sacramento River. Figure 5-6 also identifies Marina Creek marshland northwest of the proposed District Area as one of the opportunity locations in the community for the preservation of native habitat and development of a public trail system. Policy 5.6.C of the Community Character and Design Element identifies Beach Drive as an important secondary gateway to the city.

(b) Rio Vista Principles. The following principles contained in the Rio Vista General Plan are relevant to consideration of the Project and its aesthetic effects:

- *Preserve Rio Vista's sense of community and small-town character.*
 - *Rio Vista should still be recognizable to today's residents 30 years from now. New development should reinforce the characteristics that make Rio Vista unique. Existing neighborhoods should be examined and strengthened.*
 - *Farmland and nature are important elements of the community. A clear edge between urban development and agriculture should be maintained.*
 - *The Sacramento River and related natural areas should be showcased and enhanced. These resources should be recognized as vital and essential to the community.*
 - *New development should create complete neighborhoods rather than a series of subdivisions that are indistinguishable from those in other communities.*
 - *Parking lots should not dominate street frontage, public spaces, or buildings.*
 - *Community identity should be strengthened with attractive entryways on Highway 12, Main Street, and River Road.*
- *Preserve and strengthen the downtown, waterfront, and historic places.*
 - *The Sacramento River should be made an accessible resource for the enjoyment of Rio Vista residents and the general public.*
- *Preserve the environmental resources that define Rio Vista.*
 - *New development should accommodate and showcase natural features as community amenities. New development should respect the contours of hillsides, valleys, and drainageways as important recognizable features of Rio Vista. Key hilltops to be preserved for public use and vistas should be identified.*

(c) Goals, Policies and Actions. The following goals, policies and actions of the Community Character & Design and Open Space & Recreation Elements are also relevant to consideration of the Project and its aesthetic effects:

- *To respect the character of the existing landform and the natural drainage patterns. (Goal 5.1)*
- *The City shall ensure that natural creek beds and watercourses remain undisturbed for a minimum distance of 20 feet from the top of the bank. (Policy 5.1.B)*
- *The City shall protect key hilltops, valleys, and watercourses from mass grading. (Policy 5.1.C)*
- *To weave the natural features of Rio Vista into the urban fabric for public use. (Goal 5.2)*
- *The City shall preserve key hilltops for public use and views. (Policy 5.2.B)*
- *To protect and develop native habitat and create a variety of recreational experiences. (Goal 5.4)*
- *The City shall require development projects to incorporate native habitat, trails, and parks into the site design to the greatest extent feasible. (5.4.A)*
- *To create a strong sense of community identity. (Goal 5.6)*
- *The City shall establish a hierarchy of community features and focal points, as shown in Figure 5-6. (5.6.A)*
- *For secondary entryways that are considered important, but not primary entries for residents and visitors, the City shall locate them on Airport Road, Montezuma Hills Road-Second Street, Beach Street, and Front Street. (5.6.C)*
- *To create community landmarks and focal points at strategic and important activity centers. (Goal 5.7)*
- *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. (5.7.A)*
- *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. (5.7.B)*
- *To create safe, attractive streets that serve the entire community. (Goal 5.9)*
- *The City shall create street patterns that provide pedestrian opportunities, variety, and visual interest. (5.9.A)*
- *To develop attractive nonresidential districts that encourage pedestrian activity and provide multi-modal access from nearby neighborhoods and business centers. (Goal 5.15)*
- *Where building orientation on the street is not feasible, the City shall require that businesses have landscaped setbacks from adjacent streets. (5.15.B)*

- *The City shall require that all loading, delivery and storage areas, and mechanical and utility equipment are screened from views on public streets and pedestrian corridors. (5.15.D)*
- *The City shall require that side and rear facades of buildings are treated with the same quality of design and materials as the front elevations. (5.15.J)*
- *To incorporate lighting and signage elements into a community design that retains the traditional character of Rio Vista. (Goal 5.19)*
- *The City shall ensure that the view of onsite lighting is shielded from those outside the premises to the greatest extent feasible. (Policy 5.19.C)*
- *The City shall minimize illumination of the night sky to the greatest extent feasible. (Policy 5.19.D)*
- *To provide public access and view opportunities on the Sacramento River to the maximum extent feasible. (GOAL 9.1)*
- *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.A)*
- *The City shall enhance the Sacramento River and its waterfront as a scenic resource consistent with water-oriented recreation. (Policy 9.1.C)*
- *Public access shall be provided to the River through the former Army Reserve Base site. (Policy 9.1.D)*
- *The City shall pursue a pedestrian connection between the former Army Reserve Base site and Sandy Beach Regional Park. (Policy 9.1.E)*
- *Environmental/Visual Constraints Map (Action CD-1)*

7.2.2 State Scenic Highways

State Route 160, also known as River Road, is an Officially Designated State Scenic Highway from the Contra Costa County line to the southern city limit of Sacramento. This road meanders through historic Delta agricultural areas and small towns along the east bank of the Sacramento River, opposite and approximately ½ mile from the river edge of the proposed Project Area.

The California Scenic Highway Program, maintained by Caltrans, protects scenic highway corridors from changes which would diminish the aesthetic value of lands adjacent to highways. Officially designated scenic highways must have a scenic corridor protection program or its equivalent, adopted by the local jurisdiction, consisting of ordinances that preserve the scenic quality of the corridor. A corridor protection program addresses land use, development density, earthmoving, landscaping, building design, and controls outdoor advertising, including billboards.

7.3 IMPACTS AND MITIGATION MEASURES

7.3.1 Significance Criteria

Based on the CEQA Guidelines¹, the Project would be considered to have a significant impact related to aesthetics and community design if it would:

- (a) Substantially degrade the existing visual character or quality of the site and its surroundings;
- (b) Have a substantial, adverse effect on a scenic vista;
- (c) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway; or
- (d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area

7.3.2 Impacts and Mitigations

Impact 7-1: Visual Character and Quality. Redevelopment projects and development facilitated by the proposed Redevelopment Plan would improve the visual quality of the proposed Project Area by eliminating the existing blighting conditions and dilapidated character. The visual character of the site would be changed to a more developed condition, with a more suburban character and more contemporary architectural styles. However, if not sensitively and creatively designed, development facilitated by the Project could result in a loss of the unique visual character and “sense of place” of the proposed Project Area created by the combination of the adjacent Sacramento River and nearby Montezuma Hills and the historic waterfront complex of structures and mature trees, and thereby substantially degrade visual character and quality, adversely affect community character and conflict with General Plan policies. These possible effects represent a **potentially significant impact** (see Criteria (a) and (b) under subsection 7.3.1, "Significance Criteria," above).

Explanation:

The proposed Project Area has a unique visual character and “sense of place” created by the combination of the adjacent Sacramento River and Montezuma Hills, the historic waterfront complex of buildings and structures, and the mature trees behind the historic buildings, along the line between the upper and lower terraces on the site. The cluster of historic buildings, built by the Army beginning as early as 1919 and associated with the construction of the Sacramento River Flood Control Project, though severely dilapidated, conveys a strong sense of time and place, and of Rio Vista’s river and Delta heritage. The tall mature trees are a prominent feature amid the grassy site and surroundings, and a fitting backdrop that adds scale and character to the historic cluster on the waterfront.

¹CEQA Guidelines, Appendix G, Items.

Mitigation 7-1. Project-facilitated development shall protect, incorporate and enhance the unique visual character and “sense of place” of the proposed Project Area created by the combination of the adjacent Sacramento River and Montezuma Hills, the historic waterfront complex of buildings and structures, and the mature trees. This shall be accomplished, in part though not exclusively, by either measure (a) or (b) below, as well as measures (c), (d) and (e):

(a) Implement alternative Mitigation Measure 6-2(a) to rehabilitate and reuse the contributing buildings, structures and setting of the proposed U.S. Engineer Storehouse Historic District in a manner that fully adheres to the Secretary of the Interior’s Standards for the Rehabilitation of Historic Properties, so as to preserve its continued eligibility to the California Register of Historic Resources;

or

(b) If alternative Mitigation Measure 6-2(a) is determined by the City to be infeasible, notwithstanding a significant and unavoidable impact related to historical resources, Project-facilitated development shall nonetheless still:

- (1) Retain and reuse the proposed historic district’s contributing buildings, structures and setting to the maximum feasible extent; and/or
- (2) Relocate contributing buildings or structures to another location compatible with their original use, character and setting, within the proposed Project Area; and/or
- (3) Through careful methods of planned deconstruction to avoid damage and loss, salvage character-defining features and materials for educational and interpretive use on-site or at the Rio Vista Museum, or for reuse in new construction on the site in a way that commemorates their original use and significance.

and

(c) Project-facilitated development shall maximize views of and connections to the river. The river shall inform the appearance and design of future development within the proposed Project Area.

(d) Implement Mitigation Measure 7-2 regarding maintenance of physical and visual public access to the Sacramento River.

(e) Preserve the existing healthy mature trees on the site, particularly the trees behind the historic waterfront complex, along the line between the upper and lower terraces on the site.

Implementation of measures (a) or (b), as well as (c), (d) and (e), would reduce the potential impact of the Project related to visual character and quality to a **less than significant level**.

Impact 7-2: Public Access to the River. The “Rio Vista Principles,” set forth in the City’s General Plan, state that new development should reinforce the characteristics that make Rio Vista unique, the Sacramento River should be showcased and enhanced, and the river should be made an accessible resource for the enjoyment of Rio Vista residents and the general public. Numerous General Plan goals and policies reinforce these basic General Plan principles.

The proposed Project Area presents a unique and irreplaceable opportunity to connect the city to its waterfront, to create a memorable place, to interpret and celebrate Rio Vista’s river and Delta heritage, and to enhance community character, identity and regional visibility. No specific development program or site layout is suggested as part of the proposed Redevelopment Plan. However, if not sensitively and creatively designed, development facilitated by the Project could block physical and visual public access to the Sacramento River, and thereby substantially degrade visual quality and community character, adversely affect scenic vistas, and conflict with General Plan policies. This possibility represents a **potentially significant impact** (see Criteria (a) and (b) under subsection 7.3.1, "Significance Criteria," above).

Explanation:

Project-facilitated development should maximize views of and connections to the river. The river should inform the appearance and design of future development within the proposed Project Area. The design of public access should create a “sense of place,” based on the site’s shoreline characteristics, historic waterfront features, scenic views, and connections to surrounding uses, compatible with the needs of wildlife.

A useful design resource that can be readily applied to development within the proposed Project Area to mitigate the potential impact of the Project related to visual access to the Sacramento River is contained in the San Francisco Bay Conservation and Development Commission (BCDC) Public Access Design Guidelines for the San Francisco Bay. BCDC is charged with regulating filling and dredging in the nearby San Francisco Bay and Suisun Marsh, preserving the limited amount of Bay shoreline for high priority water-oriented uses, and regulating new development within the first 100 feet inland from the Bay shoreline to ensure maximum feasible public access to the Bay. The BCDC Public Access Design Guidelines provide advisory design suggestions aimed at enhancing shoreline access. The design guidelines are sufficiently general and flexible to be applied within the proposed Project Area, in addition to the City’s existing design policies and standards.

Mitigation 7-2. Development in the Project Area shall provide maximum feasible physical and visual public access to the Sacramento River, and adhere to the planning principles, public access objectives, and design guidelines contained in the San Francisco Bay Conservation and Development Commission Public Access Design Guidelines for the San Francisco Bay (San Francisco Bay Conservation and Development Commission, Shoreline Spaces, Public Access Design Guidelines for the San Francisco Bay, April 2005). With this mitigation measure, the potential impact of the Project related to visual access to the river would be ***less than significant***.

Impacts to Scenic Vistas. Development-facilitated by the Project would not block or degrade any additional scenic vistas, aside from views of the Sacramento River addressed by Mitigation Measure 7-2 above. The proposed Project Area is visible in distant views from the Highway 12 entryway to the city approximately one mile to the northeast, from State Route 160 on the opposite side of the Sacramento River, approximately ½ mile from the proposed Project Area, and from the adjacent reach of the Sacramento River itself. Waterfront portions of the site are visible from Sandy Beach Regional Park and the Point Waterfront Restaurant and adjacent RV park. The proposed Project Area is not a prominent or defining element of these views. Changes in the visual character of the proposed Project Area would not be substantial as viewed from these vantage points. The potential impact to scenic vistas would be ***less than significant***.

Mitigation. No significant impact has been identified; no mitigation is required.

Impacts to Scenic Highways. As indicated above, the proposed Project Area is visible in distant views from State Route 160 along the opposite, east side of the Sacramento River, approximately ½ mile away. State Route 160 is an officially designated State Scenic Highway. The two large warehouses, main ship repair shop, and water tower, as well as docked boats, are the most visible features. Although the proposed Project Area and these features in particular contribute to the character and quality of the scenic highway experience, they are not prominent defining elements of that experience. Changes in the visual character of the proposed Project Area would not be substantial as viewed from the scenic highway. The potential impact to scenic highways would therefore be ***less than significant***.

Mitigation. No significant impact has been identified; no mitigation is required.

Impact 7-3: Light, Glare and Sky Glow. Development facilitated by the proposed Redevelopment Plan would result in additional lighting and increased light emanating from the proposed Project Area. New sources of light would be installed as part of new buildings and site improvements to illuminate entries, parking areas, sidewalks and open spaces, for safety and security, and to highlight architectural features. High intensity lighting may be used for nighttime use of sports fields and outdoor courts. If not properly designed and controlled, such lighting could: (1) cause substantial spill light, glare and sky glow that may create a nuisance for adjacent residential properties; may adversely affect nighttime views and night sky access for visitors and campers at Sandy Beach Regional Park, travelers on the State Route 160 State Scenic Highway and the Highway 12 entryway to the community, residents of neighborhoods to the north, users of the Duck Island RV Park on the east side of the river; (2) result in degradation of the City-desired small-town community character; and (3) conflict with General Plan Policy 5.19.D. Spill light, glare and sky glow could also adversely affect nocturnal ecosystems in and around the proposed Project Area and the adjacent river. These possible light, glare and sky glow effects represent a **potentially significant impact** (see Criterion [d] under subsection 7.3.1, "Significance Criteria," above).

Mitigation 7-3. Future lighting within the proposed Project Area shall conform to the Model Lighting Ordinance of the International Dark Sky Association and the Illuminating Engineering Society of North America. Implementation of this measure would reduce light, glare and sky glow impacts of the Project to a **less than significant level**.

Impact 7-4: Obtrusive Sports Field Lighting. Proposed redevelopment activities within the Project Area include the potential development of four baseball fields, three soccer fields, four tennis courts and outdoor basketball courts, consistent with the City's General Plan and the Parks Master Plan. There are several types of sports lighting fixtures available that would produce the required light levels for these facilities. However, less refined lighting optics or improper installation could cause spill light, glare or sky glow. As a result, nighttime sports field lighting could create a nuisance for adjacent residential properties, and adversely affect nighttime views, night sky access, and community character. These possible effects represent a **potentially significant impact** (see Criterion (d) under subsection 7.3.1, "Significance Criteria," above).

Explanation:

Light is measured in foot candles, which indicate the amount of luminance falling onto a surface. The following is a range of typical light levels expressed in foot candles.

Luminance

<u>Light Source</u>	<u>(Foot Candles)</u>
Bright and sunny day	3,000
Office	50 to 75
Main road junction street lighting	2.5 to 3
Professional baseball field lighting	300
Residential lighting at night	7 to 10
Bright moonlight	0.1

Nighttime sports field lighting has the potential to create spill light and glare impacts on adjacent residential properties near the northwest and southwest corners of the proposed Project Area. Single family homes are considered to be the most sensitive receptors for spill light and glare. The contrast between sports field lighting and ambient lighting could be considered obtrusive.

Nighttime sports field lighting could also adversely affect nighttime views and night sky access for visitors and campers at Sandy Beach Regional Park, for travelers on the Highway 160 State Scenic Highway and the Highway 12 entryway to the community, and for residents of neighborhoods to the north and the Duck Island RV Park on the east side of the river, and could result in degradation of the desired small-town community character and contrast between urban and rural areas. Nighttime sports field lighting could also adversely affect nocturnal ecosystems in and around the proposed Project Area and the adjacent river.

Mitigation 7-4: As required by Mitigation 7-3, lighting design within the proposed Project Area shall conform to the Model Lighting Ordinance of the International Dark Sky Association and the Illuminating Engineering Society of North America. The design of lighting systems for sports fields and courts shall achieve adequate control of spill light, glare and sky glow. Luminaire mounting height and optical system shall adequately limit the amount of light visible from the nearest residential property lines, the regional park, the river and other sensitive areas off-site, and avoid illumination above the level of the lights. The final design details for any illuminated sports fields shall include a *community playfield lighting plan* which specifies playfield lighting fixture locations and designs that only illuminate the field or court area with a sharp cut-off at the field perimeter. Light fixtures shall be selected that have total light control (i.e., fixtures that have internal optics that redirect wasted spill light downwards and are fitted with a non-reflective visor). Post-construction adjustments of the lighting system shall be performed to ensure that installed conditions meet design criteria.

With implementation of these measures, the potential nuisance impact from sports field lighting would be ***less than significant***.

8. TRANSPORTATION AND CIRCULATION

This chapter describes existing conditions and policies related to transportation, evaluates the short- and long-term impacts of the Project on transportation, and identifies transportation system improvements needed to mitigate the impacts of the Project. The analysis methodology is described first.

8.1 METHODOLOGY

8.1.1 Roadway System

Traffic operations on study roadway segments and at study intersections were analyzed in accordance with nationally accepted analysis methods. The following summarizes the methodologies used for study roadway segments and intersections.

(a) Roadway Segments and Intersections Studied. The following local roadway segments and intersections were evaluated:

(1) Roadway Segments:

- SR 12--west of SR 113 to east of SR 160
- SR 160--north of SR 12 to south of SR 12
- Main Street--SR 12 to Front Street
- Front Street--Main Street to SR 12
- 2nd Street--Main Street to Beach Drive
- Montezuma Hills Road--South of Beach Drive
- Beach Drive--2nd Street to end

(2) Intersections:

- SR 12/Main Street--Hillside Terrace
- SR 12/N. 5th Street
- SR 12/Front Street
- SR 12/ River Road (SR 84)
- Beach Drive/2nd Street
- Main Street/N. 5th Street
- Main Street/N. 2nd Street
- Main Street/Front Street

(b) Roadway Segments. Roadway segments were analyzed by comparing the average daily traffic volume to daily traffic volume thresholds that were developed based on information presented in the Highway Capacity Manual (1998). Table 8.1 displays the daily volume thresholds for various facility types. These thresholds are used as a guide to identify the need for new or upgraded facilities based on daily traffic volumes.

Table 8.1
LEVEL OF SERVICE CRITERIA--ROADWAYS

Facility Type	Number of Lanes	Daily Volume Threshold				
		LOS ⁷ A	LOS B	LOS C	LOS D	LOS E
Residential	2	600	1,200	2,000	3,000	4,500
Residential Collector with driveways	2	1,600	3,200	4,800	6,400	8,000
Residential Collector without driveways	2	6,000	7,200	8,000	9,000	10,000
Arterial – Low Access Control ¹	2	9,000	10,500	12,000	13,500	15,000
	4	18,000	21,000	24,000	27,000	30,000
	6	27,000	31,500	36,000	40,500	45,000
Arterial – Moderate Access Control ²	2	10,800	12,600	14,400	16,200	18,000
	4	21,600	25,200	28,800	32,400	36,000
	6	32,400	37,800	43,200	48,600	54,000
Arterial – High Access Control ³	2	12,000	14,000	16,000	18,000	20,000
	4	24,000	28,000	32,000	36,000	40,000
	6	36,000	42,000	48,000	54,000	60,000
Rural 2-lane roadway, paved shoulders ⁴	2	2,200	4,300	7,100	12,200	20,000
Rural 2-lane roadway, no shoulders ⁵	2	1,800	3,600	5,900	10,100	17,000
Rural 2-lane highway ⁶	2	2,400	4,800	7,900	13,500	22,900

Notes: ¹ Low access control roads generally have frequent driveways and speeds of 25 to 35 mph.
² Medium access control roads generally have limited driveways and speeds of 35 to 45 mph.
³ High access control roads generally have no driveways and speeds of 45 to 55 mph.
⁴ Assumed to consist of 24'-36' of pavement with paved shoulders.
⁵ Assumed to consist of 24'-36' of pavement with no paved shoulders.
⁶ Assumed to consist of 12-foot lanes, 6-foot shoulders, and 60 mph design speed.
⁷ LOS = Level of Service

Source: *Highway Capacity Manual* and Fehr & Peers, 2010.

(c) Signalized Intersections. Procedures and methodologies contained in the *Highway Capacity Manual 2000* (HCM 2000)¹, were used to evaluate signalized intersection operations. Table 8.2 describes the LOS criteria from HCM 2000 for signalized intersections.

(d) Unsignalized Intersections. Intersections controlled by stop signs on the minor street approaches (two-way stop control) and on all four approaches (all-way stop control) were analyzed using the procedures and methodologies described in the HCM 2000. This methodology computes the intersection LOS based on the control delay for each minor movement for minor-street/stop-controlled intersections and the weighted average of control delay for all approaches for all-way/stop-controlled intersections. Table 8.3 shows the LOS criteria at stop sign-controlled intersections.

8.2 EXISTING CONDITIONS

The existing transportation system in the project site vicinity depends heavily on the roadway system for the movement of people and goods. Automobiles are the primary travel mode for most trips in this area, although Delta Breeze provides limited transit service. To a lesser degree, the area is served by bicycle and pedestrian facilities. This section discusses each of the potentially affected travel modes.

8.2.1 Roadway Network

Figure 8.1 shows the existing number of lanes on study area roadways. Study area roadways are generally two-lane facilities and have speed limits from 25 to 55 miles per hour. Several study roadway segments are considered rural roadways with 24 to 36 feet of pavement and paved shoulders and generally have a rural character.

(a) Existing Traffic Volumes. Fehr & Peers conducted daily roadway segment and AM and PM peak hour intersection turning movement counts in June 2006 and January 2010. Figure 8.2 shows the study roadway segments and intersections, Figure 8.3 shows existing daily roadway segment traffic volumes, and Figure 8.4 shows existing AM and PM peak hour intersection turning movement volumes.

(b) Existing Traffic Operations.

(1) *Roadway Segments.* Table 8.4 summarizes study roadway segment operations. Following is a list of existing study roadway segments that operate at an unacceptable LOS (LOS E or worse).

- SR 12--Summerset Drive to Main Street (LOS F)
- SR 12--Main Street to 5th Street (LOS F)
- SR 12--5th Street to SR 84 (Front Street) (LOS F)
- SR 12--SR 84 to SR 160 (LOS F)

¹Transportation Research Board 2000, Highway Capacity Manual 2000.

Table 8.2
 LEVEL OF SERVICE CRITERIA--SIGNALIZED INTERSECTIONS

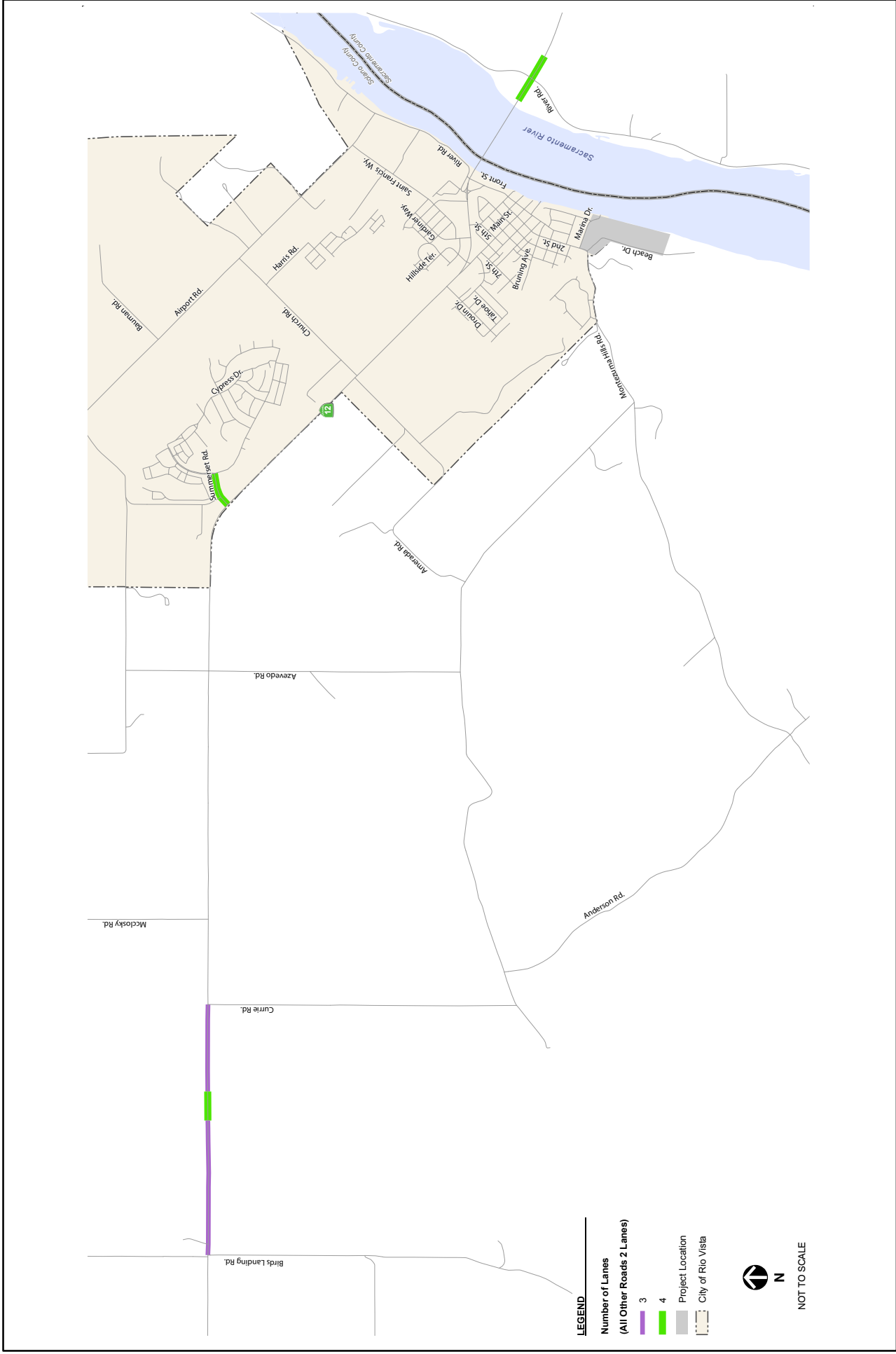
LOS	Description	Average Control Delay [seconds/vehicle]
A	Operations with very low delay occurring with favorable progression and/or short cycle length.	≤ 10
B	Operations with low delay occurring with good progression and/or short cycle lengths.	> 10 to 20
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	> 20 to 35
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high volume-to-capacity ratios. Many vehicles stop and individual cycle failures are noticeable.	> 35 to 55
E	Operations with high delay values indicating poor progression, long cycle lengths, and high volume-to-capacity ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	> 55 to 80
F	Operation with delays unacceptable to most drivers occurring due to over saturation, poor progression, or very long cycle lengths.	> 80

Source: *Highway Capacity Manual* (Transportation Research Board, 2000).

Table 8.3
 LEVEL OF SERVICE CRITERIA--UNSIGNALIZED INTERSECTIONS

LOS	Average Control Delay [seconds/vehicle]
A	≤ 10
B	> 10 and ≤ 15
C	> 15 and ≤ 25
D	> 25 and ≤ 35
E	> 35 and ≤ 50
F	> 50

Source: *Highway Capacity Manual* (Transportation Research Board, 2000).



SOURCE: Fehr & Peers

Figure 8.1

EXISTING ROADWAY SYSTEM

Wagstaff/MIG ■ Urban and Environmental Planners

Rio Vista Army Reserve Center Redevelopment Plan EIR

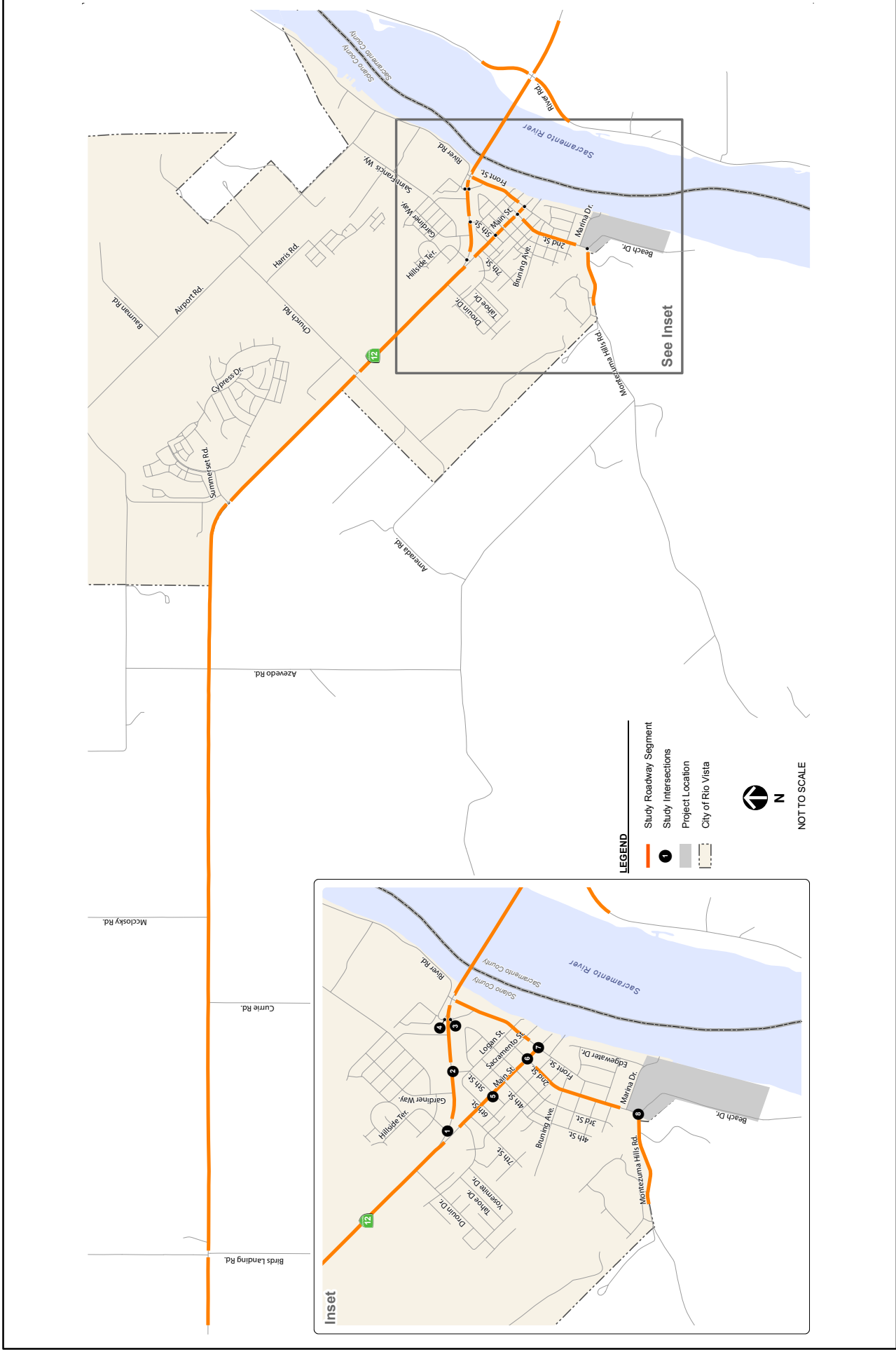


Figure 8.2

SOURCE: Fehr & Peers

STUDY ROADWAY SEGMENTS AND INTERSECTIONS

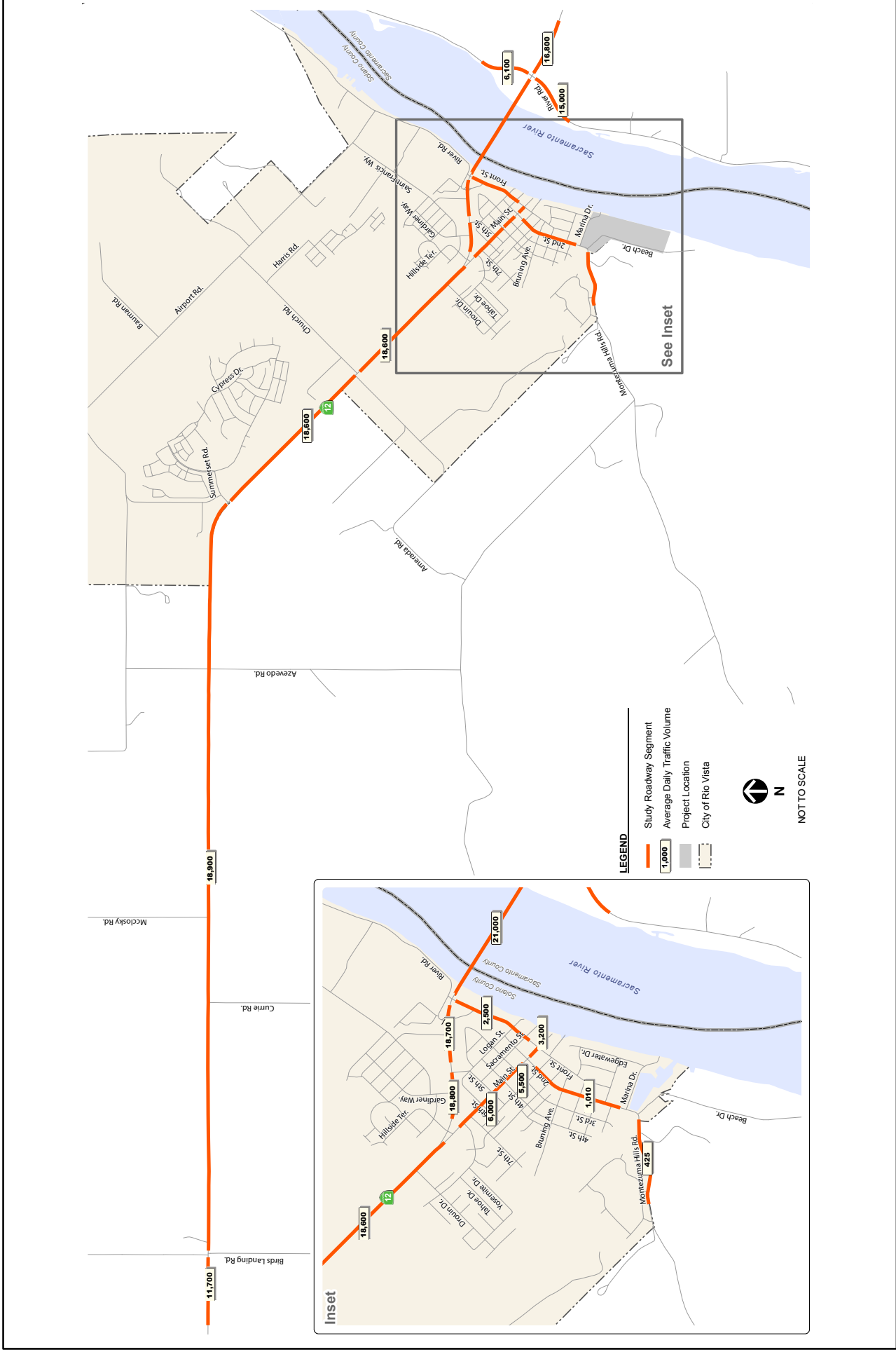
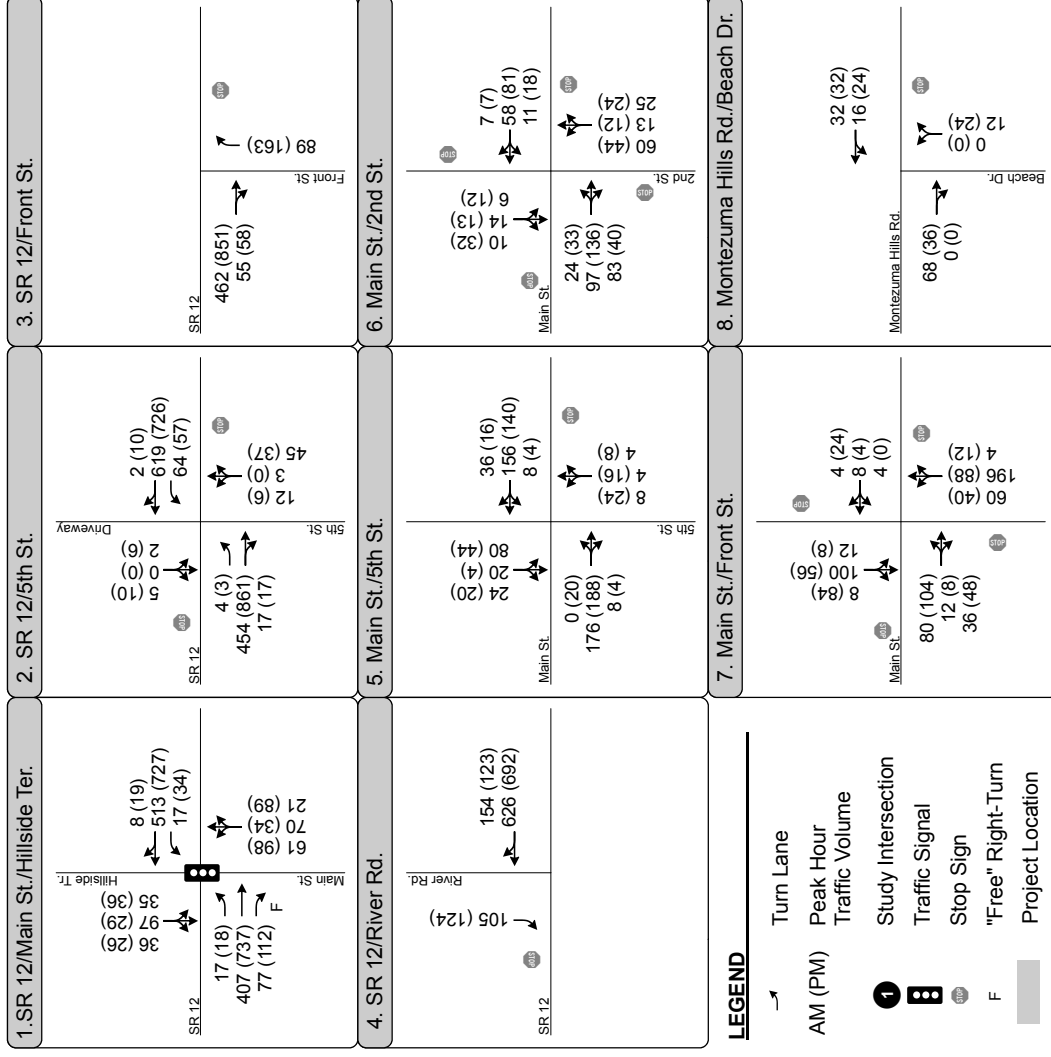
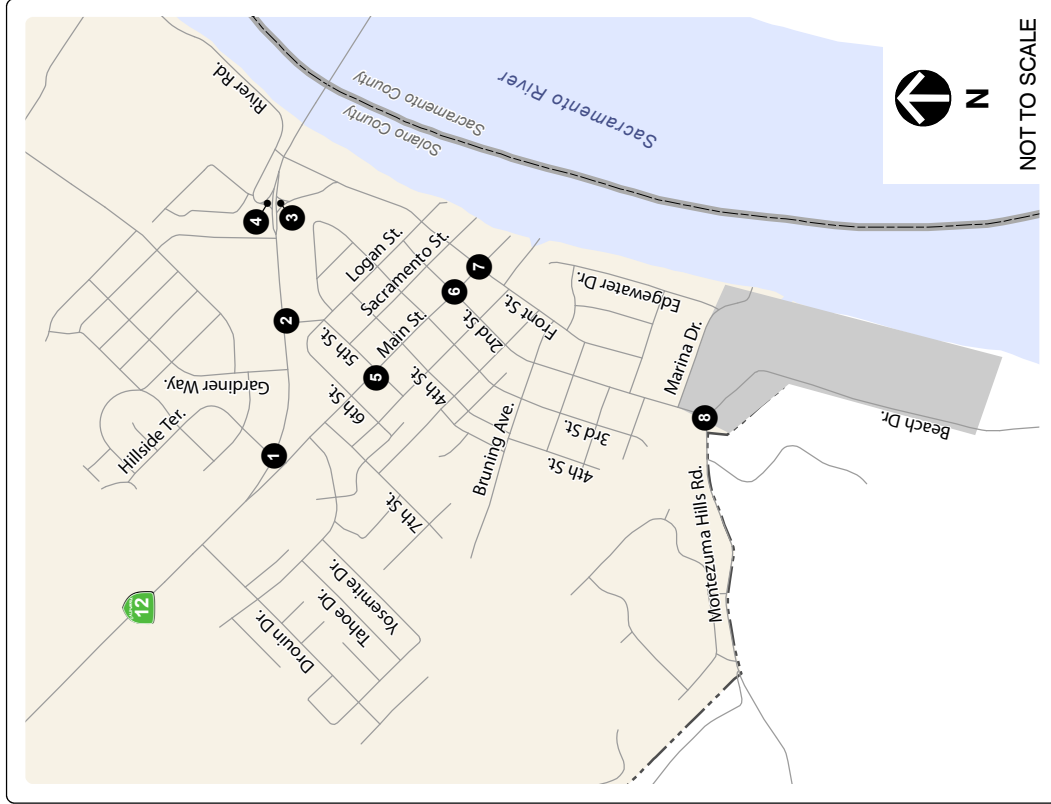


Figure 8.3
**AVERAGE DAILY TRAFFIC VOLUMES -
 EXISTING CONDITIONS**

SOURCE: Fehr & Peers



LEGEND

- Turn Lane
- Peak Hour Traffic Volume
- Study Intersection
- Traffic Signal
- Stop Sign
- "Free" Right-Turn
- Project Location

SOURCE: Fehr & Peers

Figure 8.4
PEAK HOUR TRAFFIC VOLUMES AND LANE CONFIGURATIONS - EXISTING CONDITIONS

Table 8.4
 ROADWAY LEVEL OF SERVICE--EXISTING CONDITIONS

Roadway Segment	Existing Conditions				
	Lanes	Type	Vol	V/C	LOS
1. SR 12 – West of SR 113	2	Rural Hwy ³	11,700	0.51	D
2. SR12 – SR 113 to Summerset Dr.	2	Arterial ¹	18,900	0.95	E
3. SR 12 – Summerset Dr. to Main St.	2	Arterial ¹	18,600	1.03	F
4. SR 12 – Main St. to 5 th St.	2	Arterial ²	18,800	1.04	F
5. SR 12 – 5 th St. to SR 84	2	Arterial ²	18,700	1.04	F
6. SR 12 – SR 84 to SR 160	2	Arterial ¹	21,000	1.05	F
7. SR 12 – East of SR 160	2	Rural Hwy ³	16,800	0.73	E
8. SR 160 – North of SR 12	2	Arterial ⁵	6,100	0.31	C
9. SR 160 – South of SR 12	2	Rural Hwy ³	15,000	0.66	E
10. Main St. – SR 12 to 5 th St.	2	Collector ⁴	6,000	0.65	D
11. Main St. – 5 th St. to 2 nd St.	2	Collector ⁴	5,500	0.69	D
12. Main St. – 2 nd St. to Front St.	2	Collector ⁴	3,200	0.40	B
13. 2 nd St. – Beach Dr. to Main St.	2	Collector ⁴	1,010	0.13	A
14. Front St. – Main St. to SR 12	2	Collector ⁴	2,500	0.31	B
15. Montezuma Hills Rd. – South of Beach Dr.	2	Collector ⁴	425	0.05	A

Notes: Shaded areas indicate unacceptable operations.
 All arterial roadway segments assumed to have moderate access control except for Segments 1, 2, and 6, which were assumed to have high access control.
 1 = 2-lane high access controlled arterial (see Table 1)
 2 = 2-lane moderate access controlled arterial
 3 = Rural 2-lane highway
 4 = Residential collector with driveways
 5 = Rural Road no shoulders
 Source: Fehr & Peers, 2010.

(2) *Study Intersections.* The existing AM and PM peak hour intersection turning movement volumes and lane configurations shown on Figure 8.4 were used to calculate levels of service at the study intersections based on the methodology presented at the beginning of this chapter. Table 8.5 presents LOS for each study intersection. As shown in Table 8.5, the intersection of SR 12/N. 5th Street operates unacceptably (at LOS E) during the PM peak hour.

Unsignalized intersections were evaluated using the peak hour volume warrant (Warrant 11) published in the California Department of Transportation's *Traffic Manual* (1996) to determine if signal control is warranted under existing conditions.¹ The intersection of SR 12/N. 5th Street does not meet the Caltrans peak hour signal warrant.

8.2.2 Transit System

In Rio Vista, transit service is provided by Delta Breeze. Delta Breeze provides deviated fixed route service and a Senior Shuttle. The deviated fixed route service, commonly known as "dial-a-ride" service, responds to individual calls for service and connects Rio Vista with Suisun City-Fairfield, Antioch, and Lodi-Stockton (with transfers). The Senior Shuttle provides door-to-door service to Antioch, Fairfield, and Lodi for seniors on Wednesdays.

8.2.3 Bicycle and Pedestrian Facilities

Pedestrian and bicycle facilities are limited in the proposed project vicinity and generally exist only along improved frontages (streets with curbs, gutters, and sidewalks). The Solano Countywide Bicycle Plan designates Class 2 (on-street) bicycle routes on SR 12 and Airport Road. Figure 8.5 shows the location of bicycle facilities (on-street and off-street) designated in the City of Rio Vista General Plan and Solano Countywide Bicycle Plan.

8.3 PERTINENT PLANS AND POLICIES

8.3.1 California Department of Transportation

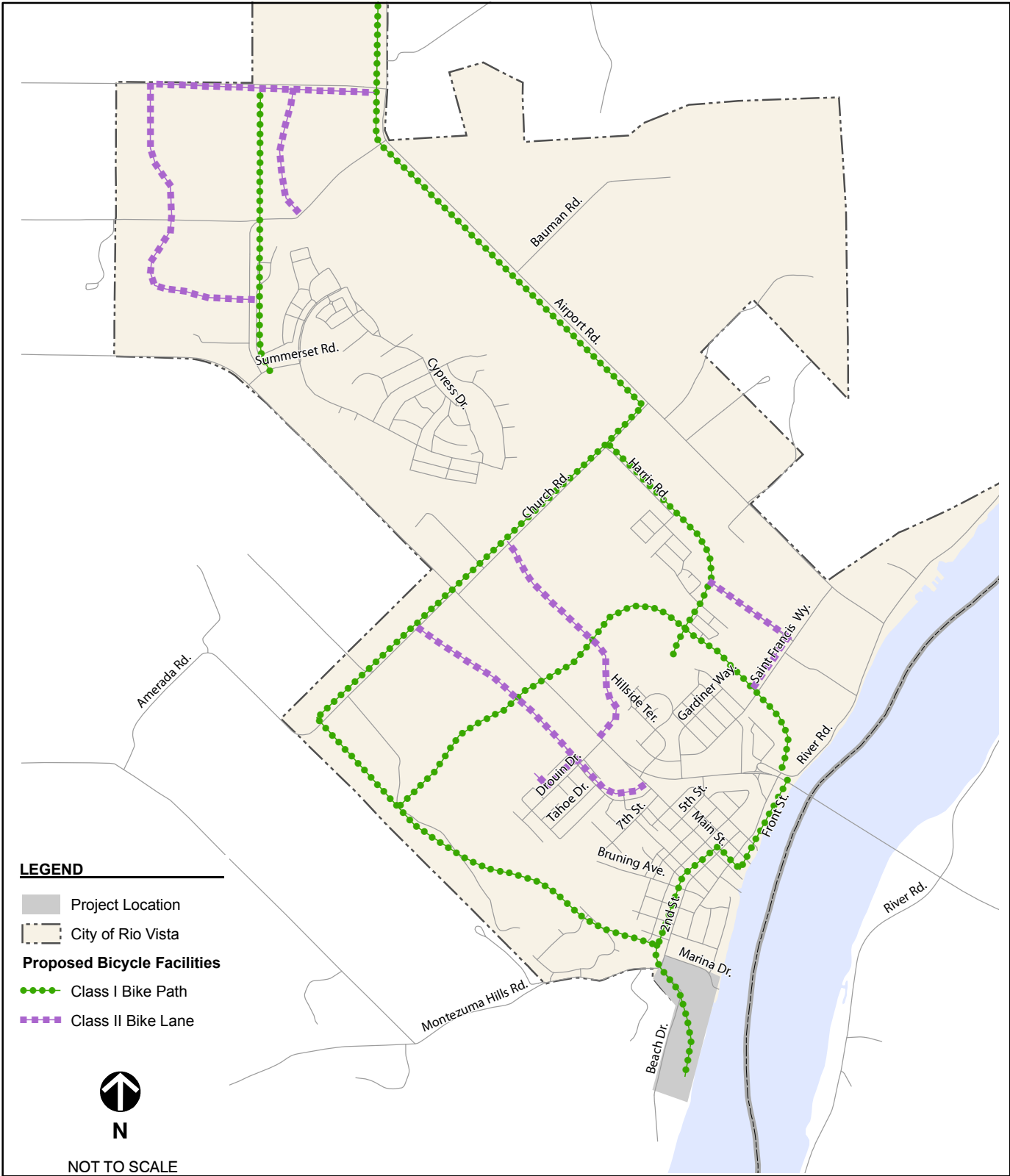
The California Department of Transportation (Caltrans) Guide for Preparation of Traffic Impact Studies was used for the significance criteria applied to Caltrans facilities.

¹This analysis is intended to examine the general correlation between the planned level of future development and the need to install new traffic signals. It estimates future development-generated traffic compared against a subset of the standard traffic signal warrants recommended in the Federal Highway Administration *Manual on Uniform Traffic Control Devices* and associated State guidelines. This analysis should not serve as the only basis for deciding whether and when to install a signal. To reach such a decision, the full set of warrants should be investigated based on field-measured, rather than forecast, traffic data and a thorough study of traffic and roadway conditions by an experienced engineer. Furthermore, the decision to install a signal should not be based solely upon the warrants, since the installation of signals can lead to certain types of collisions. To prioritize and program intersections for signalization, regularly monitor actual traffic conditions and accident data, and provide a timely reevaluation of the full set of warrants.

Table 8.5
INTERSECTION LEVEL OF SERVICE--EXISTING CONDITIONS

Intersection	Control	AM Peak		PM Peak	
		V/C or Delay	LOS	V/C or Delay	LOS
SR 12/Main St. – Hillside Terrace	Signal	18	B	17	B
SR 12/N. 5 th St.	TWSC	18	C	46	E
SR 12 (westbound)/SR 84	TWSC	17	C	19	C
SR 12 (eastbound)/Front St.	TWSC	13	B	28	D
Main St./N. 5 th St.	TWSC	13	B	12	B
Main St./N. 2 nd St.	TWSC	8	A	9	A
Main St./Front St.	4WSC	9	A	8	A
2 nd St./Beach Dr.	TWSC	9	A	9	A

Notes: Signal Control – HCM 2000 Methodology – Results present average delay and LOS
 TWSC = 2-Way Stop Control – HCM 2000 Methodology – Results present delay and LOS for worst minor-street movement
 4WSC = 4-Way Stop Control – HCM 2000 Methodology – Results present average delay and LOS
 Shaded areas indicate unacceptable operations.
 Source: Fehr & Peers, 2010.



SOURCE: Fehr & Peers

Figure 8.5

PROPOSED BICYCLE FACILITIES

8.3.2 Solano Transportation Authority

(a) LOS Objective. The Solano Transportation Authority (STA) is the Congestion Management Agency of Solano County. It is responsible for countywide transportation planning, financing of priority projects, and programming of federal, state, and regional transportation funds. One of the objectives in STA's *Arterials, Highways, and Freeway Element* (2002) is to encourage member jurisdictions and Caltrans to maintain LOS E or better conditions during the a.m. and p.m. peak hours on roadways of countywide significance.

(b) SR 12 East Prioritization and Implementation Strategy. In 2005, STA prepared the SR 12 East Prioritization and Implementation Strategy in order to address needed roadway improvements to SR 12 between the Sacramento River and I-80. Initially the Highway 12 Major Investment Study (MIS), prepared in October 2001 recommended widening SR 12 in Rio Vista to four lanes with other safety and intersection improvements by 2025. The SR 12 East Prioritization and Implementation Strategy refined the roadway improvement timeline recommending the commencement of road widening by 2017. The STA Board adopted a funding policy for those improvements that would split the cost to 50 percent local and 50 percent regional.

8.3.3 Rio Vista General Plan

The following goals and policies of the Rio Vista General Plan are relevant to transportation and the Project:

- *To provide a mix of land uses close to each other and at sufficient intensities to support walking, bicycling, and other alternative modes of transportation. (Goal 8.1)*
- *The City shall require sidewalks on public streets in all new developments, as shown in Figures 8-6 through 8-11. (Policy 8.1.E)*
- *The City shall ensure that individual properties or development sites are not viewed as self-contained islands. (Policy 8.1.G)*
- *To build and maintain a safe and efficient local street and highway system. (Goal 8.2)*
- *The City shall ensure that future development and roadway capacities are in balance. (Policy 8.2.B)*
- *The City shall ensure that new and upgraded arterial streets and their intersections are designed and built to function at least at level of service (LOS) "D," (acceptable delay) during peak traffic periods. (Policy 8.2.C)*
- *The City shall maintain a level of service (LOS) "D" as the target LOS for all major street intersections not specified as LOS "E" by Policies 8.2.F and 8.2.G. (Policy 8.2.D)*
- *The City shall maintain a level of service (LOS) "E" for the downtown, neighborhood commercial areas, and other areas where vitality, pedestrian activity, and transit accessibility are or will be primary considerations as the community grows. (Policy 8.2.E)*
- *The City shall maintain a level of service (LOS) "E" for Main and Front Streets between Main Street and Highway 12. (Policy 8.2.F)*

- *The City shall ensure that new development is responsible for funding and construction of necessary improvements that are directly attributable to the impacts generated by that project. (Policy 8.2.I)*
- *The City shall require that new development projects mitigate their share of offsite traffic impacts (outside the boundaries of the specific development properties) in order to maintain the level of service standards of Policies 8.2.D, 8.2.E, 8.2.F, and 8.2.G. (Policy 8.2.J)*
- *The City shall ensure improvements are provided prior to the deterioration of levels of service below the standards of Policies 8.2.D, 8.2.E, 8.2.F, and 8.2.G. (Policy 8.2.K)*
- *The City shall require new development to provide signals or other improvements at appropriate intersections in a timely manner, to prevent the deterioration of service levels. (Policy 8.2.P)*
- *The City shall ensure that intersection improvements, including signals, are provided prior to meeting any necessary Caltrans warrants, to prevent deterioration of service levels. (Policy 8.2.R)*
- *To develop a comprehensive pedestrian and bicycle system over time that is coordinated with the city's roadway system. (Goal 8.3)*
- *The City shall provide a continuous system of sidewalks along streets. (Policy 8.3.A)*
- *The City shall complete the comprehensive pedestrian and bicycle systems, including off-street multipurpose paths and trails linking major new development areas with the waterfront. (Policy 8.3.B)*
- *The City shall develop pedestrian and bicycle paths in the trail corridor and along the waterfront. (Policy 8.3.C)*
- *The City shall separate bikeways from streets wherever possible. Where off-road bicycle paths are not possible, the City shall designate on-street bicycle lanes. (Policy 8.3.E)*
- *The City shall require nonresidential developments to build clearly identified internal walkways that are distinct from roadways and directly connect building entrances to public sidewalks and transit stops. (Policy 8.3.G)*
- *The City shall ensure the provision of secure bicycle parking at centers of public and private activity. The City shall require new commercial development to provide bicycle parking. (Policy 8.3.M)*
- *To provide fast, convenient, comprehensive, and dependable transit and paratransit service as Rio Vista grows. (Goal 8.6)*
- *The City shall ensure that the physical design of new development projects facilitates transit use. (Policy 8.6.B)*

- *To reestablish Rio Vista's waterfront as a regional destination for both recreational and commercial water transportation activities. (Goal 8.8)*
- *The City shall provide for additional private boat berths, public access, and support facilities on the waterfront in order to allow residents of the City and region to enjoy water-oriented recreation, public transportation, and commercial opportunities on the Sacramento River. (Policy 8.8.A)*
- *The City shall use any eligible sources of local, state, and federal funding to accomplish the dredging, shoreline stabilization, public access, and construction of recreational facilities. (Policy 8.8.B)*

8.4 IMPACTS AND MITIGATION MEASURES

8.4.1 Significance Criteria

The Project would be considered to have a significant adverse impact related to transportation if it would:

- (a) Result in a roadway operating at an acceptable LOS (LOS D or better) to deteriorate to LOS E or worse (General Plan Policies 8.2.C, 8.2.F, and 8.2.G). In the downtown area, if a roadway operating at an acceptable LOS (LOS E or better) to deteriorate to LOS F.
- (b) Increase the volume-to-capacity (V/C) ratio by more than 0.05 at a roadway that is operating at LOS E or worse without the project.
- (c) Result in a signalized intersection or unsignalized intersection movement/approach operating at an acceptable LOS (LOS D or better) to deteriorate to LOS E or worse, or result in a signalized intersection or unsignalized intersection operating at an acceptable LOS (LOS E) or better to deteriorate to LOS F for intersections on Main Street and Front Street between Main Street and SR 12 (General Plan Policies 8.2.D, 8.2.F, and 8.2.G).
- (d) Increase the delay by more than five seconds at a signalized intersection or movement/approach at an unsignalized intersection that is operating at LOS E or worse without the project for an unsignalized intersection that meets a signal warrant, or increase the delay by more than five seconds at a signalized intersection or movement/approach at an unsignalized intersection that is operating at LOS F for intersections on Main Street and Front Street between Main Street and SR 12 (Regional Standard).
- (e) Eliminate or adversely affect existing transit facilities (bus stops, etc.).
- (f) Eliminate or adversely affect existing or planned transit operations.
- (g) Eliminate or adversely affect an existing bikeway or pedestrian facility in a way that would discourage its use.
- (h) Interfere with the implementation of a planned bikeway or pedestrian facility.
- (i) Result in unsafe conditions for bicyclists or pedestrians, including unsafe bicycle/pedestrian, bicycle/motor vehicle, or pedestrian/motor vehicle conflict.

8.4.2 Impact Assessment Methodology

(a) Traffic Volume Forecasting. This section summarizes the methodology used to develop traffic volume forecasts and presents daily roadway segment and AM and PM peak hour intersection turning movement forecasts for existing “plus project” conditions and cumulative (Year 2025) conditions without and with the proposed project. Traffic volume forecasts were developed for the following scenarios:

- Existing Plus Project Conditions--This scenario assumes build-out of the Rio Vista Army Reserve Center Redevelopment Plan.
- Cumulative (Year 2025) Conditions – This scenario assumes year 2025 levels of development regionally (consistent with the 2025 MTP) and build-out of the Riverwalk, Trilogy, Gibbs Ranch, Brann Ranch and Del Rio Hills developments.
- Cumulative (Year 2025) Plus Project Conditions – This scenario assumes the build-out of the Riverwalk, Trilogy, Gibbs Ranch, Brann Ranch and Del Rio Hills developments; build-out of the Rio Vista Army Reserve Center Redevelopment Plan; and year 2025 levels of development regionally (consistent with the 2025 MTP).

The traffic volume forecasts presented in this section were used to identify impacts to the roadway system under the scenarios identified above.

(b) Travel Demand Forecasting Methodology. Traffic volume forecasts for the scenarios listed above were developed using a combination of the Solano Transportation Authority (STA) Travel Demand Forecasting (TDF) model and a local transportation model (TRAFFIX™). In general, the forecasting methodology included the development of “through traffic” growth using the STA TDF model. The TRAFFIX model was used to assign traffic generated by development within the City of Rio Vista. Development assumptions included the Riverwalk, Trilogy, Gibbs Ranch, and Brann Ranch developments and the proposed project.

(1) Project Trip Generation. Table 8.6 presents project trip generation. The daily traffic volumes for each land use scenario were estimated using trip generation rates from *Trip Generation, 8th Edition*, Institute of Transportation Engineers, 2009.

(2) Project Trip Distribution. Vehicle trips generated by development encouraged by the proposed Redevelopment Plan would have direct access to Beach Drive and, via Beach Drive, to 2nd Street. Vehicles would also have access to central Rio Vista by way of Main Street and Front Street. Regional access would be via SR 12.

The trips generated by the land uses assumed to be encouraged by the proposed Redevelopment Plan were assigned to the roadway network, leading to the following trip distribution pattern.

- North on 2nd Street: 100%
- West on Main Street: 35%
- North on Front Street: 60%
- West on SR 12: 20%
- East on SR 12: 50%

Table 8.6
PROJECT TRIP GENERATION

Land Use	Daily Trip Generation Rates	Quantity	Trip Generation		
			Daily	AM Peak Hour	PM Peak Hour
Community Center	22.88 TE/KSF ^{1, 2}	21 KSF	480	34	30
Community Park	2.28 TE/Ac ³	12 Acres	20	1	1
Lodging	8.17 TE/Room	150 Rooms	1,226	68	89
Office	6.80 TE/KSF	55 KSF	374	85	82
Laboratories	6.97 TE/KSF	23 KSF	160	23	25
Warehouse/Store	10.53 TE/KSF	32 KSF	337	44	29
Total			2,606	255	256
Note: ¹ TE = Trip Ends ² KSF = 1,000 square feet ³ Ac = Acres Trip generation rate source: <i>Trip Generation, 8th Edition</i> , Institution of Transportation Engineers, 2008. Source: Fehr & Peers, 2010.					

Thirty-five percent of the project trips have a destination within Rio Vista. Sixty-five percent of the traffic has a destination outside of Rio Vista. Figure 7 shows the trip distribution pattern.

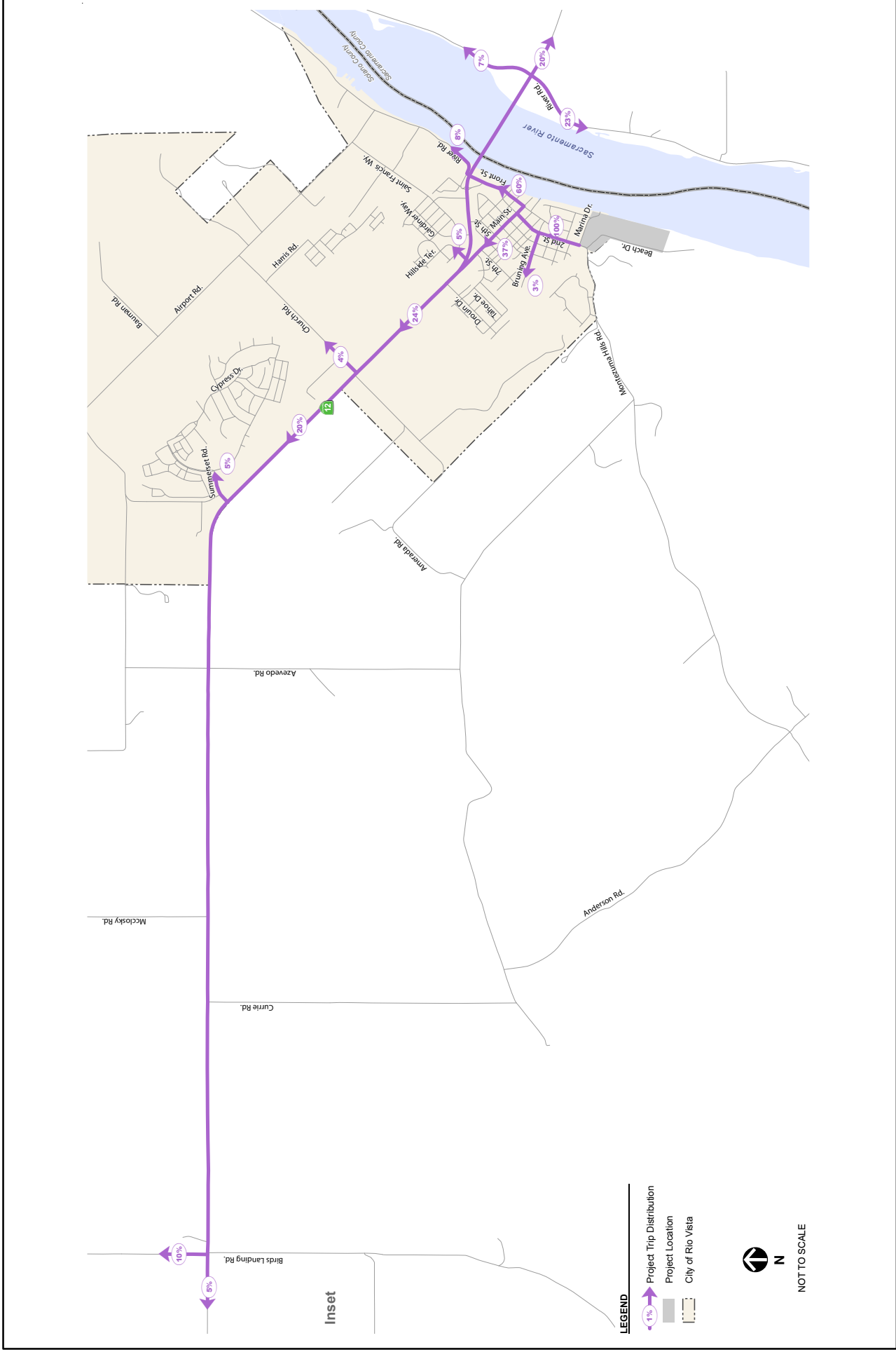
(3) *Project Traffic Assignment.* Project traffic was assigned to the City of Rio Vista roadway network using the TRAFFIX software and the distribution pattern shown above, which is presented in Figure 8.6.

(c) Traffic Volume Forecasts. Under existing plus project and cumulative (Year 2025) conditions, the through traffic volume forecasts were developed using the STA TDF model.

Figures 8.7 through 8.12 show the roadway segment and AM and PM peak hour turning movement forecasts for the project scenarios evaluated--i.e., Existing Plus Project Conditions, Cumulative (Year 2025) Conditions, and Cumulative (Year 2025) Plus Project Conditions:

(d) Planned Transportation Network Improvements. Improvements to SR 12 between the Sacramento River and I-80 have been identified in the Highway 12 Major Investment Study (MIS), October 2001. In Rio Vista, the MIS recommended widening SR 12 to four lanes with other safety and intersection improvements. The horizon year for the improvements was identified to be 2025.

The improvement timeline was refined in the SR 12 East Prioritization and Implementation Strategy, December 2005. This report identified that widening SR 12 to four lanes from River Road to the Rio Vista City Limit should commence by 2017. The STA Board adopted a funding policy for those improvements that would split the cost to 50 percent local and 50 percent regional.



SOURCE: Fehr & Peers

Figure 8.6

PROJECT TRIP DISTRIBUTION

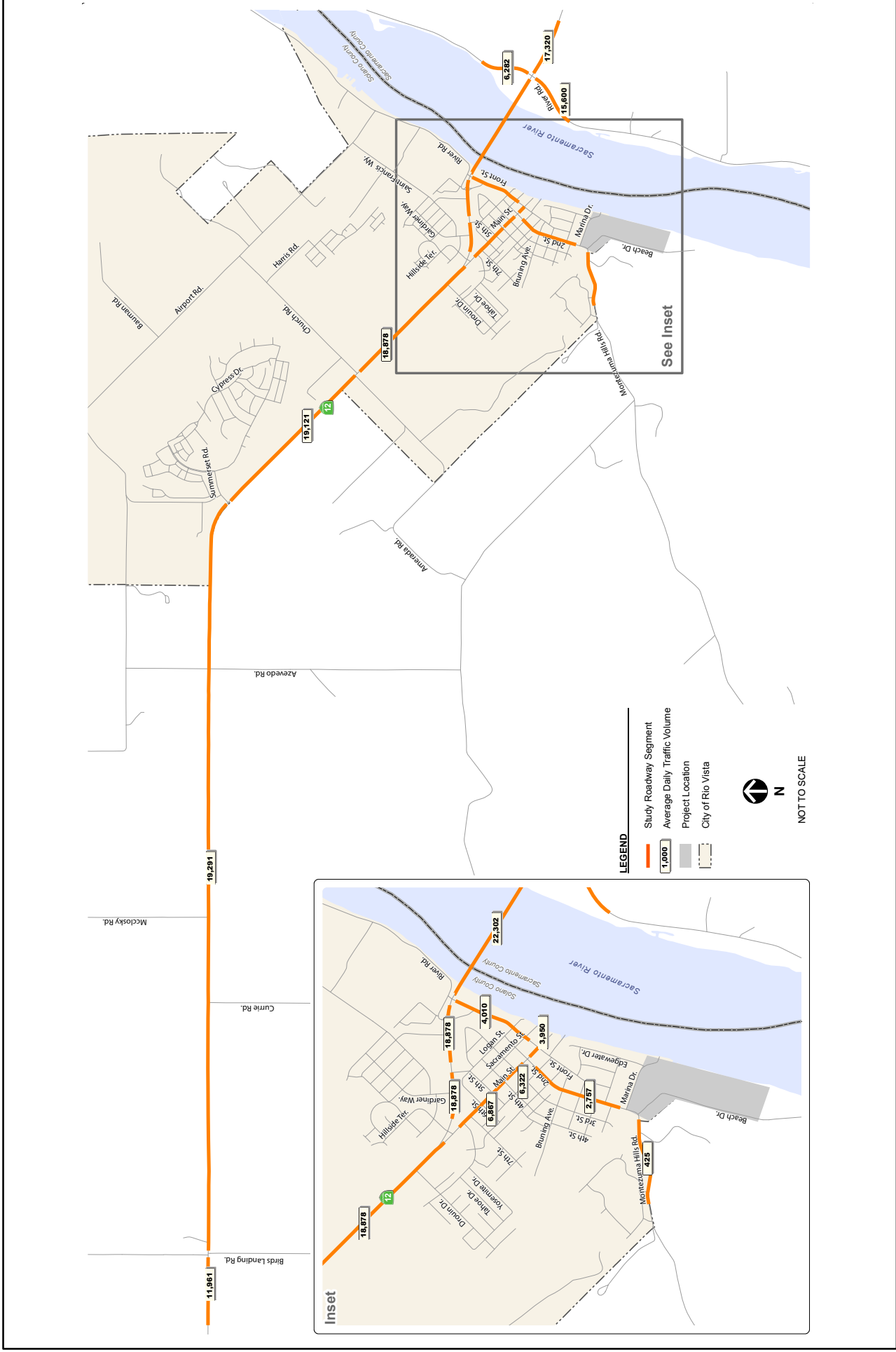
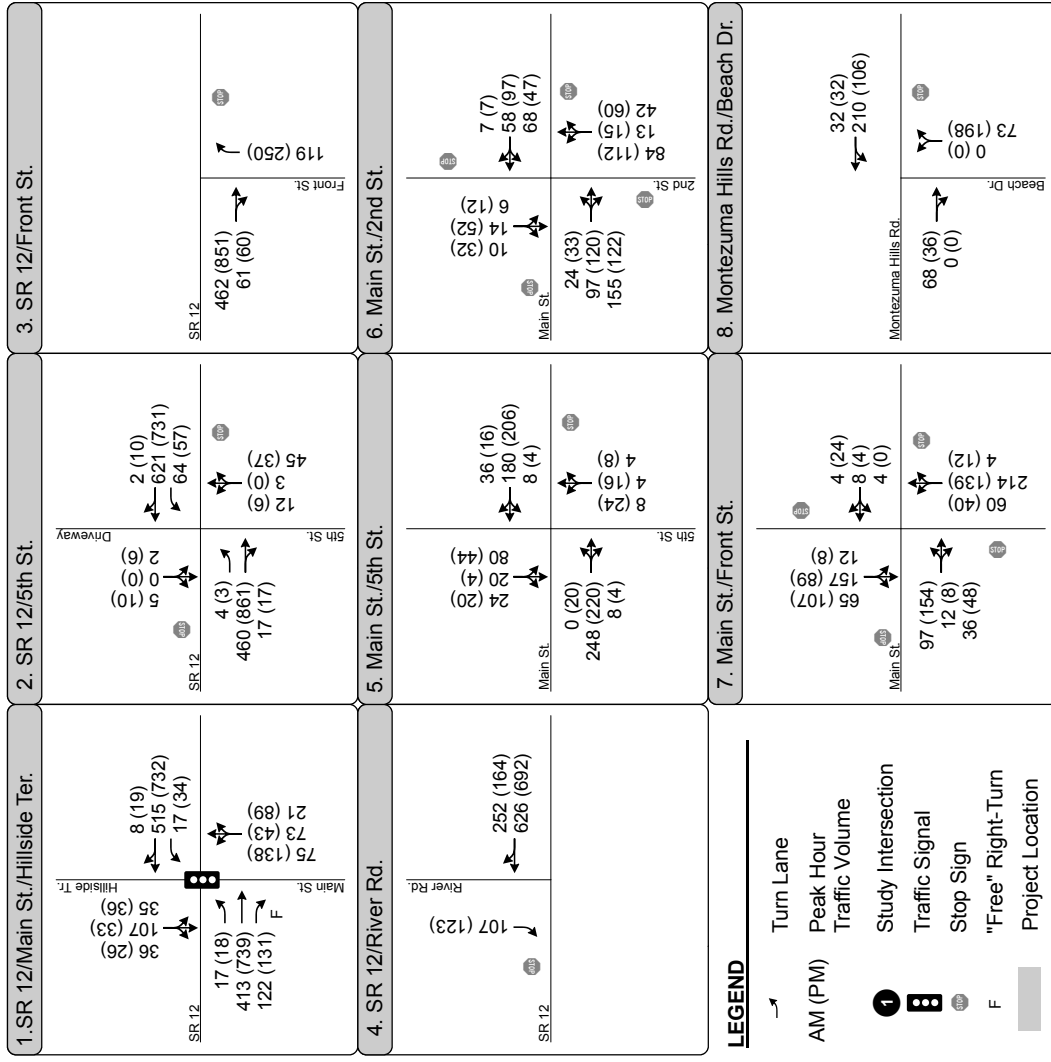
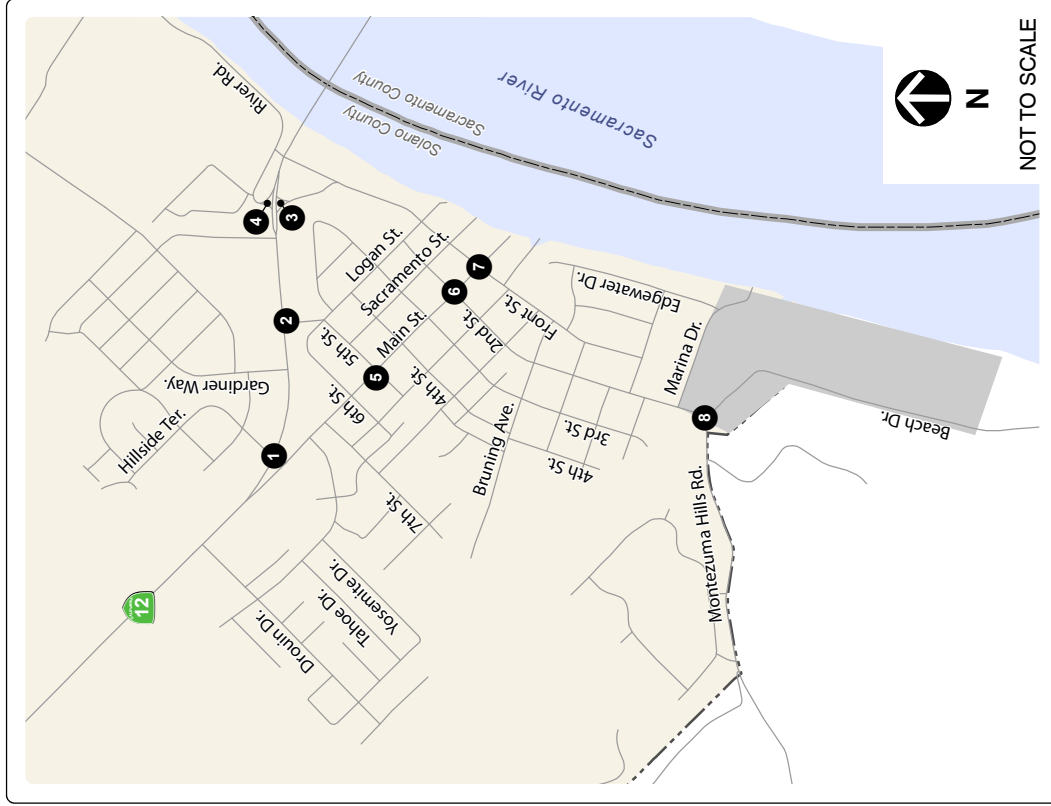


Figure 8.7
AVERAGE DAILY TRAFFIC VOLUMES - EXISTING PLUS PROJECT CONDITIONS

SOURCE: Fehr & Peers

Wagstaff/MIG ■ Urban and Environmental Planners

Rio Vista Army Reserve Center Redevelopment Plan EIR



LEGEND

- Turn Lane
- AM (PM) Peak Hour Traffic Volume
- 1 Study Intersection
- 2 Traffic Signal
- 3 Stop Sign
- F "Free" Right-Turn
- Project Location

SOURCE: Fehr & Peers

Figure 8.8
PEAK HOUR TRAFFIC VOLUMES AND LANE CONFIGURATIONS - EXISTING PLUS PROJECT CONDITIONS

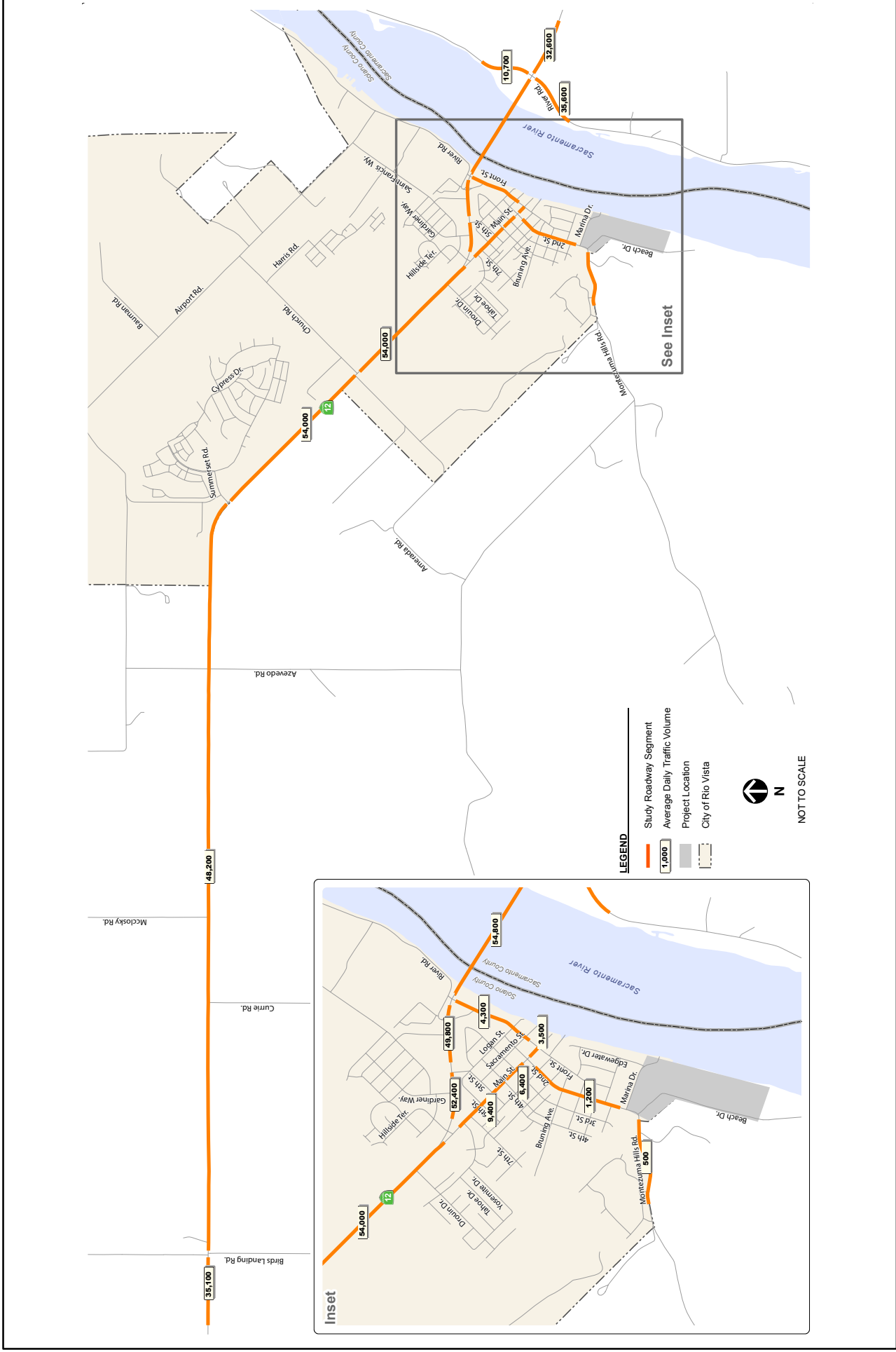
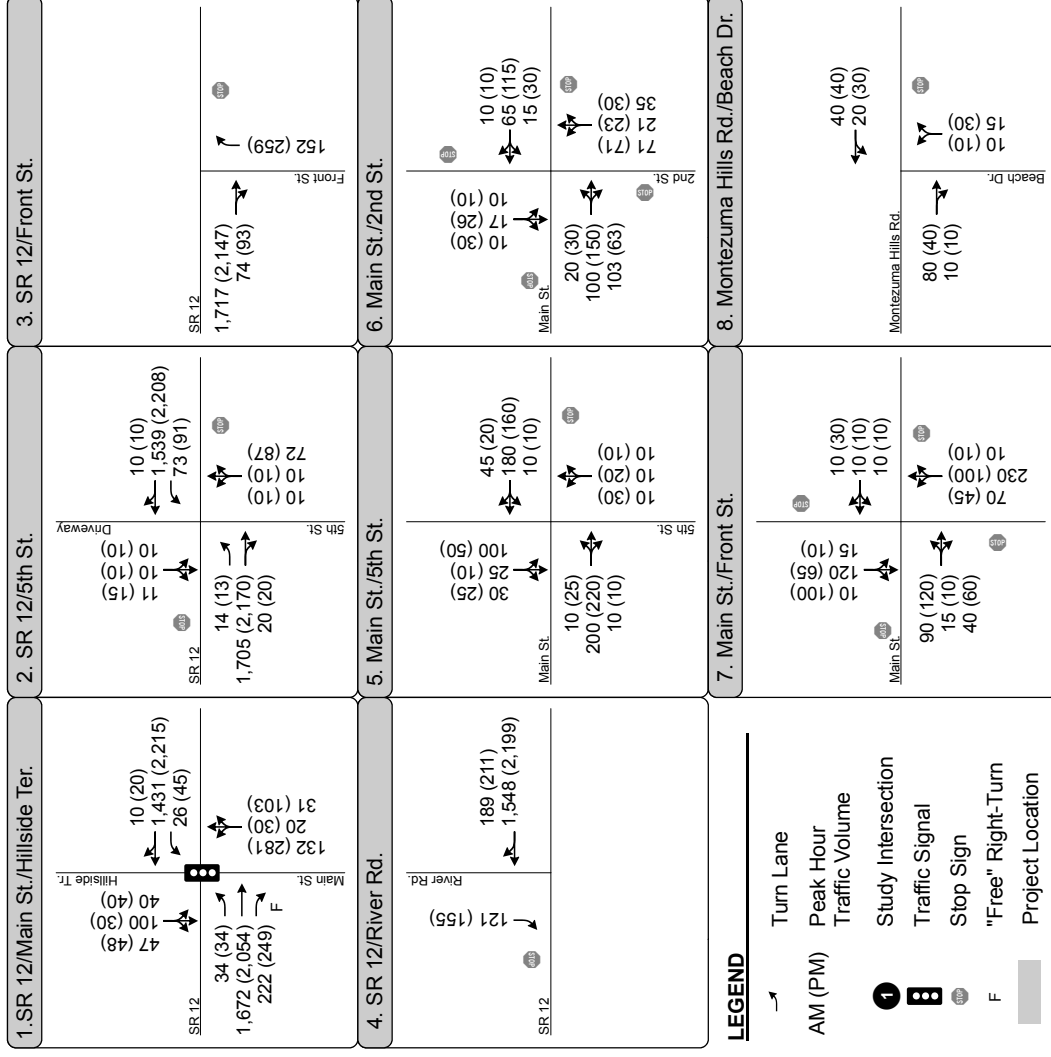
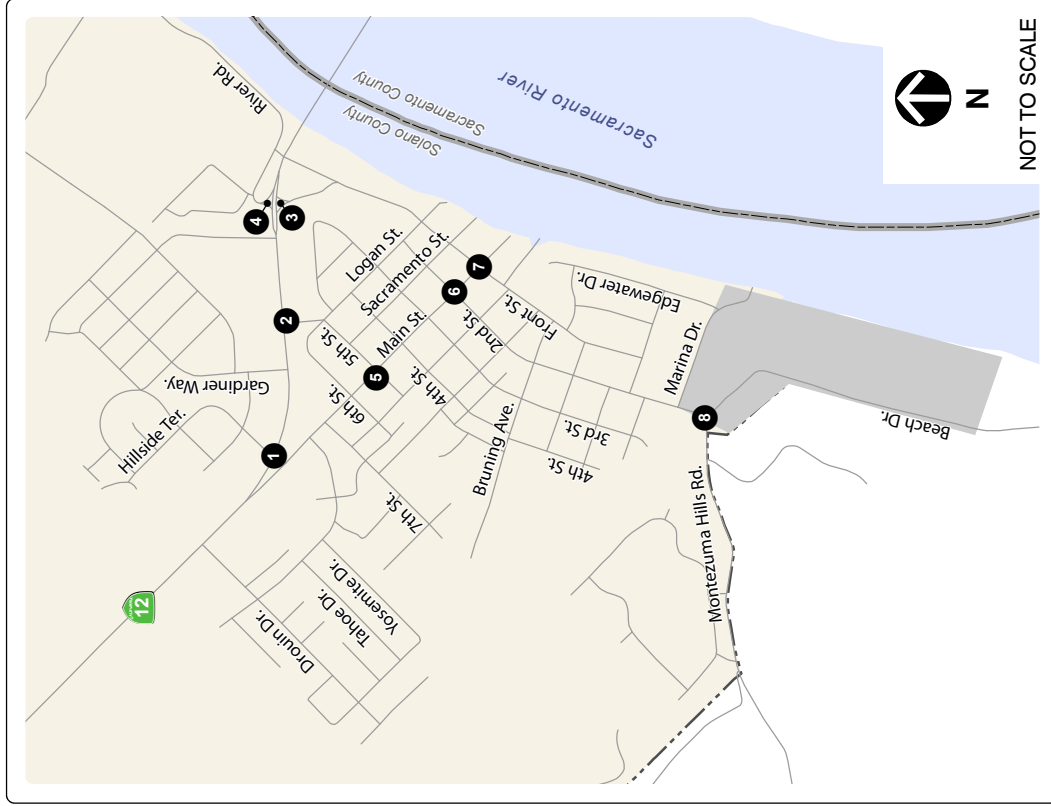


Figure 8.9
**AVERAGE DAILY TRAFFIC VOLUMES -
 CUMULATIVE NO PROJECT CONDITIONS**

SOURCE: Fehr & Peers



LEGEND

- Turn Lane
- AM (PM) Peak Hour Traffic Volume
- 1 Study Intersection
- 8 Traffic Signal
- Stop Sign
- F "Free" Right-Turn
- Project Location

SOURCE: Fehr & Peers

Figure 8.10
**PEAK HOUR TRAFFIC VOLUMES AND LANE CONFIGURATIONS -
 CUMULATIVE NO PROJECT CONDITIONS**

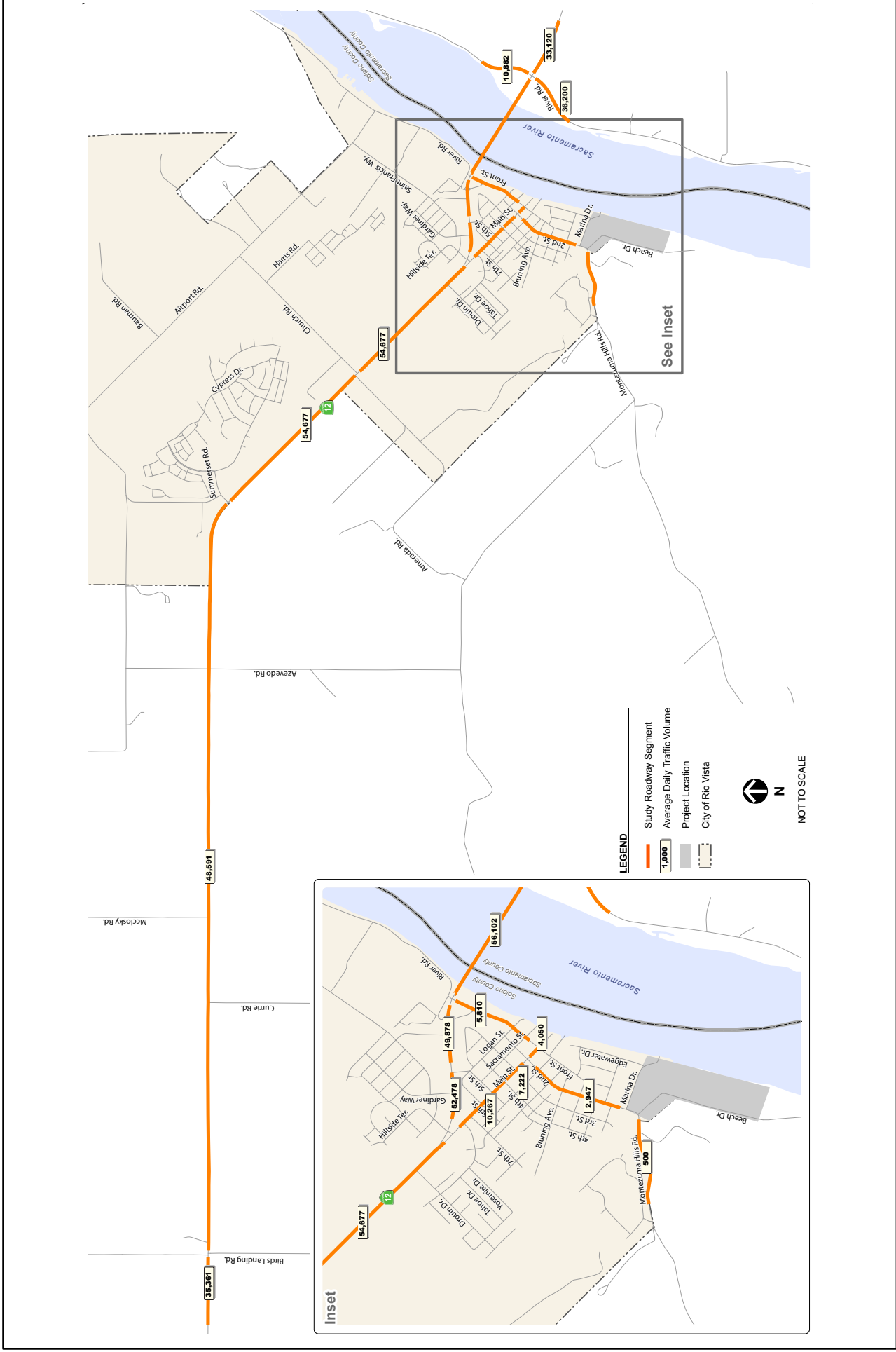
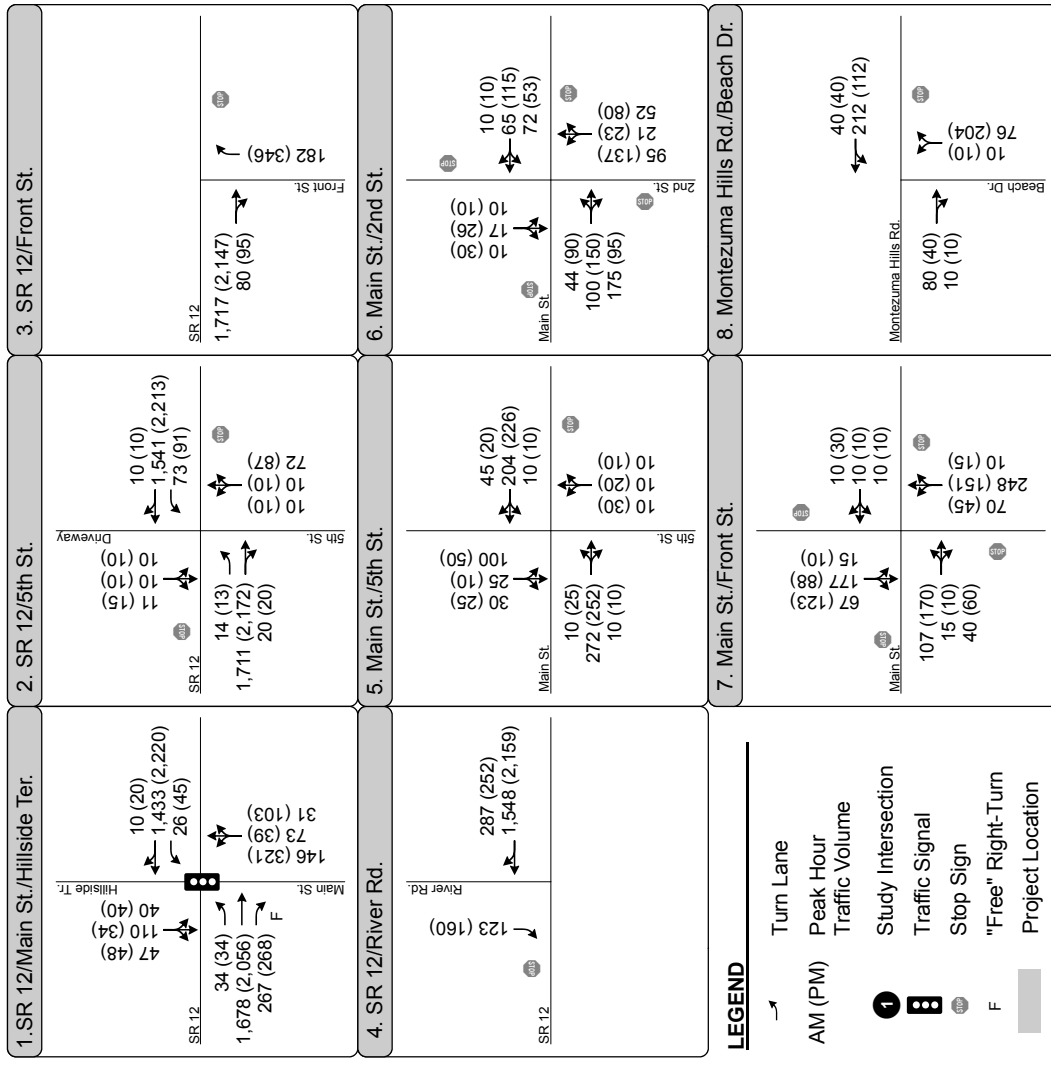
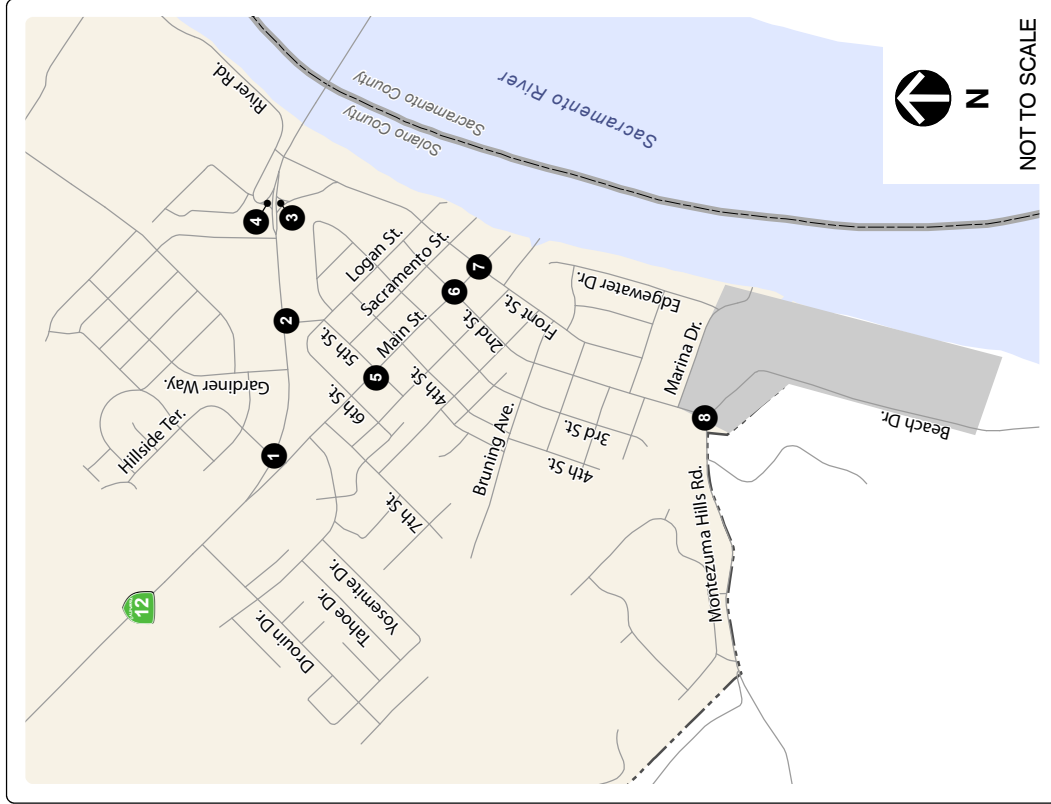


Figure 8.11
**AVERAGE DAILY TRAFFIC VOLUMES -
 CUMULATIVE PLUS PROJECT CONDITIONS**

SOURCE: Fehr & Peers

Wagstaff/MIG ■ Urban and Environmental Planners

Rio Vista Army Reserve Center Redevelopment Plan EIR



LEGEND

- Turn Lane
- AM (PM) Peak Hour Traffic Volume
- 1 Study Intersection
- 2 Traffic Signal
- 3 Stop Sign
- F "Free" Right-Turn
- Project Location

SOURCE: Fehr & Peers

Figure 8.12
**PEAK HOUR TRAFFIC VOLUMES AND LANE CONFIGURATIONS -
 CUMULATIVE PLUS PROJECT CONDITIONS**

Adding capacity to SR 12 over the Sacramento River has been evaluated, but no strategy has been adopted. The Solano Transportation Authority (STA) has prepared a draft report evaluating the potential relocation of the State Route 12 (Rio Vista Bridge) across the Sacramento River. Funding for the relocation/new bridge has not been identified.

For this study, the following improvements have been assumed in-place for both baseline (Year 2010) and cumulative (Year 2025) conditions within the City of Rio Vista. This is because the proposed improvement is funding-assured.

- *SR 12/Church Road intersection:* Installation of a traffic signal, left-turn lanes on the eastbound and westbound SR 12 approaches, and a right-turn lane on the westbound SR 12 approach. This improvement would be installed by the Riverwalk development.¹
- *Widening and improvement of Church Road north of SR 12:* This improvement would be installed with development of the Riverwalk project.
- *SR 12/Riverwalk access:* Installation of a traffic signal and left-turn lanes on eastbound and westbound SR 12. This improvement would be installed by the Riverwalk development.²

8.4.3 Existing Plus Project Conditions

Tables 8.7 and 8.8 present the roadway segment and intersection LOS under Existing Plus Project Conditions. Tables 8.9 and 8.10 summarize impacts and mitigation measures for roadway segments and intersections. Figure 8.13 shows the existing roadway and intersection traffic control and lane configurations with proposed mitigation.

(a) Roadway Segments. The daily traffic volumes shown on Figure 8.7 were compared to the capacity criteria for roadway segments presented at the beginning of this chapter. As shown in Table 8.7, two roadway segments will operate unacceptably with the addition of Project traffic to existing conditions.

Impact 8-1: SR 12--SR 84 to SR 160. The addition of Project traffic to existing conditions would increase the daily traffic volume on the two-lane section of SR 12 between SR 84 and SR 160 from approximately 21,000 vehicles per day (VPD) to approximately 22,302 VPD. Both this existing and estimated existing-plus-Project traffic volume total exceed the capacity of 20,000 VPD for two-lane roadways with high access control. The Project-related traffic volume increase would exacerbate existing LOS F conditions. This effect would represent a **significant impact** (see Criterion (b) under subsection 8.4.1, "Significance Criteria," above).

¹City of Rio Vista, Riverwalk Project Final EIR, January 2007.

²City of Rio Vista 2007.

Table 8.7
 ROADWAY LEVEL OF SERVICE--EXISTING PLUS PROJECT CONDITIONS

Roadway Segment	Lanes	Type	Existing Conditions			Existing Plus Project Conditions		
			Vol	V/C	LOS	Vol	V/C	LOS
1. SR 12 – West of SR 113	2	Rural Hwy ³	11,700	0.51	D	11,961	0.52	D
2. SR12 – SR 113 to Summerset Dr.	2	Arterial ¹	18,900	0.95	E	19,291	0.96	E
3. SR 12 – Summerset Dr. to Main St.	2	Arterial ²	18,600	1.03	F	19,121	1.06	F
4. SR 12 – Main St. to 5 th St.	2	Arterial ²	18,800	1.04	F	18,878	1.05	F
5. SR 12 – 5 th St. to SR 84	2	Arterial ²	18,700	1.04	F	18,878	1.05	F
6. SR 12 – SR 84 to SR 160	2	Arterial ¹	21,000	1.05	F	22,302	1.12	F
7. SR 12 – East of SR 160	2	Rural Hwy ³	16,800	0.73	E	17,320	0.76	E
8. SR 160 – North of SR 12	2	Rural Road ⁵	6,100	0.31	C	6,282	0.31	C
9. SR 160 – South of SR 12	2	Rural Hwy ³	15,000	0.66	E	15,600	0.68	E
10. Main St. – SR 12 to 5 th St.	2	Collector ⁴	6,000	0.75	D	6,867	0.86	E
11. Main St. – 5 th St. to 2 nd St.	2	Collector ⁴	5,500	0.69	D	6,322	0.79	D
12. Main St. – 2 nd St. to Front St.	2	Collector ⁴	3,200	0.40	B	3,950	0.49	C
13. 2 nd St. – Beach Dr. to Main St.	2	Collector ⁴	1,010	0.13	A	2,757	0.35	B
14. Front St. – Main St. to SR 12	2	Collector ⁴	2,500	0.31	B	4,010	0.50	C
15. Montezuma Hills Rd. – South of Beach Dr.	2	Collector ⁴	425	0.05	A	425	0.05	A

Note: Shaded areas indicate unacceptable operations. Shaded and bold areas indicate significant impact.
 All arterial roadway segments assumed to have moderate access control except for Segments 1, 2, and 6, which were assumed to have high access control.

Source: Fehr & Peers, 2010.

Table 8.8
 INTERSECTION LEVEL OF SERVICE--EXISTING PLUS PROJECT CONDITIONS

Intersection	Control	Existing Conditions				Existing Plus Project Conditions			
		AM Peak		PM Peak		AM Peak		PM Peak	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
SR 12/Main St. – Hillside Terrace	Signal	18	B	17	B	19	B	19	F
SR 12/N. 5 th St.	TWSC	18	C	46	E	18	C	46	E
SR 12 (westbound)/River Rd.	TWSC	17	C	19	C	18	C	20	C
SR 12 (eastbound)/Front St.	TWSC	13	B	28	D	13	B	52	F
Main St./N. 5 th St.	TWSC	13	B	12	B	14	B	13	B
Main St./N. 2 nd St.	TWSC	8	A	9	A	9	A	10	B
Main St./Front St.	4WSC	9	A	8	A	10	B	10	B
2 nd St./Beach Dr.	TWSC	9	A	9	A	9	A	9	A

Notes: Signal Control – HCM 2000 Methodology – Results present delay and LOS.
 TWSC = 2-Way Stop Control – HCM 2000 Methodology – Results present delay and LOS for worst minor-street approach.
 4WSC = 4-Way Stop Control – HCM 2000 Methodology – Results present average delay and LOS.
 Shaded areas indicate unacceptable operations. Shaded and bold indicate a significant impact.

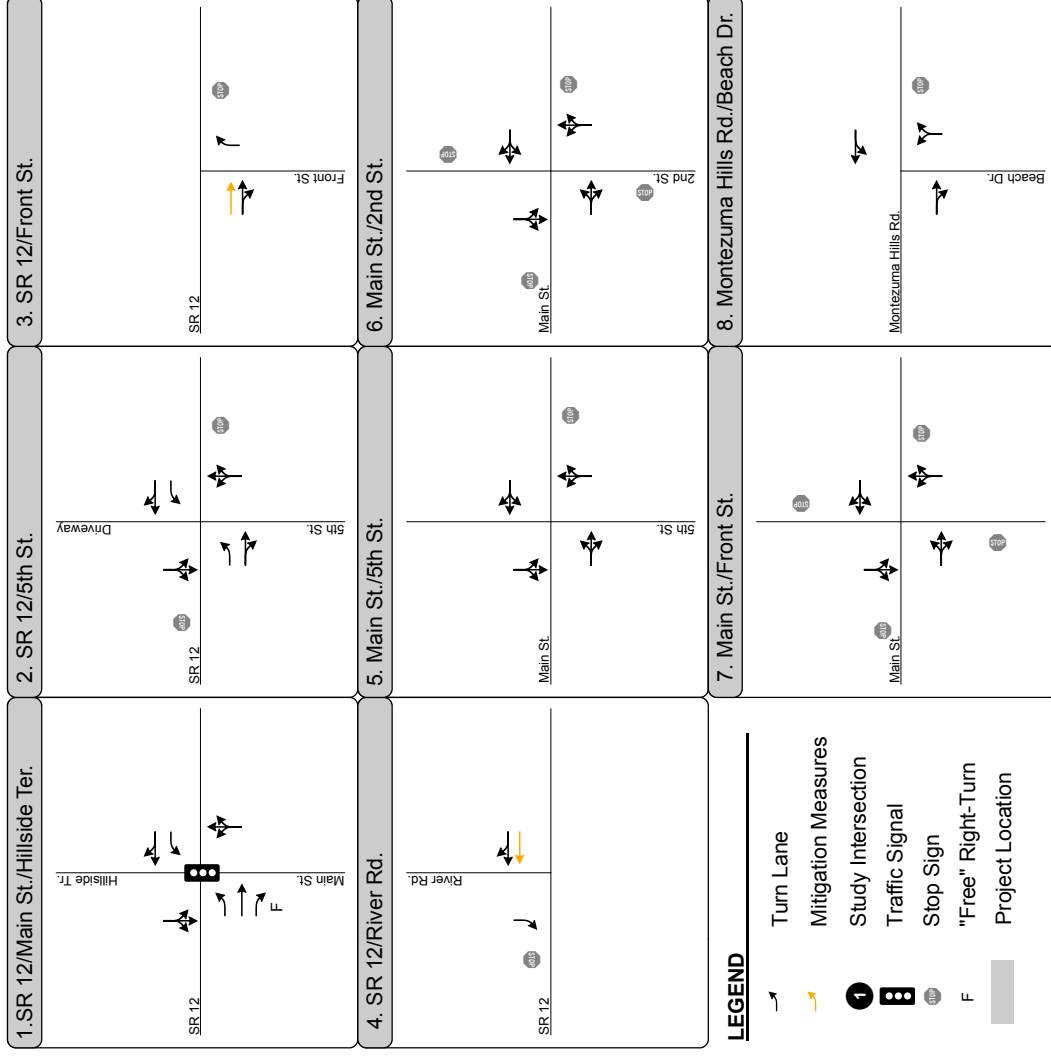
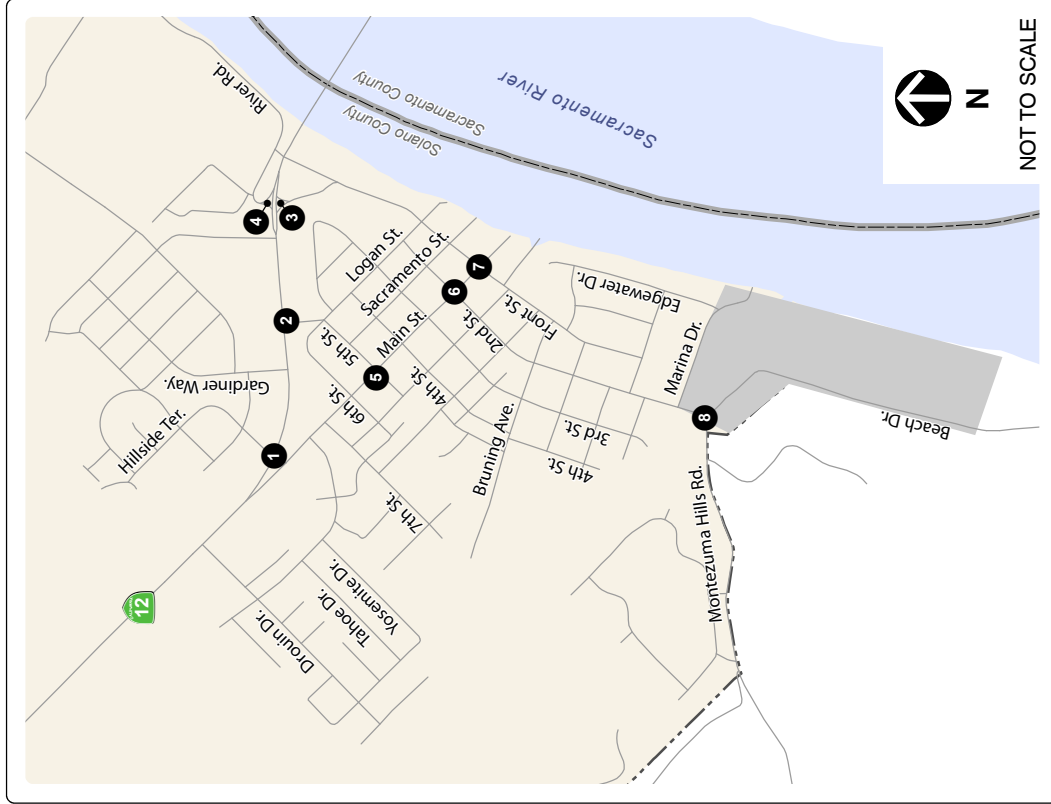
Source: Fehr & Peers, 2010.

Table 8.9
EXISTING PLUS PROJECT CONDITIONS--ROADWAYS

Location	Existing Conditions			Existing + Project Conditions			Existing + Project (Mitigated)		Mitigations
	Daily Volume	V/C Ratio	LOS	Daily Volume	V/C Ratio	LOS	V/C Ratio	LOS	
SR 12 – West of SR 113	11,700	0.51	D	11,961	0.52	D	0.52	D	None
SR12 – SR 113 to Summerset Dr.	18,900	0.95	E	19,291	0.96	E	0.96	E	None
SR 12 – Summerset Dr. to Main St.	18,600	1.03	F	9,121	1.06	F	1.06	F	None
SR 12 – Main St. to 5 th St.	18,800	1.04	F	18,878	1.05	F	1.05	F	None
SR 12 – 5 th St. to SR 84	18,700	1.04	F	18,878	1.05	F	1.05	F	None
SR 12 – SR 84 to SR 160	21,000	1.05	F	22,302	1.12	F	0.56	A	Widen to four lanes (EP-1)
SR 12 – East of SR 160	16,800	0.73	E	7,320	0.76	E	0.76	E	None
SR 160 – North of SR 12	6,100	0.31	C	6,282	0.31	C	0.31	C	None
SR 160 – South of SR 12	15,000	0.66	E	15,600	0.68	E	0.68	E	None
Main St. – SR 12 to 5 th St.	6,000	0.75	D	6,867	0.86	E	0.45	A	Widen to two-lane arterial (EP-2)
Main St. – 5 th St. to 2 nd St.	5,500	0.69	D	6,322	0.79	D	0.79	D	None
Main St. – 2 nd St. to Front St.	3,200	0.40	B	3,950	0.49	C	0.49	C	None
2 nd St. – Beach Dr. to Main St.	1,010	0.13	A	2,757	0.35	B	0.35	B	None
Front St. – Main St. to SR 12	2,500	0.31	B	4,010	0.50	C	0.50	C	None
Montezuma Hills Rd. – South of Beach Dr.	425	0.05	A	425	0.05	A	0.05	A	None
<p>Notes: Shaded areas indicate unacceptable operations Shaded and bold areas indicate project significant impact Source: Fehr & Peers, 2010.</p>									

Table 8.10
 EXISTING PLUS PROJECT CONDITIONS--INTERSECTIONS

Location	Existing Conditions				Existing + Project Conditions				Existing + Project (Mitigated)				Mitigation
	AM Peak		PM Peak		AM Peak		PM peak		AM Peak		PM Peak		
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	
SR 12/Main St. – Hillside Terrace	18	B	17	B	19	B	19	B	19	B	19	B	
SR 12/N. 5 th St.	18	C	46	E	18	C	46	E	18	C	46	E	
SR 12 (westbound)/River Road	17	C	19	C	18	C	20	C	18	C	20	C	
SR 12 (eastbound)/Front Street	13	B	28	D	13	B	52	F	11	B	16	C	Add EB and WB through lane to SR 12 (EP-3)
Main St./N. 5 th St.	13	B	12	B	14	B	13	B	14	B	13	B	
Main St./N. 2 nd St.	8	A	9	A	9	A	10	B	9	A	10	B	
Main St./Front St.	9	A	8	A	10	B	10	B	10	B	10	B	
2 nd St./Beach Dr.	9	A	9	A	9	A	9	A	9	A	9	A	
Notes: Shaded areas indicate unacceptable operations. Shaded and bold areas indicate project significant impact. Source: Fehr & Peers, 2010.													



SOURCE: Fehr & Peers

Figure 8.13
**INTERSECTION TRAFFIC CONTROL AND LANE CONFIGURATIONS -
 EXISTING PLUS PROJECT CONDITIONS WITH MITIGATION**

Mitigation 8-1. Mitigation of this impact would require widening of the section of SR 12 between SR 84 and SR 160 from one to two lanes in each direction by either widening the existing bridge over the Sacramento River or by constructing a new bridge over the river. This improvement, if feasible, would accommodate the projected daily traffic volume and provide LOS A (volume-to-capacity ratio: 0.56) operations. With this mitigation, the Project impact would be less than significant. The Project fair share of this improvement cost would be approximately 6 percent. However, this improvement is not full-funding-assured. Additionally, SR 12 is a Caltrans facility and so this improvement would exceed the City's authority to implement. Thus, this impact would therefore remain **significant and unavoidable**.

Impact 8-2: Main Street--SR 12 to 5th Street. The addition of Project traffic to existing conditions would increase the daily traffic volume on the section of Main Street between SR 12 and 5th Street from approximately 6,000 VPD to approximately 6,867 VPD. This volume increase would change the LOS from LOS C to LOS E. This would be a **significant impact** (see Criterion (a) under subsection 8.4.1, "Significance Criteria," above).

Mitigation 8-2. Mitigation of this impact would require widening of the section of Main Street between SR 12 and 5th Street to a two-lane arterial by adding a center two-way left-turn lane. This improvement, if feasible, would accommodate the projected daily traffic volume and provide LOS A (volume-to-capacity ratio: 0.45) operation. This mitigation measure would thereby reduce this impact to a less than significant level. The Project fair share of this mitigation cost would be approximately 13 percent. However, this improvement would require the acquisition of right-of-way from fronting properties and is therefore considered to be infeasible. Thus, this impact would remain **significant and unavoidable**.

(b) Study Intersections. The traffic volumes shown on Figure 8.8 were used to calculate peak hour levels of service at the study intersections. As shown in Table 8.8, one of the eight intersections, SR 12/Front Street (PM peak hours), which is currently unsignalized will operate unacceptably with the addition of Project traffic to existing conditions.

Unsignalized intersections were evaluated using the peak hour volume warrant (Warrant 11) published in the California Department of Transportation's *Traffic Manual* (1996) to determine if

signal control is warranted under existing plus project conditions.¹ None of the intersections meet the Caltrans peak hour volume warrant.

Impact 8-3: SR 12/Front Street Intersection. The addition of Project traffic to existing conditions would increase peak hour traffic through the SR 12/Front Street intersection. This traffic volume increase will cause the LOS to change from LOS D to LOS F. This would be a **significant impact** (see Criterion (c) under subsection 8.4.1, "Significance Criteria," above).

Mitigation 8-3. *Mitigation Measure 8-1* would provide LOS B and C operations in the AM and PM peak hours, respectively. The Project fair share of this improvement would be approximately 6 percent. This mitigation measure, if feasible, would reduce this impact to a less than significant level; however, this improvement is not funding-assured. Additionally, SR 12 is a Caltrans facility and so this mitigation measure would exceed the City's authority to implement. Thus, this impact would remain **significant and unavoidable**.

(c) Transit System Operations. The addition of Project traffic to existing conditions would result in the following impact to existing transit operations.

Impact 8-4: Existing Plus Project Impact on Transit System Operations. As indicated under Impacts 8-1 through 8-2 above, the addition of Project traffic to existing conditions would significantly increase existing congestion on SR 12. The Project-related increase in existing SR 4 congestion and delay would add to associated interference with transit operations. This would represent a **significant impact** (see Criterion (f) under subsection 8.4.1, "Significance Criteria," above).

Mitigation 8-4. With implementation of *Mitigation 8-1*, the Project contribution to this cumulative impact would be reduced to a less than significant level. However, *Mitigation 8-1* is not funding-assured. Additionally, SR 12 is a Caltrans facility and so this mitigation measure would exceed the City's authority to implement. Thus, this impact would remain **significant and unavoidable**.

¹This analysis is intended to examine the general correlation between the planned level of future development and the need to install new traffic signals. It estimates future development-generated traffic compared against a subset of the standard traffic signal warrants recommended in the Federal Highway Administration *Manual on Uniform Traffic Control Devices* and associated State guidelines. This analysis should not serve as the only basis for deciding whether and when to install a signal. To reach such a decision, the full set of warrants should be investigated based on field-measured, rather than forecast, traffic data and a thorough study of traffic and roadway conditions by an experienced engineer. Furthermore, the decision to install a signal should not be based solely upon the warrants, since the installation of signals can lead to certain types of collisions. To prioritize and program intersections for signalization, regularly monitor actual traffic conditions and accident data, and provide timely reevaluation of the full set of warrants.

(d) Bicycle and Pedestrian System Operations. The Project would not disrupt or interfere with existing or planned bikeways and pedestrian facilities; the impact of the Project on bicycle and pedestrian system operations would be *less than significant*.

8.4.4 Existing Plus Project Plus Cumulative Conditions

Tables 8.11 and 8.12 present the roadway segment and intersection LOS under Cumulative Plus Project Conditions. Tables 8.13 and 8.14 summarize impacts and mitigation measures for roadway segments and intersections. Figure 8.15 shows the existing roadway and intersection traffic control and lane configurations with proposed mitigation.

(a) Roadway Segments. As shown in Table 8.11, the addition of project related traffic would result in the following project impacts to study roadway segments.

Impact 8-5: SR 12--SR 84 to SR 160. The addition of Project traffic to cumulative conditions in 2025 would increase the daily traffic volume on the two-lane section of SR 12 between SR 84 and SR 160 from approximately 54,800 vehicles per day (VPD) to approximately 56,102 VPD. Both this existing and existing-plus-Project traffic volume total exceed the capacity of 18,000 VPD for two-lane roadways with moderate access control. The Project-related traffic volume increase would exacerbate existing LOS F conditions. This effect would represent a ***significant impact*** (see Criterion (b) under subsection 8.4.1, "Significance Criteria," above).

Mitigation 8-5. *Mitigation Measure 8-1* would provide LOS F (volume-to-capacity ratio: 1.40) operations. The Project's fair share of this improvement would be approximately 2 percent. With implementation of this mitigation measure, the Project contribution to this cumulative impact would not be significant. However, even with this improvement, SR 12 between SR 84 and SR 160 would continue to operate at LOS F. This improvement is also not funding-assured. Additionally, SR 12 is a Caltrans facility and so this improvement would exceed the City's authority to implement. Thus, this impact would remain ***significant and unavoidable***.

Impact 8-6: Main Street--SR 12 to 5th Street. The addition of Project traffic to cumulative conditions in 2025 would increase the daily traffic volume on the section of Main Street between SR 12 and 5th Street from approximately 9,400 vehicles per day (VPD) to approximately 10,267 VPD. Both this cumulative and cumulative-plus-Project traffic volume total would exceed the capacity of 8,000 VPD for a two-lane residential collector with driveways. The Project-related traffic volume increase would exacerbate projected LOS F conditions. This would be a considerable contribution and thus a ***significant impact*** (see Criterion (b) under subsection 8.4.1, "Significance Criteria," above).

Table 8.11
 ROADWAY LEVEL OF SERVICE--CUMULATIVE CONDITIONS

Roadway Segment	Lanes	Type	Cumulative Conditions			Cumulative Plus Project Conditions		
			Vol	V/C	LOS	Vol	V/C	LOS
SR 12 – West of SR 113	2	Rural Hwy	35,100	1.53	F	35,361	1.54	F
SR12 – SR 113 to Summerset Dr.	2	Arterial	48,200	2.41	F	48,591	2.42	F
SR 12 – Summerset Dr. to Main St.	2	Arterial	54,000	2.70	F	54,677	2.73	F
SR 12 – Main St. to 5 th St.	2	Arterial	52,400	2.91	F	52,478	2.92	F
SR 12 – 5 th St. to SR 84	2	Arterial	49,800	2.77	F	49,878	2.77	F
SR 12 – SR 84 to SR 160	2	Arterial	54,800	2.74	F	56,102	2.81	F
SR 12 – East of SR 160	2	Rural Hwy	32,600	1.42	F	33,120	1.45	F
SR 160 – North of SR 12	2	Rural Road	10,700	0.63	E	10,882	0.64	F
SR 160 – South of SR 12	2	Rural Hwy	35,600	1.55	F	36,200	1.58	F
Main St. – SR 12 to 5 th St.	2	Collector	9,400	1.18	F	10,267	1.28	F
Main St. – 5 th St. to 2 nd St.	2	Collector	6,400	0.80	D	7,222	0.90	E
Main St. – 2 nd St. to Front St.	2	Collector	3,500	0.44	C	4,050	0.51	C
2 nd St. – Beach Dr. to Main St.	2	Collector	1,200	0.15	A	2,947	0.37	B
Front St. – Main St. to SR 12	2	Collector	4,300	0.54	C	5,810	0.73	D
Montezuma Hills Rd. – South of Beach Dr.	2	Collector	500	0.06	A	500	0.06	A

Notes: Shaded areas indicate unacceptable operations. Shading and bold indicates significant impact.
 All arterial roadway segments assumed to have moderate access control except for Segments 1, 2, and 6, which were assumed to have high access control.

Source: Fehr & Peers, 2010.

Table 8.12
INTERSECTION LEVEL OF SERVICE--CUMULATIVE CONDITIONS

Intersection	Control	Cumulative No Project Conditions				Cumulative Plus Project Conditions			
		AM Peak		PM Peak		AM Peak		PM Peak	
		V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS
SR 12/Main St. – Hillside Terrace	Signal	>80	F	>80	F	>80	F	>80	F
SR 12/N. 5 th St.	TWSC	>50	F	>50	F	>50	F	>50	F
SR 12 (westbound)/River Rd.	TWSC	>50	F	>50	F	>50	F	>50	F
SR 12 (eastbound)/Front St.	TWSC	>50	F	>50	F	>50	F	>50	F
Main St./N. 5 th St.	TWSC	14	B	13	B	18	C	15	C
Main St./N. 2 nd St.	TWSC	9	A	9	A	10	B	10	B
Main St./Front St.	4WSC	10	B	9	A	11	B	10	B
2 nd St./Beach Dr.	TWSC	9	A	9	A	10	B	10	B

Notes: Signal Control – HCM 2000 Methodology – Results present delay and LOS.
 TWSC = 2-Way Stop Control – HCM 2000 Methodology – Results present delay and LOS for worst minor-street approach.
 4WSC = 4-Way Stop Control – HCM 2000 Methodology – Results present average delay and LOS.
 Shaded areas indicate unacceptable operations. Shaded and bold indicate significant impact.
 Source: Fehr & Peers, 2010.

Table 8.13
CUMULATIVE CONDITIONS--ROADWAYS

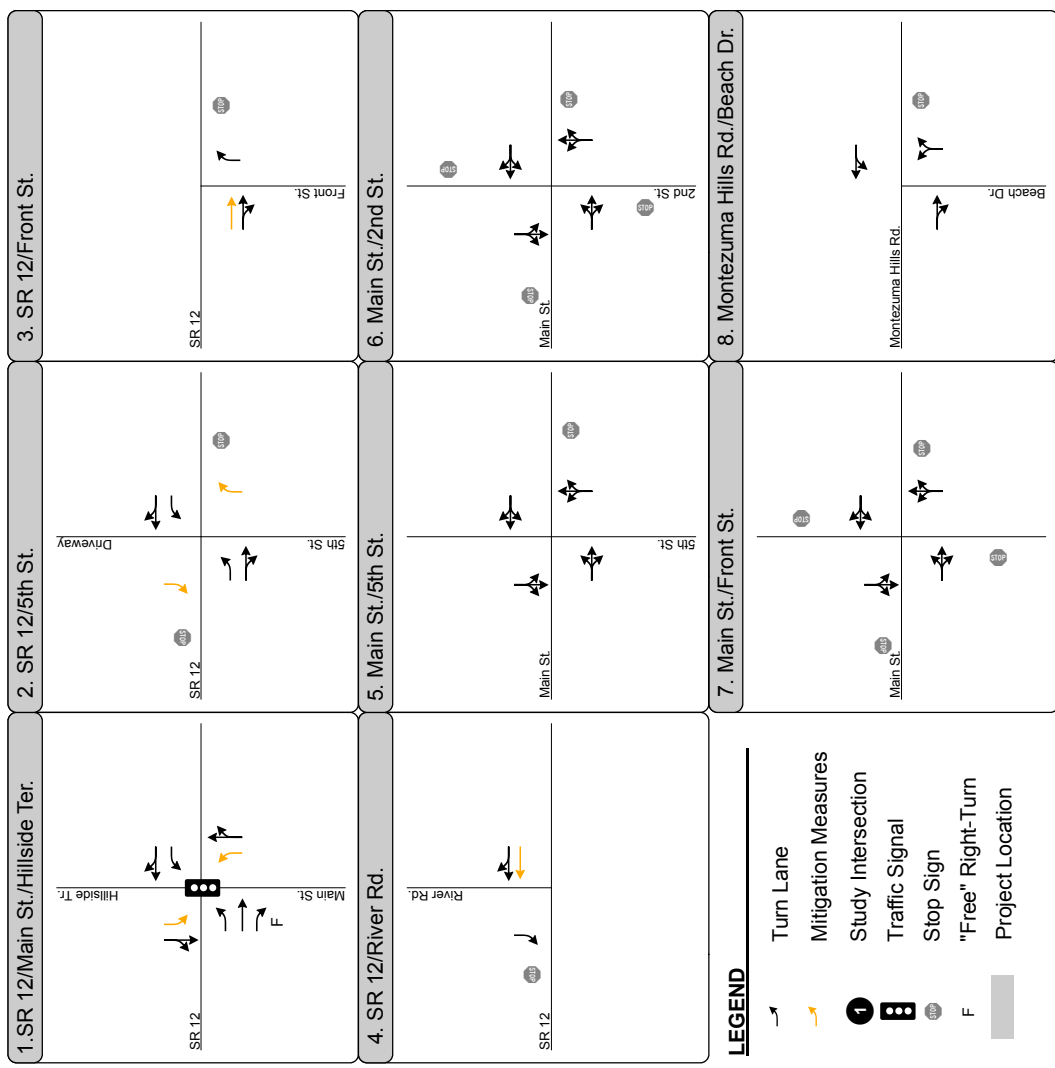
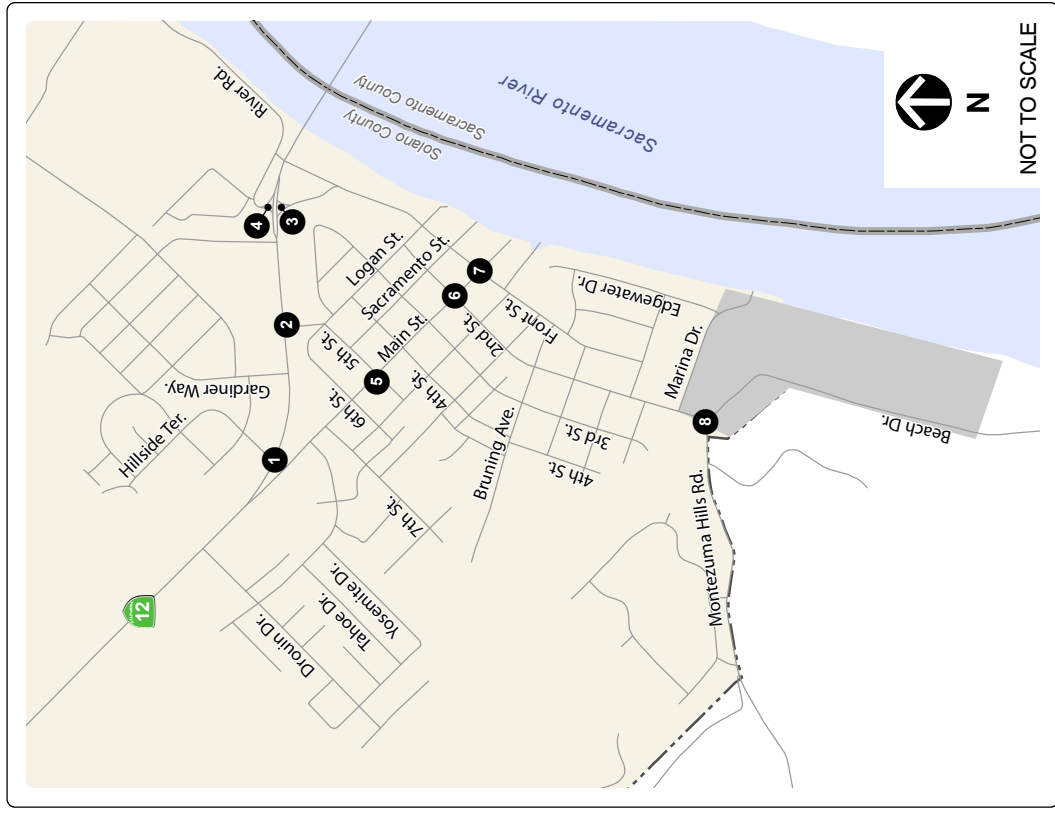
Intersection	Cumulative Conditions			Cumulative + Project Conditions			Cumulative + Project (Mitigated)		Mitigations
	Daily Volume	V/C Ratio	LOS	Daily Volume	V/C Ratio	LOS	V/C Ratio	LOS	
SR 12 – West of SR 113	35,100	1.53	F	35,361	1.54	F	1.54	F	None
SR12 – SR 113 to Summerset Dr.	48,200	2.41	F	48,591	2.42	F	2.42	F	None
SR 12 – Summerset Dr. to Main St.	54,000	2.70	F	54,677	1.73	F	1.73	F	None
SR 12 – Main St. to 5 th St.	52,400	2.91	F	52,478	1.92	F	1.92	F	None
SR 12 – 5 th St. to SR 84	49,800	2.77	F	49,878	1.77	F	1.77	F	None
SR 12 – SR 84 to SR 160	54,800	2.74	F	56,102	1.81	F	1.40	F	Widen to four lanes (CP-1)
SR 12 – East of SR 160	32,600	1.42	F	33,120	1.45	F	1.45	F	None
SR 160 – North of SR 12	10,70	0.63	E	10,882	1.64	F	1.64	F	None
SR 160 – South of SR 12	35,600	1.55	F	36,200	1.58	F	1.58	F	None
Main St. – SR 12 to 5 th St.	9,400	1.18	F	10,267	1.28	F	0.68	B	Widen to two-lane arterial (CP-2)
Main St. – 5 th St. to 2 nd St.	6,400	0.80	D	7,222	0.90	E	0.48	A	Widen to two-lane arterial (CP-3)
Main St. – 2 nd St. to Front St.	3,500	0.44	C	4,050	0.51	C	0.36	B	None
2 nd St. – Beach Dr. to Main St.	1,200	0.15	A	2,947	0.37	B	0.37	B	None
Front St. – Main St. to SR 12	4,300	0.54	C	5,810	0.73	D	0.73	C	None
Montezuma Hills Rd. – South of Beach Dr.	500	0.06	A	500	0.06	A	0.06	A	None

Notes: Shaded areas indicate unacceptable operations.
Shaded and bold areas indicate project significant impact.

Source: Fehr & Peers, 2010.

Table 8.14
 CUMULATIVE CONDITIONS--ROADWAYS

Intersection	Cumulative Conditions				Cumulative + Project Conditions				Cumulative + Project (Mitigated)				Mitigation
	AM Peak		PM Peak		AM Peak		PM peak		AM Peak		PM Peak		
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	
SR 12/Main St. – Hillside Terrace	>80	F	>80	F	>80	F	>80	F	61	E	>80	F	Add NB & SB left turn lanes (CP-4)
SR 12/N. 5 th St.	>50	F	>50	F	>50	F	>50	F	>50	F	>50	F	Restrict 5 th Street movements to right turn only (CP-5)
SR 12 (westbound)/River Road	>50	F	>50	F	>50	F	>50	F	33	E	>50	F	Add EB and WB through lanes to SR 12 (CP-6)
SR 12 (eastbound)/Front Street	>50	F	>50	F	>50	F	>50	F	49	E	>50	F	Add EB and WB through lanes to SR 12 (CP-7)
Main St./N. 5 th St.	14	B	13	B	18	C	15	C	14	B	13	B	
Main St./N. 2 nd St.	9	A	9	A	10	B	10	B	10	B	10	B	
Main St./Front St.	10	B	9	A	11	B	10	B	11	B	10	B	
2 nd St./Beach Dr.	9	A	9	A	10	B	10	B	10	B	10	B	
Notes: Shaded areas indicate unacceptable operations. Shaded and bold areas indicate project significant impact. Source: Fehr & Peers, 2010.													



- LEGEND**
- Turn Lane
 - Mitigation Measures
 - Study Intersection
 - Traffic Signal
 - Stop Sign
 - "Free" Right-Turn
 - Project Location

SOURCE: Fehr & Peers

Figure 8.14
**INTERSECTION TRAFFIC CONTROL AND LANE CONFIGURATIONS -
 CUMULATIVE PLUS PROJECT CONDITIONS WITH MITIGATION**

Mitigation 8-6. *Mitigation Measure 8-2* would provide LOS B (volume-to-capacity ratio: 0.68) operations. The project's fair share of this improvement would be approximately 8 percent. With implementation of this mitigation measure, the Project contribution to this cumulative impact would be less than considerable. However, this improvement would require the acquisition of right-of-way from fronting properties and is therefore considered to be infeasible. Thus, this impact would remain ***significant and unavoidable***.

Impact 8-7: Main Street--5th Street to 2nd Street. The addition of Project traffic to cumulative conditions in 2025 would increase the daily traffic volume on the section of Main Street between 5th Street and 2nd Street from approximately 6,400 vehicles per day (VPD) to approximately 7,222 VPD. Both this cumulative and cumulative-plus-Project traffic volume total would exceed the capacity of 8,000 VPD for two-lane residential collector with driveways. The Project-related traffic volume increase would change the LOS from LOS D to LOS E. This would be a ***significant impact*** (see Criterion (a) under subsection 8.4.1, "Significance Criteria," above).

Mitigation 8-7. Mitigation of this impact would require widening of the section of Main Street between 5th Street and 2nd Street to a two-lane arterial by adding a center two-way left-turn lane. This improvement, if feasible, would accommodate the projected daily traffic volume and provide LOS A (volume-to-capacity ratio: 0.48) operation. This mitigation measure would thereby reduce this impact to a less than significant level. The Project fair share of this improvement cost would be approximately 11 percent. However, this improvement would require the acquisition of right-of-way from fronting properties and is therefore considered infeasible. Thus, this impact would remain ***significant and unavoidable***.

(b) Study Intersections. The traffic volumes shown on Figures 8.10 and 8.12 were used to calculate peak hour levels of service at the study intersections under Cumulative Plus Project conditions. As shown in Table 8.12, the following study intersections, which are currently unsignalized, would operate unacceptably under Cumulative Plus Project conditions.

- SR 12/Main Street--Hillsdale Terrace (AM and PM peak hours)
- SR 12/North 5th Street (AM and PM peak hours)
- SR 12/Front Street (AM and PM peak hours)
- SR 12/River Road (AM and PM peak hours)

Unsignalized intersections were evaluated using the peak hour volume warrant (Warrant 11) published in the California Department of Transportation's *Traffic Manual* (1996) to determine if

signal control is warranted under cumulative (Year 2025) plus project conditions.¹ None of the unsignalized intersections meet Caltrans peak hour volume traffic signal warrants.

Impact 8-8: SR 12/Main Street-Hillside Terrace. The addition of Project traffic to cumulative conditions in 2025 would increase peak hour traffic through the SR 12/Main Street-Hillside Terrace intersection. The Project-related traffic volume increase would cause delay to increase by five or more seconds in both the AM and PM peak hours, which would exceed the City of Rio Vista's five-second criteria for intersections already operating unacceptably (LOS E or F) under "no project" conditions. This would be a considerable Project contribution to cumulative impact conditions and thus a **significant impact** (see Criterion (d) under subsection 8.4.1, "Significance Criteria," above).

Mitigation 8-8. Mitigation of this cumulative-plus-Project impact would require installation of a left turn lane on both the Main Street and Hillside Terrace approaches to the SR 12/Main Street-Hillside Terrace intersection. The Project fair share of this improvement cost would be approximately 2 percent. With this improvement, this intersection would continue to operate unacceptably with LOS E and F operations in the AM and PM peak hours, respectively; however, the Project-related change in the average intersection control delay would be reduced to less than five seconds. Thus, with this measure, the Project contribution to this cumulative impact would be less than considerable and therefore **less than significant**.

Impact 8-9: SR 12/North 5th Street. The addition of Project traffic to cumulative conditions in 2025 would increase peak hour traffic through the SR 12/North 5th Street intersection. The Project-related traffic volume increase would cause the delay to increase by five or more seconds in the AM and PM peak hours, which would exceed the City of Rio Vista's five-second criteria for unsignalized intersections already operating unacceptably (LOS E or F) under "no project" conditions. This would be a considerable Project contribution to cumulative impact conditions and thus a **significant impact** (see Criterion (d) under subsection 8.4.1, "Significance Criteria," above).

¹This analysis is intended to examine the general correlation between the planned level of future development and the need to install new traffic signals. It estimates future development-generated traffic compared against a subset of the standard traffic signal warrants recommended in the Federal Highway Administration *Manual on Uniform Traffic Control Devices* and associated State guidelines. This analysis should not serve as the only basis for deciding whether and when to install a signal. To reach such a decision, the full set of warrants should be investigated based on field-measured, rather than forecast, traffic data and a thorough study of traffic and roadway conditions by an experienced engineer. Furthermore, the decision to install a signal should not be based solely upon the warrants, since the installation of signals can lead to certain types of collisions. To prioritize and program intersections for signalization, regularly monitor actual traffic conditions and accident data, and provide timely reevaluation of the full set of warrants.

Mitigation 8-9. Mitigation of this cumulative-plus-Project impact would require installation of a raised median on SR 12 to restrict left-out access from North 5th Street on the northbound and southbound approaches to the SR 12/North 5th Street intersection. The Project fair share of this improvement cost would be approximately 1 percent. With this improvement, this intersection would continue to operate unacceptably with LOS F operations in the AM and PM peak hours; however, the Project-related change in the average intersection control delay would be reduced to less than five seconds. Thus, with this measure, the Project contribution to this cumulative impact would be less than considerable and therefore ***less than significant***.

Impact 8-10: SR 12/Front Street. The addition of Project traffic to cumulative conditions in 2025 would increase peak hour traffic through the SR 12/Front Street intersection. The Project-related traffic volume increase would cause delay to increase by five or more seconds in the AM and PM peak hours, which would exceed the City of Rio Vista's five-second criteria for unsignalized intersections already operating unacceptably (LOS E or F) under "no project" conditions. This would be a considerable Project contribution to cumulative impact conditions and thus a ***significant impact*** (see Criterion (d) under subsection 8.4.1, "Significance Criteria," above).

Mitigation 8-10. Mitigation of this cumulative-plus-Project impact would require installation of a second eastbound and westbound through lane on SR 12 to the SR 12/Front Street intersection. The Project fair share of this improvement cost would be approximately 3 percent. This improvement, which is consistent with Mitigation Measure 8-1, would provide LOS E and F operations in the AM and PM peak hours, respectively. However, the Project-related change in the average intersection control delay would be reduced to less than five seconds. Thus, with this measure, the Project contribution to this cumulative impact would be less than considerable and therefore ***less than significant***.

Impact 8-11: SR 12/River Road. The addition of Project traffic to cumulative conditions in 2025 would increase peak hour traffic through the SR 12/River Road intersection. The Project-related traffic volume increase would cause delay to increase by five or more seconds in the AM and PM peak hours, which would exceed the City of Rio Vista's five-second criteria for unsignalized intersections already operating unacceptably (LOS E or F) under "no project" conditions. This would be a considerable Project contribution to cumulative impact conditions and thus a ***significant impact*** (see Criterion (d) under subsection 8.4.1, "Significance Criteria," above).

Mitigation 8-11. Mitigation of this cumulative-plus-Project impact would require installation of a second through lane on eastbound and westbound SR 12 to the SR 12/River Road intersection. The project fair share of this improvement cost would be approximately 2 percent. This improvement, which is consistent with Mitigation Measure 8-1, would provide LOS E and F operations in the AM and PM peak hours, respectively. However, the Project-related change in the average intersection control delay would be reduced to less than five seconds. Thus, with this measure, the Project contribution to this cumulative impact would be less than considerable and therefore ***less than significant***.

(c) Transit System Operations. The addition of Project traffic to cumulative conditions in 2025 would result in the following impact to transit operations.

Impact 8-12: Cumulative-Plus-Project Impact on Transit System Operations. As indicated under Impacts 8-5, 8-6 and 8-8 through 8-11 above, the addition of Project traffic to cumulative conditions in 2025 would significantly increase congestion on SR 12. The Project-related increase in cumulative SR 4 congestion and delay would add to associated interference with transit operations. This would represent a considerable Project contribution to cumulative impact conditions and thus a ***significant impact*** (see Criterion (f) under subsection 8.4.1, "Significance Criteria," above).

Mitigation 8-12. With *Mitigation Measures 8-1, 8-8, 8-9, 8-10 and 8-11*, the Project contribution to this cumulative impact would be less than considerable. However, the identified improvement is not funding-assured. Additionally, SR 12 is a Caltrans facility and so the improvement exceeds the City's authority to implement. Thus, this impact would remain ***significant and unavoidable***.

(d) Bicycle and Pedestrian System Operations. The Project would not disrupt or interfere with existing or planned bikeways and pedestrian facilities; the impact of the Project on bicycle and pedestrian system operations would be *less than significant*.

9. PUBLIC SERVICES AND UTILITIES

This chapter describes existing conditions and the relevant local policy and regulatory framework related to public services and utilities in Rio Vista, including police, fire and emergency medical service, libraries, parks and recreation, schools, and solid waste; and the related potential environmental impacts of the proposed Redevelopment Plan. Redevelopment would remove barriers to and facilitate planned development within the proposed Project Area, which in turn would generate demands on public services and utilities. Redevelopment would also fund infrastructure improvements to serve development within the proposed Project Area. Rio Vista General Plan goals, policies and actions relevant to all public services and utilities, and the City's development impact fees, are described first, followed by a separate discussion of impacts related to each service type.

9.1 PLANS AND POLICIES PERTINENT TO ALL SERVICES

9.1.1 Rio Vista General Plan

The Rio Vista General Plan contains the following goals and policies, which are relevant to consideration of Project-related public services impacts:

The Rio Vista Principles contain the following principles relevant to public services.

Provide adequate and accessible public services and facilities to all Rio Vistans in a fiscally healthy and responsible manner.

- *Growth should pay for itself. New development should ensure that sufficient public services are provided without additional burden to existing residents or over-extending current capacity.*
- *Rio Vista should continue its tradition of cooperation with private nonprofit agencies and other public agencies, to provide essential services for youth, seniors, the economically disadvantaged, and those in crisis.*
- *Adequate public facilities--sewer, water, transportation, public safety, parks, recreation, education, and others--should be in place or assured in a timely fashion before new development projects proceed.*

The Rio Vista General Plan Public Services and Facilities Element contains the following relevant public services goals, policies and actions.

- *To expand and consolidate public service and maintenance operations in order to adequately and efficiently serve the residents and businesses of Rio Vista. (Goal 12.1)*

- *The City shall cluster and connect branch or secondary community facilities in neighborhood activity centers, including parks, libraries, and community centers. (Policy 12.1.B)*
- *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 12.1.D)*
- *To ensure that adequate financial mechanisms are in place to provide for the facilities and services described in this and other elements of the general plan. (Goal 12.10)*
- *The City shall ensure that new growth will pay for the facilities and services it requires without an additional burden to existing residents. The City shall ensure that sufficient resources exist in order to provide for an adequate level of service delivery, operation, and maintenance of capital facilities. (Policy 12.10.A)*
- *The City shall create local, self-sufficient funding sources for new facilities rather than outside sources that cannot be relied on consistently. (Policy 12.10.B)*
- *The City shall review and update the costs of capital facilities and adjust development fees and other revenue sources on a regular basis. Prior to completion of the AB1600 citywide master analysis (PF-27), the share of financial responsibility for the facilities costs and impacts on the community will be determined on a project by project basis. The project sponsor or developer will be responsible for the cost of this analysis. The City may require a particular project to fund the master study, with reimbursement to be made for areas not affected by the particular project through credits against developer fees when building permits for that project are issued. (Policy 12.10.C)*
- *The City shall ensure that all future tentative maps, development agreements, and agreement amendments contain updated and adequate fees to fund the infrastructure needed to serve new growth. Fees should remain flexible rather than being “locked in” so that needs arising after the date of the agreement can be met. (Policy 12.10.D)*
- *To provide new service connections and facilities and extensions of infrastructure to new developments in a cost-effective manner that is consistent with all other elements of this General Plan. (Goal 12.11)*
- *Priority for new services and facilities and extensions of infrastructure will be given to projects that meet the following criteria:*
 - *Proximity to existing facilities.*
 - *Financial mechanism in place to pay for the cost of the extension.*
 - *Proximity to existing neighbor-hoods, access points, and developed infrastructure.*
 - *The project is consistent with or facilitates specific goals and policies of this General Plan. (Policy 12.11A)*
- *Action PF-2 Development Impact Fees*
- *Action PF-5 Interagency Coordination*
- *Action PF-26 AB 1600 Analysis*

Table 9.1
CITY-WIDE DEVELOPMENT IMPACT FEES¹

<u>Service Category</u>	<u>Fee Per Unit</u>
Water Connection	\$5,582 per connection
Sewer Plant and Connection	\$7,278 per connection
Municipal Facilities	\$3,630 per single-family residential unit
	\$2,529 per multi-family residential unit
	\$0.70 per square foot of non-residential use
Parks and Trails	\$4,110 per single-family residential unit
	\$2,312 per multi-family residential unit
	\$0.27 per square foot of non-residential use
Roadways	\$6,940 per single-family residential unit
	\$4,368 per multi-family residential unit

SOURCE: City of Rio Vista, Municipal Service Review Comprehensive Annexation Plan, October 2006.

¹ Fees or dedication of facilities have also been required through development agreements for Branch Ranch, Marks Ranch and Gibbs Ranch. The City collects \$500 per year per unit for police and fire services through the Trilogy development agreement. The City's 2005-2010 Capital Improvement Program includes funding for a Storm Drainage Master Plan and drainage fee study. Additionally, Solano County collects a community facilities fee for administrative buildings, courts, jails, and libraries and the River-Delta Unified School District collects school impact fees.

9.1.2 Development Impact Fees

The following city-wide development fees and connection fees are collected outside of areas that are covered by development agreements.

9.2 WATER SERVICE

This section describes the existing conditions and regulatory setting, and the potential impacts of the Project related to water supply, water treatment and distribution facilities, and fire flows.

9.2.1 Setting¹

The City of Rio Vista's domestic water system provides chlorinated ground water to most of the commercial, industrial and residential facilities within the city. The City of Rio Vista Public Works Department manages the contract for the operation and maintenance of the City's water system, master planning, construction management, and construction of new facilities.²

(a) Water Supply Source. The City of Rio Vista currently uses groundwater exclusively for its water supply. The City also has a State Water Project (SWP) contract, available beginning in 2016, which could supply a maximum of 300 AF in 2016, increasing by 300 AF each year to the contract maximum of 1,500 AF in 2020 and thereafter. The contract is subject to the standard SWP shortages in drier years. Currently, the City has no facilities with which to take SWP water and is not relying on its SWP contract to fulfill its future water demands.

(1) Groundwater Hydrology. The City draws its water supply from the Solano groundwater subbasin of the Sacramento Basin, which covers the majority of the Sacramento Valley. The Solano subbasin contains at least two distinct freshwater-bearing zones: an upper alluvial layer, ranging from 60 to 130 feet thick; and the thicker Tehama formation, which provides most of the groundwater used in the area. Although no studies have yet quantified the basin's sustainable yield³, groundwater supplies are adequate to meet and exceed the current groundwater demands in the basin, and the DWR does not consider the basin to be in overdraft.

Historically, groundwater levels in the basin were lowest during the 1940s and 1950s, when intensive agriculture in the county relied almost entirely on groundwater. Groundwater levels in the basin began to rise after construction of the Solano Project, a regional surface water supply project which serves most of the county, though no Rio Vista. Current groundwater levels across the basin are at or near record highs, with some well records showing levels at or very near ground surface in recent years, which indicates that the basin is at the point of rejecting additional recharge.

Recent records from various monitoring wells in the Rio Vista area indicate that groundwater levels are not in decline. Based on the Solano County Water Agency's (SCWA) characterization of groundwater as a secure supply, Rio Vista's water supplies are not thought to be susceptible to shortage in dry years.

¹Except as otherwise noted, Setting information is from City of Rio Vista, Del Rio Hills Planned Unit Development Draft Environmental Impact Report, December 2008.

²City of Rio Vista, Municipal Service Review Comprehensive Annexation Plan, October 2006.

(2) *Groundwater Quality.* Groundwater quality in the Solano subbasin is generally considered to be good, and can be used for both urban and agricultural purposes, although most of the groundwater is of high hardness (over 180 parts per million of Calcium Carbonate). Groundwater in the area of the proposed Project Area is locally affected by septic systems. According to the 1996 Annual Water Quality Report, three percent of the samples tested for coliform bacteria were positive. Of the 33 organic chemicals investigated, one was detected. However, all samples had inorganic chemical concentrations and radioactivity below the California Code of Regulations Title 22 drinking water maximum contaminant levels (MCLs).¹

(b) Municipal Water System. The City's municipal water system consists of eight wells tapping into a deep aquifer, one above-ground reservoir, and a system of pumps and distribution pipes.

(1) *Wells.* The characteristics of the city's eight wells, including approximate yield, depth, and year of construction are included in Table 9.2.

(2) *Treatment.* Due to the purity of the deep aquifer source, there is no central water treatment facility and treatment instead occurs at the well head. The City has no centralized water treatment facility, but if water quality problems are impairing the delivery of water in the system or total production, wellhead treatment, holding, or dilution of the water could be undertaken to resolve the problem. The City may also encounter some pumping limits related to water quality due to naturally-occurring arsenic (Wells 10 and 12) and benzene (Well 9).

(3) *Storage.* Water is collected in a 2 million gallon above-ground storage reservoir located behind Esperson Court.

(4) *Distribution.* Water is distributed throughout the city by a series of pumps and underground pipes.² The City's water distribution system consists of pipes less than a few years old to pipes that are almost 150 years old. Most of the newer pipes are PVC, yet there are still significant numbers of cast iron, ductile iron and transit pipes currently in use. There is an 8-inch PVC line within Beach Drive adjacent to the proposed Project Area, an 8-inch PVC line within 2nd Street and a 12-inch PVC line in Montezuma Road.³

(c) Municipal Water System Supply and Demand. Existing and projected local water supply and demand characteristics are described below:

(1) *Existing Demand Characteristics.* Table 9.3 shows supply deliveries for the City in 2000 and 2004 broken down by use sector, the percent of total supply that each use represents for both years, and percent change in supply between 2000 and 2004. Single-family residential is by far the top use sector, comprising nearly 75 percent of all supply deliveries for both 2000 and 2004. Landscape irrigation accounted for over six percent. Water use increased by about six percent from 2000 to 2004, with the almost no change in the distribution of demand by sector.

¹U.S. Army Corps of Engineers Sacramento District, Environmental Assessment for the Disposal and Reuse of the Rio Vista Army Reserve Center, October 2000, p. 4-9.

²City of Rio Vista 2006.

³City of Rio Vista 2006.

Table 9.2
 CITY OF RIO VISTA WATER SUPPLY WELLS

<u>Well Number</u>	<u>Capacity (gpm)</u>	<u>Installation Date</u>	<u>Depth</u>	<u>Screened Depths</u>
7	400	1953	424	18-406
8	300	1955	492	84-438
9	900	1963	910	230-780
10	1200	Unknown	520	230-500
11	1100	1995	937	205-273, 315-350
12	500	1995	452	380-408, 418-442
13	1500	2003	350 (+/-)	300 (+/-)
14	1500	2005	350 (+/-)	300 (+/-)
TOTAL	7400			

SOURCE: ENGEO, "Memo to the City of Rio Vista: Hydrogeologic and Available Water Supply Trend Analysis," October 2006, and ENGEO, Groundwater Evaluation, City of Rio Vista, June 21, 2002, as reported in City of Rio Vista, Del Rio Hills Planned Unit Development Draft Environmental Impact Report, December 2008, p. 4.13-4.

Table 9.3
 CITY OF RIO VISTA HISTORICAL WATER SUPPLY DELIVERIES

<u>Use Sector</u>	<u>2000</u>		<u>2004</u>		<u>Percent Change (2000 – 2004)</u>
	<u>Supply Deliveries (AF)</u>	<u>Percent of Total 2000 Supply</u>	<u>Supply Deliveries (AF)</u>	<u>Percent of Total 2004 Supply</u>	
Single-family residential	1,205	74.4	1,278	74.4	5.6
Multi-family residential	36	2.2	38	2.2	0.0
Commercial	92	5.7	92	5.4	6.7
Industrial	90	5.6	96	5.6	5.9
Institutional	68	4.2	72	4.2	4.2
Park	24	1.5	25	1.5	6.7
Landscape irrigation	105	6.5	112	6.5	6.1
TOTAL	1,620 AF (528 MG)		1,719 AF (560 MG)		6.1

SOURCE: City of Rio Vista, Urban Water Management Plan, December 2005, as reported in City of Rio Vista, Del Rio Hills Planned Unit Development Draft Environmental Impact Report, December 2008, p.3-5.

Table 9.4
EXISTING AND PROJECTED WATER SUPPLY AND DEMAND

	<u>2005</u>	<u>2010</u>	<u>2015</u>	<u>2020</u>	<u>2025</u>	<u>2030</u>
Number of Wells	8	11	15	17	17	17
System Capacity (gpm) ¹	7,400	10,400	14,400	16,400	16,400	16,400
System Capacity (AFA) ²	3,978	5,591	7,741	8,816	8,816	8,816
Projected Demand (AFA) ³	2,446	5,363	7,553	8,766	8,766	8,776

SOURCE: City of Rio Vista, Del Rio Hills Planned Unit Development Draft Environmental Impact Report, December 2008, p. 4.13-13.

¹ Assumes City adds 1,000 gpm wells when needed to meet new demand from planned development as anticipated in UWMP. If wells constructed provide yields higher than 1,000 gpm, fewer wells will be needed.

² Approximate annual yield based on capacities in gpm, divided by reliability factor of 3 as stated in City of Rio Vista 2003 WMP, to convert maximum day well capacity to full day equivalent yield.

³ Includes projected demand from General Plan buildout plus the Del Rio Hills PUD. Proposed Project Area development assumptions used in this EIR are consistent with the General Plan and included in this projected demand.

(2) *Existing and Projected Supply and Demand.* As shown below in Table 9.4, in 2005 the City's total water supply system capacity was 7,400 gallons per minute (gpm) or 3,978 acre feet annually (AFA). The City's 2005 Urban Water Management Plan (UWMP) assumes the City will add new 1,000 gpm wells when needed to meet demand from planned development. At buildout of the current General Plan, the City would have 17 wells and a total system capacity of 8,816 AFA, as compared to a total demand of 8,776 AFA.¹

(d) Proposed Project Area Water Infrastructure. Existing water supply infrastructure within the proposed Project Area includes a private well, an elevated storage tank, water distribution pipelines, a river intake fire flow pump, nine fire hydrants, and fire flow pipelines (see Figure 3.3, in Chapter 3, Project Description). The well and storage tank were left intact. The 1998 Rio Vista Army Base Reuse Plan evaluated the existing infrastructure within the proposed Project Area and determined that it was inadequate to serve new development and not worth retaining. The storage tank would likely not meet current building code seismic safety requirements for water storage use.²

¹City of Rio Vista, Urban Water Management Plan, December 2005, as reported in City of Rio Vista, Del Rio Hills Planned Unit Development Draft Environmental Impact Report, December 2008, p.3-5.

²Cecil Dillon, Dillon Engineering. Personal communication with Ricardo Bressanutti, February 26, 2010.

9.2.2 Pertinent Plans and Policies

(a) Federal. The Safe Drinking Water Act (SDWA), established on December 16, 1974, is the main federal law that ensures the quality of drinking water by setting standards for drinking water quality and by providing guidance to the states, localities, and water suppliers who implement those standards.

(b) State. The State Water Resources Control Board (SWRCB) regulates the water quality functions of the State and manages the State's Water Code. State primary and secondary drinking water standards are promulgated in California Code of Regulations (CCR) Title 22 Sections 64431- 64501. Secondary drinking water standards incorporate non-health risk factors including taste, odor, and appearance.

(1) Urban Water Management Planning Act. California Water Code Section 10610 (et seq.) requires that all public water systems providing water for municipal purposes to more than 3,000 customers, or supplying more than 3,000 AFA, must prepare an urban water management plan (UWMP). UWMPs must be updated at least every five years on or before December 31st, in years ending in five and zero. Assembly Bill (AB) 901 requires that the UWMP document the quality of a supplier's available water source(s) and provide an assessment of the ways in which water quality affects its water management strategies and supply. Rio Vista's UWMP was completed in 2005.

(2) Water Availability. Section 64562 of the California Health and Safety Code requires each public water system to have sufficient water available from its water sources and distribution reservoirs to supply adequately, dependably, and safely the total requirements of all its users under maximum demand conditions before an agreement can be made to permit additional service connections to that system.

(3) Water Conservation. AB 325, the Water Conservation and Landscaping Act, directs local governments to require the use of low-flow plumbing fixtures and the installation of drought-tolerant landscaping in all new development.

(4) Drinking Water Quality. The California Department of Health Services (DHS) is responsible for implementing the federal Safe Drinking Water Act of 1974 and its updates, as well as California statutes and regulations related to drinking water. The DHS inspects and provides regulatory oversight for public water systems. Public water system operators are required to regularly monitor their drinking water sources for biological, chemical, and radiological contaminants to meet maximum contaminant levels (MCLs). Primary MCLs protect public health; secondary MCLs deal with the aesthetic properties of drinking water, such as taste, odor, and appearance. Public water system operators are also required to analyze samples for unregulated contaminants, and to report other contaminants that may be detected during sampling.

In addition, in the Rio Vista area, the Central Valley Regional Water Quality Control Board (RWQCB) is responsible for protecting the beneficial uses, including municipal drinking water supply, of the State's waters, including groundwater.

(c) City of Rio Vista. The Rio Vista General Plan and Conservation and Landscape Ordinance are relevant to the potential water service impacts of the Project.

(1) *Rio Vista General Plan.* The Public Facilities and Services Element of the General Plan contains the following relevant goals, policies and actions.

- *To maintain a water system that adequately serves the existing community, to provide water services to all existing and future development, and to ensure that safe drinking water standards are met. (Goal 12.5)*
- *The City shall provide reliable and secure water sources for current and future residents. (Policy 12.5.A)*
- *The City shall provide adequate water treatment capacity and infrastructure. (Policy 12.5.B)*
- *To encourage and provide for water and energy conservation efforts balanced with increases in supplies. (Goal 12.8)*
- *The City shall develop and implement water conservation standards. (Policy 12.8.A)*
- *Action PF-2 Development Impact Fees*
- *Action PF-3 Capital Improvement Program*
- *Action PF-4 Development Review Process*
- *Action PF-18 Aquifer Study*
- *Action PF-19 Utilities Master Plan Update*
- *Action PF-20 Landscape Ordinance*
- *Action PF-21 Water and Energy Conservation Program*
- *Action PF-22 Water Metering and Usage-Based Rate Structure Plan*
- *Action PF-23 Wastewater Reuse*

(2) *Water Conservation and Landscaping Ordinance.* Rio Vista's Water Conservation and Landscaping Ordinance (Chapter 17.68 of the Municipal Code) sets forth standards and guidelines for landscaping design, plant material and installation, irrigation, building permit and inspection, and maintenance of cultivated landscape areas. The ordinance incorporates the following xeriscape principles:

- Appropriate planning and design for local conditions;
- Limiting turf to locations where it provides functional benefits;
- Efficient irrigation systems;
- The use of soil amendments to improve the structural characteristics of the soil;
- The use of mulches, where appropriate;
- The use of drought-tolerant plants; and
- Appropriate and timely maintenance.

Parks, playgrounds, and sports fields may be exempted from the ordinance's water budget requirements upon approval of the planning commission.¹

¹Rio Vista Municipal Code, Chapter 17.68, <<http://qcode.us/codes/riovista/>> Accessed February 11, 2010.

9.2.3 Significance Criteria

Based on the CEQA Guidelines,¹ the Project would result in a significant impact on water service if it would:

- (a) Require or result in the construction of new water facilities or expansion of existing facilities, the construction of which could cause significant environmental impacts;
- (b) Result in a need for new or expanded water supply entitlements; or
- (c) 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 (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).

9.2.4 Impacts and Mitigation Measures

(a) Project Impacts. The proposed Redevelopment Plan would facilitate an estimated total of approximately 244,500 square feet of development within the proposed Project Area, including an approximately 110,000 square foot research station, 150-room lodge, 9,000-square-foot restaurant, 21,000-square-foot community center and 12.3 acres of parks. This additional development would increase water demand, would require new on-site water infrastructure, and may require off-site improvements to the City's water distribution system. Providing the on-site infrastructure needed to serve new development within the proposed Project Area is a primary objective of, and among the anticipated redevelopment actions under, the proposed Redevelopment Plan. Development within the proposed Project Area would be required to pay "fair share" fees in accordance with the City's development fee schedule, which would fund the repair, replacement and expansion of water distribution infrastructure serving the proposed Project Area. Therefore, the impact of the Project related to water service would be ***less than significant***.

(b) Cumulative Impacts. Development facilitated by the proposed Redevelopment Plan, together with other reasonably foreseeable development in the city, would result in an estimated total of approximately 6,726 new housing units and approximately 1.1 million square feet of new non-residential development. This cumulative development would result in a total water demand of 8,776 AFA in 2030 and would create a need for additional water supply, treatment, storage and distribution facilities.

The additional water demand from development facilitated by the proposed Redevelopment Plan would be a cumulatively considerable contribution to the City's total water demand and its water supply and infrastructure needs. However, the 244,500 square feet of development that would be facilitated by the proposed Redevelopment Plan is consistent with the General Plan, and is included in the General Plan buildout estimates used in the City's UWMP, and its water system planning and capital improvement program.

The six large development projects that comprise this cumulative development and the City's Public Works Department would be providing new water supply, storage and distribution facilities as development proceeds. Cumulative development, including development within the

¹CEQA Guidelines, Appendix G, items XVI(b and d) and VII(b).

proposed Project Area, would be required to develop new facilities and to pay “fair share” fees in accordance with the City’s development fee schedule, which would fund the repair, replacement and expansion of water distribution infrastructure. As shown in Table 9.4, cumulative development would result in a total water demand of 8,776 AFA in 2030 and the City would have a total system capacity of 8,816 AFA.¹ Therefore, cumulative impacts related to water service would be ***less than significant***.

9.3 WASTEWATER SERVICE

This section describes the existing conditions and regulatory setting, and the potential impacts of the Project related to wastewater collection and treatment facilities.

9.3.1 Setting²

Wastewater service in Rio Vista is provided by the City’s Public Works Department. There are currently two wastewater treatment plants operated by the City, with a combined capacity of 1.65 million gallons per day (mgd):

- *Beach Drive Wastewater Treatment Plant.* This plant is located on Beach Drive next to the Sacramento River, just to the south of the proposed Project Area. Wastewater from the downtown, the traditional neighborhoods, the Homecoming development, the business park, and the Vineyards Bluff development is treated at the Beach Drive Wastewater treatment Plant. The Beach Drive Wastewater Treatment Plant has a total capacity of 0.65 mgd. The Rio Vista General Plan EIR noted the upgrade to 0.65 mgd completed in 2002 provided between 0.05 and 0.1 mgd of remaining capacity, enough for the business park, commercial construction downtown and on Highway 12, and approximately 100 additional residential units, assuming a margin of error of half.³
- *Northwest Wastewater Treatment Plant.* This plant began operation in 2006 and has a capacity of 1.0 mgd. Although the plant is owned by the City and operated by the City’s Public Works Department; the Trilogy, Liberty, Riverwalk and Del Rio Hills development projects own capacity rights to a portion of its treatment capacity. The Northwest Wastewater Treatment Plant is currently only treating wastewater from the Trilogy development, the only one of these development projects currently built and occupied. Planned future expansions will provide up to an ultimate capacity of 3.0 to 3.5 mgd, as these four projects, plus Brann Ranch and Gibbs Ranch, build out over time.

Wastewater collection infrastructure consists of a system of sewer connections and gravity-fed and pressurized lines and pump stations that convey wastewater to the wastewater treatment plants. The entire system is in need of upgrades, including rerouting gravity mains and eliminating pump stations to redirect flows to the Northwest Wastewater Treatment Plant. Collection facilities in the vicinity of the proposed Project Area include sewer lines within Beach

¹City of Rio Vista, Urban Water Management Plan, December 2005, as reported in City of Rio Vista, Del Rio Hills Planned Unit Development Draft Environmental Impact Report, December 2008, p.3-5.

²City of Rio Vista, Del Rio Hills Planned Unit Development Draft Environmental Impact Report, December 2008, pp. 4.13-16 and 4.13-17.

³City of Rio Vista, Rio Vista General Plan Draft EIR, December 2001, p. 13-6.

Drive and pump stations at the Beach Drive crossing of Marina Creek and at the east end of Marina Drive, which convey sewage to the Beach Drive Wastewater Treatment Plant.

9.3.2 Pertinent Plans and Policies

(a) Federal Clean Water Act. The Clean Water Act (CWA) gave the EPA authorization to implement pollution control programs, including setting standards for wastewater systems, water quality, and drinking water. The CWA regulates discharges of effluent to surface waters to protect water quality. Discharges are subject to the requirements of the National Pollutant Discharge Elimination System (NPDES) permitting process. In addition, Section 303 of the CWA requires individual states to adopt water quality standards which “consist of the designated uses of the navigable waters involved and the water quality criteria for such waters based upon such values.”

(b) Porter-Cologne Water Quality Control Act. The Porter-Cologne Act set out the functions of the SWRCB with respect to water quality control and establishes the nine regional water quality control boards. Each Regional Board is charged with preparing a water quality plan (Basin Plan) for its region, which lists the beneficial uses to be protected, water quality objectives, and an implementation program to meet these objectives. The Central Valley RWQCB’s Basin Plan water quality objectives for the Sacramento-San Joaquin Delta apply to the proposed Project Area.

(c) Rio Vista General Plan. The Public Facilities and Services Element of the Rio Vista General Plan contains the following relevant goal, policies and actions.

- *To provide adequate wastewater services to all existing and future development. (Goal 12.6)*
- *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. (Policy 12.6.A)*
- *Action PF-2 Development Impact Fees*
- *Action PF-3 Capital Improvement Program*
- *Action PF-4 Development Review*
- *Action PF-5 Interagency Coordination*
- *Action PF-10 Development Agreements*
- *Action PF-19 Utilities Master Plan Update*

9.3.3 Significance Criteria

Based on the CEQA Guidelines,¹ the Project would result in a significant impact on wastewater service if it would:

(a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;

¹CEQA Guidelines, Appendix G, items XVI(a, b, and e).

(b) Require or result in the construction of new wastewater facilities or expansion of existing facilities, the construction of which could cause significant environmental impacts; or

(c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

9.3.4 Impacts and Mitigation Measures

(a) **Project Impacts.** The proposed Redevelopment Plan would facilitate a total of approximately 244,500 square feet of development within the proposed Project Area, including an anticipated 110,000 square foot research station, a 150-room lodge, a 9,000 square foot restaurant, a 21,000 square foot community center and 12.3 acres of parks. As shown in Table 9.5, this projected development would generate an estimated additional wastewater treatment demand total of approximately 14,670 gallons per day (gpd) or 0.015 mgd. The added wastewater generated by new development within the proposed Project Area would require new on-site sewer infrastructure. Providing the on-site infrastructure needed to serve new development within the proposed Project Area, including a wastewater pump station and wastewater force main pipeline, is a primary objective of the proposed Redevelopment Plan. The projected 244,500 square feet of non-residential development facilitated by the proposed Redevelopment Plan is consistent with the General Plan and was included in the buildout estimates evaluated in the Rio Vista General Plan EIR. The Rio Vista General Plan EIR concluded that development south of Highway 12 would be served by the Beach Drive Wastewater Treatment Plant.¹ Development within the proposed Project Area would also be required to pay connection fees in accordance with the City's development fee schedule. Therefore, the impact of the Project related to wastewater service would be ***less than significant***.

(b) **Cumulative Impacts.** Development facilitated by the proposed Redevelopment Plan, together with other reasonably foreseeable development in the city, would result in an estimated total of approximately 6,726 new housing units and approximately 1.1 million square feet of new non-residential development. This cumulative development would result in a total wastewater demand of approximately 2.083 mgd in 2030 and would create a need for additional wastewater collection and treatment facilities. This cumulative wastewater demand projection of 2.083 mgd is greater than the existing capacity of the Northwest Treatment Plant of 2.0 mgd but less than the planned ultimate capacity of the plant of 3.0 to 3.5 mgd.

The 0.015 mgd of additional wastewater generated by development within the proposed Project Area would represent a considerable contribution to the City's cumulative wastewater demand of 2.083 mgd and its wastewater collection, treatment and disposal infrastructure needs. However, the 244,500 square feet of development facilitated by the proposed Redevelopment Plan is consistent with the General Plan, and is included in the General Plan buildout estimates considered in the Rio Vista General Plan EIR and used by the City in its wastewater system planning and capital improvement program. The Rio Vista General Plan EIR concluded that

¹City of Rio Vista, Rio Vista General Plan Draft EIR, December 2001, p. 13-17.

Table 9.5
PROJECT AND CUMULATIVE WASTEWATER GENERATION (MGD)

	<u>Residential</u> ¹	<u>Non-Residential</u> ²	<u>Total</u>
Project	--	0.015	0.015
Cumulative	2.017	0.066	2.083

SOURCE: Wagstaff/MIG 2010.

¹ Based on the city's average wastewater demand of 300 gallons per day (gpd) per residential unit.

² Based on the city's average wastewater demand of 300 gallons per day (gpd) per residential unit and 0.2 equivalent demand units (EDU) for every 1,000 square feet of non-residential space.

development south of Highway 12 would be served by the Beach Drive Wastewater Treatment Plant and that the city's new large residential developments would fund the expansion over time of and be served by the Northwest Wastewater Treatment Plant.¹ Therefore, cumulative impacts related to water service would be ***less than significant***.

9.4 POLICE

The following describes existing conditions and potential impacts of the proposed Redevelopment Plan with regard to police service. Emergency preparedness and emergency access, including access during flood events, are addressed in Section 4.6, Hazards and Hazardous Materials.

9.4.1 Setting²

Police service in Rio Vista is provided by the Rio Vista Police Department (RVPD). RVPD also occasionally operates outside of the city limits. RVPD currently operates under mutual aid agreements with the Antioch Police Department, the Solano County Sheriff's Department, Sacramento County, Yolo County and the California Highway Patrol. Rio Vista contracts with Contra Costa County for 24-hour, year-round 911 and non-emergency police dispatch services.

RVPD operates out of one police station, which is located at 50 Poppy House Road, approximately 2.0 miles from the proposed Project Area. RVPD has eight vehicles: one community service officer truck, two unmarked patrol cars, and five black and white patrol cars. RVPD also has rifles, shotguns, a radar trailer, computers, a thermal imager, and other standard police equipment.

¹City of Rio Vista, Rio Vista General Plan Draft EIR, December 2001, p. 13-17.

²City of Rio Vista 2008, pp. 4.11-1 and 4.11-2.

RVPD is currently staffed with a total of 14 full- and part-time employees: one full-time police chief, three full-time patrol sergeants, eight full-time patrol officers, 0.5 community service/code enforcement officers, and one full-time records clerk.

RVPD patrols seven days per week, 24 hours per day. RVPD divides the city into two patrol beats to ensure efficient coverage. Patrol officers work 12-hour shifts with at least two patrol officers on duty day and night. With the jail located 24 miles away in Fairfield, at least one officer remains in the City at all times to respond to calls.

RVPD has a response time goal of three minutes or less for 911 emergency calls and 10 minutes or less for non-emergency calls. Actual response times are currently within approximately five minutes for 911 emergency calls and not all non-emergency calls are responded to in less than 10 minutes.

RVPD has a staffing ratio goal of 1.5 officers per 1,000 residents; current staffing is between 1.2 and 1.5 officers per 1,000 residents.

9.4.2 Pertinent Plans and Policies

The Safety and Noise Element of the Rio Vista General Plan contains the following relevant goal and policies.

- *To maintain a professional law enforcement agency that proactively prevents crime; controls crime that the community cannot prevent; and reduces fear and enhances the security of the community. (Goal 11.4)*
- *The Police Department shall respond to both emergency and routine calls for services in a timely manner consistent with department policy. (Policy 11.4.A)*
- *Parks shall be designed to facilitate surveillance by adjoining residents, security services, and police. (Policy 11.4.D)*

9.4.3 Significance Criteria

Based on the CEQA Guidelines, the Project would have a significant impact related to police services if it would:¹

- (a) Result in a need for new or physically altered facilities, the construction of which would cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for police protection services; or
- (b) Result in inadequate emergency access.

9.4.4 Impacts and Mitigation Measures

(a) Project Impacts. Anticipated development facilitated by the proposed Redevelopment Plan includes an estimated 110,000-square-foot research station, 150-room lodge, 9,000 square foot restaurant, 21,000-square-foot community center and 12.3 acres of parks. This anticipated additional development would result in an associated increase in service calls and a

¹CEQA Guidelines, Appendix G, items XIII(a) and XV(c).

commensurate incremental need for additional staffing and equipment to overcome existing deficiencies and achieve the City's response time goal of three minutes or less for 911 emergency calls and 10 minutes or less for non-emergency calls.

The City has identified a need for an additional police station to accommodate the additional staffing and equipment needed to serve new development. Depending on its location and characteristics, the construction of a new police station could cause environmental impacts; however, the location, timing, nature, extent and severity of any potential environmental impacts are too speculative to predict or evaluate at this time. A new police station would require its own environmental review in accordance with CEQA.

As required by Section 3.36.020 of the City of Rio Vista Municipal Code, development facilitated by the Project would pay the City's municipal facilities fee toward the development of adequate police facilities and capital equipment. Therefore, the impacts of the Project related to Police Service would be ***less than significant***.

(b) Cumulative Impacts. Development facilitated by the proposed Redevelopment Plan, together with other reasonably foreseeable development in the city, would result in an estimated total of approximately 6,726 new housing units and approximately 1.1 million square feet of new non-residential development. This cumulative development would result in a corresponding increase in calls for police service and a need for additional staffing, equipment and facilities to overcome existing deficiencies and achieve the City's staffing ratio goal of 1.5 officers per 1,000 residents and response time goal of three minutes or less for 911 emergency calls and 10 minutes or less for non-emergency calls.

The City has identified a need for an additional police station to accommodate the additional staffing and equipment needed to serve new development. Depending on its location and characteristics, the construction of a new police station could cause environmental impacts; however, the location, timing, nature, extent and severity of any potential environmental impacts are too speculative to predict or evaluate at this time. A new police station would require its own environmental review in accordance with CEQA.

As required by Section 3.36.020 of the City of Rio Vista Municipal Code, cumulative development would pay the City's municipal facilities fee toward the development of adequate police facilities and capital equipment. The six large development projects that comprise this cumulative development may also pay an additional "fair share" fee toward police facilities and equipment. Therefore, cumulative impacts related to Police Service would be ***less than significant***.

9.5 FIRE PROTECTION AND EMERGENCY MEDICAL SERVICES

This section describes existing conditions related to fire and emergency medical services and the potential impacts of the proposed Specific Plan. Emergency preparedness and access, including access during flood events, and wildland fire hazard, are addressed in Chapter 15, Hazards and Hazardous Materials.

9.5.1 Setting¹

The Rio Vista Fire Department (RVFD) provides fire protection service within the city. RVFD also contracts with the Delta Fire Protection District for fire service to communities within a 38 square mile contract area.

RVFD is a full service fire department, providing fire response, limited hazardous materials response, full vehicle extrication, and 24-hour advanced life support services. RVFD also performs fire code plan checks, inspection, and enforcement; participates in educational activities to increase community awareness of fire safety and prevention; and conducts fire investigations within its jurisdiction. In the event of a major disaster, RVFD is the acting Emergency Operations Command (EOC).

Dispatching for RVPD is provided on a 24-hour per day basis by Solano County via the Contra Costa County 911 dispatch service. Fire- or medical-related 911 calls are transferred from the Contra Costa County 911 dispatch to the Solano County dispatch.

RVFD's 5,000 square foot fire station is located at 350 Main Street in downtown Rio Vista. Equipment at the fire station includes two Type I engines, one 95-foot aerial ladder, one rescue unit, one Type II wildland unit, one Type III wildland unit, one water tender, two command vehicles, and one pick-up truck. The fire station is inadequate for the RVFD's current needs; a second station is needed to maintain response times to the northwest neighborhoods.²

RVFD employs six full-time employees (three captains and three firefighters/paramedics), two part-time employees (one chief and one fire marshal), and supplements paid staff with 26 volunteer reserve fire fighters for a total of 34 personnel. There is an advanced life support (ALS) paramedic on duty 24 hours a day, seven days a week.

The response time goal for RVFD is four minutes. These response time goals are currently not met. Because the fire station is located in downtown Rio Vista, response times to calls in the northwestern portion of the City are as high as 10 minutes.

RVFD has a current ISO rating of 4.³

9.5.2 Pertinent Plans and Policies

(a) California Fire Code. The California Fire Code (CFC) contains regulations relating to the construction, maintenance, and use of buildings. Topics addressed in the code include fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous materials storage and use, provisions intended to protect

¹City of Rio Vista 2008, pp. 4.11-7 through 4.11-11.

²City of Rio Vista, City of Rio Vista General Plan 2001 Draft Environmental Impact Report, December 2001, p. 13-3.

³The Insurance Service Office (ISO) is a national rating service sponsored by fire insurance carriers. ISO ratings are based on a variety of factors, including response times, water pressure within the fire suppression system, quality of equipment and training of personnel. A rating of 1 represents exemplary public protection while a rating of 10 indicates that the area's fire-suppression program does not meet ISO minimum criteria. A rating of 4 indicates some service deficiencies.

and assist fire responders, industrial processes, and many other general and specialized fire-safety requirements for new and existing buildings and the surrounding premises. The CFC contains specialized technical regulations related to fire and life safety.

(b) California Health and Safety Code. State fire regulations are set forth in Sections 13000 et seq. of the California Health and Safety Code, which includes regulations for building standards (as set forth in the California Building Code), fire protection and notification systems, fire protection devices such as extinguishers, smoke alarms, high-rise building, childcare facility standards, and fire suppression training.

(c) Rio Vista General Plan. The Safety and Noise Element of the Rio Vista General Plan includes the following relevant goal and policies.

- *To protect against the loss of life, property, and the environment by appropriate prevention and suppression measures. (Goal 11.5)*
- *The City shall continue to pursue fire prevention programs and standards. (Policy 11.5.A)*
- *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.B)*
- *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.C)*
- *The City shall monitor fire department service levels annually concurrent with the City budget process. (Policy 11.5.D)*

9.5.3 Significance Criteria

Based on the CEQA Guidelines,¹ the redevelopment plan would create a significant impact on fire protection and EMS if its implementation would:

(a) Result in a need for new or physically altered facilities, the construction of which would cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection or EMS.

9.5.4 Impacts and Mitigation Measures

(a) Project Impacts. Anticipated development facilitated by the proposed Redevelopment Plan includes an estimated 110,000-square-foot research station, 150-room lodge, 9,000 square foot restaurant, 21,000 square foot community center and 12.3 acres of parks. This additional development would contribute to an increase in service calls and a commensurate incremental need for additional staffing and equipment to overcome existing deficiencies and achieve the RVFD response time goal of four minutes.

As required by Section 3.36.020 of the City of Rio Vista Municipal Code, development facilitated by the Project would pay the City's municipal facilities fee toward the development of adequate fire protection and emergency medical service facilities and capital equipment. In addition, new development within the proposed Project Area would be required to incorporate design features

¹CEQA Guidelines, Appendix G, item XIII(a).

identified in the California Building Code (CBC) and the California Fire Code, and the RVPD is given the opportunity to review and comment on the design of any redevelopment project that could affect fire or public safety. With payment of the municipal facilities fee, UBC and Uniform Fire Code requirements, development review, and redevelopment assistance with facility needs, the impacts of the Project related to fire protection and emergency medical service would be ***less than significant***.

(b) Cumulative Impacts. Development facilitated by the proposed Redevelopment Plan, together with other reasonably foreseeable development in the city, would result in an estimated total of approximately 6,726 new housing units and approximately 1.1 million square feet of new non-residential development. This cumulative development would result in an increase in calls for fire service and a need for additional staffing, equipment and facilities to overcome existing deficiencies and meet the RVFD response time goal of four minutes.

The needed additional fire fighters and equipment could not be accommodated at, and response time goals could not be met from, the current fire station. A new facility would be required, which could cause significant environmental effects. Depending on its location and characteristics, the construction of a new fire station could cause environmental impacts; however, the location, timing, nature, extent and severity of any potential environmental impacts are too speculative to predict or evaluate at this time. A new fire station would require its own environmental review in accordance with CEQA.

As required by Section 3.36.020 of the City of Rio Vista Municipal Code, cumulative development would pay the City's municipal facilities fee toward the development of adequate fire protection and emergency medical service facilities and capital equipment. The six large development projects that comprise this cumulative development may also pay an additional "fair share" fee toward facilities and equipment. Therefore, cumulative impacts related to fire protection and emergency medical service would be ***less than significant***.

9.6 SCHOOLS

The River Delta Unified School District (RDUSD) serves the proposed Project Area and Rio Vista. This section describes existing conditions related to the RDUSD, and the potential impacts of the proposed Redevelopment Plan.

9.6.1 Setting

The RDUSD is located along the Sacramento River within portions of Sacramento, Solano, and Yolo Counties. Although the District is a tri-county district, it is managed by and is a part of the Sacramento County Office of Education in Sacramento. Within these three counties, the District serves Birds Landing, Clarksburg, Collinsville, Courtland, Hood, Isleton, Locke, Ryde, Walnut Grove and Rio Vista. The RDUSD currently has an average enrollment of 2,050 students.

The proposed project is located within the RDUSD, a K-12 district which lies along the Sacramento River between the City of Sacramento and the City of Rio Vista. RDUSD includes parts of several jurisdictions. The RDUSD is located in Sacramento, Solano, and Yolo Counties and provides school services to the communities of Clarksburg, Hood, Courtland, Ryde, Walnut Grove, Locke, Collinsville/Birds Landing, the City of Isleton, and the City of Rio Vista

The RDUSD operates 12 schools within its boundaries: five elementary schools, two middle schools, two high schools, as well as a continuation high school, an independent study high school, and an adult school. Within the RDUSD, the Rio Vista High School Service Area contains four schools: D.H. White Elementary School (K-4), Riverview Middle School (5-8), Isleton Elementary School (K-8), and Rio Vista High School (9-12). Capacity and 2008-2009 enrollment the three Rio Vista schools is shown in Table 9.6.

9.6.2 Pertinent Plans and Policies

(a) School Facilities Act of 1986. The California School Facilities Act of 1986 (AB 2926) authorizes entities to levy statutory fees on new residential and commercial/industrial development in order to pay for school facilities. AB 2926 was revised by the passage of AB 1600, which added Section 66000 *et seq.* of the Government Code.

(b) California Government Code Sections 65995, 65996(a) and 65996(b). The California State Legislature has determined that school impact fees shall be the exclusive method of mitigating the school facilities impacts of a project or plan, has set limits on school impact fees, and has determined that payment of school impact fees shall be deemed to provide full and complete school facilities mitigation.

(c) AB 1290. Under AB 1290, which amended the CRL, the State recognized the potential adverse impact on schools from redevelopment, and mitigated the effect by specifically providing a net increase in funding for school capital improvements. The legislature specifically found in Article 16.5, Section 31, amending Section 33607.5 (g)(2) of the Health and Safety Code, that notwithstanding any other provision of law, a redevelopment agency shall not be required, either directly or indirectly, as a measure to mitigate a significant environmental effect or as part of any settlement agreement or judgment brought in any action to contest the validity of a redevelopment plan pursuant to Section 33501, to make any other payments to affected taxing entities, or to pay for public facilities that will be owned or leased to an affected taxing entity.

(d) Rio Vista General Plan. The Public Facilities and Services Element of the Rio Vista General Plan contains the following goals, policies and actions related to schools.

- *To provide the best available educational opportunities for all students, and to provide for cost-effective, multiple use of public facilities whenever feasible. (Goal 12.3)*
- *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.A)*
- *School facilities shall be provided in response to needs identified by both the district and the City. (Policy 12.3.D)*
- *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 as today. Rather than increase the 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*

Table 9.6
RDUSD RIO VISTA SCHOOLS CAPACITY AND ENROLLMENT

<u>School</u>	<u>Grades</u>	<u>Capacity</u>	<u>2008-2009 Enrollment</u>
D. H. White Elementary School	K-4	412	368
Riverview Middle School	5-8	476	330
Rio Vista High School	9-12	621	413

SOURCE: Capacity information from Economic & Planning Systems, River Delta Unified School District Facilities Master Plan, August 2004, p. V-3. Enrollment from California Department of Education Educational Demographics Unit, 2008-09 District and School Enrollment by Grade River Delta Joint Unified, July 2009, <http://data1.cde.ca.gov/dataquest>, viewed February 3, 2010.

suburban districts. The number of sites should be increased after a particular size is reached, rather than further increases to the size of facilities. The guidelines are adopted as shown in Table 12-2.

Table 12-2

SCHOOL STANDARDS

Elementary schools should contain no more than 500 students.

Middle schools should contain no more than 600 students.

High schools should contain no more than 1,000 students.

Note: These guidelines are consistent with current estimates of capacity by the River Delta Unified School District Facilities Master Plan. (Policy 12.3.G)

- *The City shall require that new and expanded facilities funded by development impact fees be constructed in the service areas from which the 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. (Policy 12.3.H)*
- *Action PF-13 Local School Fees*
- *Action PF-14 School Facilities Master Plan*

9.6.3 Significance Criteria

Based on the CEQA Guidelines,¹ the proposed redevelopment plan amendment would create a significant impact on public school services if it would:

Result in substantial adverse physical impacts associated with the provision of new or physically altered school facilities, or the need for new or physically altered school facilities, the

¹CEQA Guidelines, Appendix G, item XIII(a).

construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives of the school districts.

9.6.4 Impacts and Mitigation Measures

(a) Project Impacts. The proposed Redevelopment Plan would facilitate an anticipated total of 244,500 square feet of non-residential development within the proposed Project Area. The Project would not directly result in new residents or new students that would attend RDUSD schools. The RDUSD collects school impact fees from non-residential development within the proposed Project Area. Under California Government Code Sections 65995, 65996(a) and 65996(b), payment of fees is deemed to be full and complete mitigation. Consequently, the impact of the proposed Redevelopment Plan related to schools would be ***less than significant***.

(b) Cumulative Impacts. Development facilitated by the proposed Redevelopment Plan, together with other reasonably foreseeable development in the city, would result in an estimated total of approximately 6,726 new housing units and approximately 1.1 million square feet of new non-residential development. This cumulative development would result in an increase in service calls.

Cumulative development would be assessed RDUSD development impact fees. The California State Legislature has determined that school impact fees shall be the exclusive method of mitigating the school facilities impacts of a project or plan, has set limits on school impact fees, and has determined that payment of school impact fees shall be deemed to provide full and complete school facilities mitigation.¹ The duty of a lead agency to mitigate school impacts beyond the state-mandated fees arises only where there is a physical environmental impact. Depending on their location and characteristics, the construction of any new or expanded school facilities could cause environmental impacts; however, the location, timing, nature, extent and severity of any potential environmental impacts are too speculative to predict or evaluate at this time. School facilities construction would require its own environmental review in accordance with CEQA.

Consequently, the cumulative impacts related to schools would be ***less than significant***.

9.7 LIBRARY SERVICE

The Solano County Library provides library services in Rio Vista. This section describes the existing conditions and regulatory setting, and the potential impacts of the Project related to library service.

9.7.1 Setting

The Solano County Library operates eight branch libraries throughout the county. The 5,370 square foot Rio Vista Library is located at 44 South 2nd Street in central Rio Vista, approximately one mile north of the proposed Project Area.

The Library adopted a 20-year Facilities Master Plan in 2001, which determined system-wide space needs for books and materials, seating, technology, group study and programming areas. The Plan identified 13 capital improvement projects over 20 years in three phases. The

¹California Government Code Sections 65995, 65996(a) and 65996(b)

Facilities Master Plan adopted a new service model for the Library, incorporating increased use of technology and customer self-sufficiency for improved access and streamlined service. The Facilities Master Plan also set a goal of 0.76 square feet per capita of service population. In 2000 the Solano County Library provided only 0.23 square feet per capita of service population.

Between 2001 and 2009 the Library built two new branch libraries, adding 35,848 square feet of space for a total of 152,188 square feet in eight branch libraries. The Library also rebuilt or remodeled five other branch libraries and moved its main support functions to a new, separate building. No further projects are currently planned.

The Rio Vista Library was remodeled in 2009 at a cost of \$124,000 to incorporate the updated service and design concepts of the Facilities Master Plan. No expansion or additional changes to the Rio Vista Library are planned at this time.

In 2009, the Library had a system-wide service population of 372,970 people and 152,188 square feet of space, for 0.41 square feet per capita of service population, up 80 percent from 2001, but still short of its goal of 0.76 square feet per capita.

9.7.2 Pertinent Plans and Policies

- *To ensure the provision of adequate library services and facilities to serve all city residents. (Goal 12.2)*
- *The City shall work with the Solano County library system to provide branch libraries in order to service population increments of $\pm 10,000$. (Policy 12.2.C)*
- *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 12.2.E)*

9.7.3 Significance Criteria

Based on the CEQA Guidelines,¹ the Project would have a significant impact related to library services if it would:

- (a) Result in substantial adverse physical impacts associated with the provision of new or physically altered library facilities, or the need for new or physically altered library facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives for parks and recreational services;

9.7.4 Impacts and Mitigation Measures

(a) Project Impacts. The proposed Redevelopment Plan would facilitate an anticipated total of 244,500 square feet of non-residential development within the proposed Project Area. The Project would not directly result in new residents but nonetheless could indirectly result in an increase in service population, which would exacerbate the existing library space deficiency and increase the need for additional library space. The construction of additional library space in order to achieve the Solano County Library goal of 0.76 square feet per capita could cause a significant effect on the environment. However, the location, timing, nature, extent and severity of any potential environmental impacts are too speculative to predict or evaluate at this time.

¹CEQA Guidelines, Appendix G, item XIII(a).

Library facilities construction would require its own environmental review in accordance with CEQA. Additionally, Project-facilitated development would be required to pay the Solano County community facilities fee for administrative buildings, courts, jails, and libraries. Therefore, potential impacts related to the construction of library facilities from implementation of the Redevelopment Plan would be ***less than significant***.

(b) Cumulative Impacts. Development facilitated by the proposed Redevelopment Plan, together with other reasonably foreseeable development in the city, would result in an estimated total of approximately 6,726 new housing units and approximately 1.1 million square feet of new non-residential development. This cumulative development would result in an increase in service population, which would exacerbate the existing library space deficiency and increase the need for additional library space. The construction of additional library space in order to achieve the Solano County Library goal of 0.76 square feet per capita could cause a significant effect on the environment. However, the location, timing, nature, extent and severity of any potential environmental impacts are too speculative to predict or evaluate at this time. Library facilities construction would require its own environmental review in accordance with CEQA. Additionally, cumulative development would be required to pay the Solano County community facilities fee for administrative buildings, courts, jails, and libraries. Therefore, cumulative impacts related to library facilities would be ***less than significant***.

9.8 PARKS AND RECREATION

This section describes the existing conditions and regulatory setting related to parks and recreation and the potential impacts of the Project.

9.8.1 Setting

(a) Existing Park and Recreation Facilities. The City divides its parks into three categories: community parks, neighborhood parks and village greens. The City also provides recreational special facilities and trails. Rio Vista's public park and recreation facilities include nine parks, a public fishing pier, a basketball court area, a senior center, and a youth center. Three public school sites provide additional space for recreation. In addition, Solano County provides a regional park located on Beach Drive just to the south of the city and the proposed Project Area. Existing park and recreation facilities in the city are described below. Existing parks, trails and schools near the proposed Project Area are shown in Figure 9.1.

- *Community Parks* are large parks that serve several neighborhoods or the entire city, and contain a variety of facilities for active and passive recreation, organized sports, and night use. Community Parks have a minimum size of 10 acres and a desired size of 20 acres or more. The city currently lacks a park that fits this definition; however Egbert Field is classified as a Community Park because it provides active sports facilities that are used by the entire community.
- *Neighborhood Parks* serve nearby residents with primarily passive and informal recreational facilities, including play areas, picnic areas, open turf areas, basketball and tennis courts. Neighborhood Parks have a desired size of 4 to 10 acres. Existing Neighborhood Parks include Homecoming Park, Val de Flores Park, Brunavista Park, City Park, Drouin Park and Old Airport Basketball Court.



SOURCE: Rio Vista General Plan 2001

Figure 9.1

EXISTING AND PROPOSED PARKS AND TRAILS

- *Village Greens* are small facilities, less than two acres in size, which serve nearby residents with children's play areas, sitting areas, and limited green space. They are not large enough to contain play fields. Existing Village Greens include Fishing Pier Park, Crescent Park and Sierra Park.
- *Special Facilities* are built structures that provide for indoor recreation and other community needs, often for a specific population group, and include community centers, senior centers, teen centers, community pools, and indoor gymnasiums. Existing Special Facilities include the Senior Center, Youth Center, Municipal Boat Ramp, Fishing Pier and Fishing Pier Park.
- *Regional Parks* are large parks typically operated by agencies other than municipalities and organized around a significant geographic feature, such as a river, lake, or mountain, which serve multiple communities within a one hour drive. Rio Vista itself does not provide Regional Parks. Solano County's Sandy Beach County Park, located on Beach Drive just to the south of the city and the proposed Project Area, provides regional park facilities to the region, including picnicking, camp sites, and a boat launch ramp.
- *Trails* are pathways that serve multiple uses such as bicycling, walking, jogging, and rollerblading. The City currently has no developed trail corridors.
- *Open Space Areas* are lands set aside for preservation of significant natural resources, open space, and public education. Freshwater wetlands, the Montezuma Hills, and natural drainage corridors categorized as open space areas by the General Plan present opportunities for trails and open space corridors.

Existing Park Acreage and Standards. The Rio Vista General Plan established a goal of 5 acres per 1000 residents, broken down into 2 acres of community parks and 3 acres of neighborhood parks and village greens. Table 9.7 presents the existing park acreage, parkland ratios, and deficiencies based on .

Existing Trail Corridor Acreage and Acreage Standards. The General Plan calls for 3 acres of trail corridor per 1000 residents. This translates to one mile of trail, with a corridor width of 25 feet, per 1000 residents. Based on a General Plan buildout population of 24,000, 72 acres of trail corridor, or 24 miles of trail, whichever is greater, would be required to meet this standard. The City currently has no trails.

Park and Recreation Development Fees. The City's Park and Recreation Facilities Fee applies to subdivided and non-subdivided residential land, and to commercial and industrial development. The fee has three components: Neighborhood Parks, Community Parks and Trails. Moneys from the Parks and Recreation Facilities Fee can only be used to fund the acquisition and development of improvements to serve new development (as distinct from existing deficiencies). Because of substantially higher park development costs than when the fee was adopted in 2003, Park and Recreation Facilities Fee revenues fall short of the facilities acquisition and development costs presented in the Parks Master Plan.

Rio Vista also has a Municipal Improvements fee, which is intended to provide for public buildings and long-term capital equipment such as fire engines. In the study supporting the

Table 9.7
EXISTING PARKS ACREAGE, RATIOS AND DEFICIENCIES WITHOUT AND WITH THE PROJECT¹

	Standard (ac./1000)	Without Project			With Project		
		Ratio (ac./1000)	Required (acres)	Provided (acres)	Deficiency (acres)	Ratio (ac./1000)	Provided (acres)
Neighborhood Parks	3	1.3	24.7	10.7	14	1.3	10.7
Community Parks	2	0.6	16.4	5.0	9.4	2.1	17.3
TOTAL	5	1.9	41.1	15.7	25.4	3.4	28

SOURCE: Wagstaff/MIG 2010.

¹ Based on an estimated January 1, 2009 population of 8,222 as reported by the California Department of Finance Table E-5.

fee's adoption in 2003, the list of facilities included a community center, recreation center, senior center and swimming pool.

In addition, through Development Agreements, Rio Vista requires that new developments dedicate neighborhood parkland sufficient to meet the City's three neighborhood park acres per 1,000 population standard.

9.8.2 Pertinent Plans and Policies

(a) State Public Park Preservation Act. The primary instrument for protecting and preserving parkland is the State Public Park Preservation Act. Under the Public Resources Code, cities and counties may not acquire any real property that is in use as a public park for any non-park use unless compensation or land, or both, are provided to replace the parkland acquired. This provides no net loss of parkland and facilities.

(b) Quimby Act. California Government Code Section 66477, Subdivision Map Act, referred to as the Quimby Act, permits local jurisdictions to require the dedication of land and/or the payment of in-lieu fees solely for park and recreation purposes. The required dedication and/or fee are based upon the residential density, parkland cost, and other factors. Land dedicated and fees collected pursuant to the Quimby Act may only be used for developing new, or rehabilitating existing park or recreational facilities.

(c) Rio Vista General Plan. The General Plan establishes definitions of the types of park and recreation facilities, parkland dedication standards, specific development standards for each park and recreation facility type, and siting criteria. The General Plan sets park standards of 3 acres of neighborhood parks per 1000 population, 2 acres of community parks per 1000 population, and 1 mile of trail or 3 acres of trail corridor (at 25 feet wide) per 1000 population, whichever is greater. The General Plan also establishes a goal of providing one community park in each of the three main geographic areas within the city limits.

The Rio Vista Principles include the following principles related to parks and recreation.

Preserve and Strengthen the Downtown, Waterfront, and Historic Places

- *The Sacramento River should be made an accessible resource for the enjoyment of Rio Vista residents and the general public.*

Preserve the Environmental Resources that Define Rio Vista

- *The community should seek to connect the existing town to new developments and the Sacramento River waterfront by an extensive and interconnecting trail system. The natural drainageways, hills, and sensitive vegetation areas should be the basis for designing such a system.*

Provide Adequate Leisure and Recreation Opportunities for all Rio Vista Residents

- *A range of parks, from tot-lots and village greens to ball fields and parkways, should be distributed within all of Rio Vista's neighborhoods. Existing parks should be maintained and new parks should be provided as new neighborhoods are developed.*
- *New development should provide adequate recreation opportunities. Standards for parks, recreation facilities, and trails—and financial mechanisms for their operation and maintenance should be developed by and required of every new development.*

Ensure Ease of Mobility for all Residents, Visitors, and Businesses

- *The development of the connecting trail system suggested by the above principle should be pursued as a key circulation facility, as well as a natural resource opportunity.*

The Community Character and Design Element of the General Plan contains the following relevant goal.

- *To develop an interconnected public park and open space system. (Goal 5.3)*
- *The City shall require the development of trail connections between public parks and open space to the greatest extent feasible. (Policy 5.3.A)*
- The Open Space and Recreation Element of the General Plan contains the following relevant goals, policies and actions.
- *To create an open space system in Rio Vista that serves the needs of the community, preserves key scenic corridors, and links activity centers. (Goal 9.2)*
- *An integrated open space network 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.A)*
- *An interconnecting system of open space corridors shall be provided that incorporates trails and pedestrian paths. (Policy 9.2.B)*

- *To develop a comprehensive and unified trails and pathways system that addresses the recreation and transportation aspects of bicycle and pedestrian travel. (Goal 9.3)*
- *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 9.3.A)*
- *Bikeways, hiking trails, equestrian trails, rest areas, and picnicking accommodations shall be located within designated trail corridors wherever feasible. (Policy 9.3.C)*
- *Land development shall allow sufficient right-of-way along designated trails to ensure that scenic and aesthetic qualities of the corridor are maintained. (Policy 9.3.D)*
- *Designated trails or corridors in new development shall be constructed by the developer and offered for dedication to the City. (Policy 9.3.E)*
- *The City shall complete the trail system within previously developed areas or public lands. (Policy 9.3.G)*
- *Trails or trail/open space corridors shall be located adjacent to streets and/or areas that facilitate pedestrian access wherever feasible. (Policy 9.3.H)*
- *The City's minimum trails standard per 1,000 residents shall be as follows: 1 mile of developed trail or 3 acres of trails corridor space, whichever is greater. (Policy 9.3.I)*
- *To support the preservation and enhancement of natural landforms, natural vegetation, and natural resources as open space to the maximum extent feasible. (Goal 9.4)*
- *The City shall provide open space protection for areas of natural resource and scenic value, including wetlands, riparian corridors, floodplains, woodlands, and hillsides. (Policy 9.4.A)*
- *New development shall be designed and constructed to preserve hillsides, scenic and trail corridors, streams and streamside vegetation, wetlands, wildlife corridors, and any other areas of special ecological significance. (Policy 9.4.B)*
- *To provide a variety of leisure, recreational, and cultural opportunities for Rio Vista residents and visitors. (Goal 9.5)*
- *To provide well designed parks and recreational facilities that are accessible, attractive, affordable, safe, and uncrowded. (Goal 9.6)*
- *All regulation sports and facilities that regularly attract usage from outside the immediate neighborhood shall be located in community parks. (Policy 9.6.A)*
- *The City shall site parks based on maximum accessibility, proper topography, and safety for park users. (Policy 9.6.B)*
- *Designs of City parks, trails, and open spaces shall consider ease of maintenance, energy efficiency, and ongoing maintenance and operation costs. (Policy 9.6.C)*
- *To provide parks in the city, consistent with the rate of residential development. (Goal 9.7)*

- *The City shall provide sufficient acreage of parks needed to meet the active and passive recreation demands of the community. (Policy 9.7.A)*
- *Developers of housing shall dedicate parkland or pay in-lieu fees in accordance with the park standards of this element. (Policy 9.7.C)*
- *The City's minimum standard for required parkland per 1,000 residents shall be as shown in Table 9-4. (Policy 9.7.G)*
- *Parks shall be developed in accordance with the siting criteria in the Open Space & Recreation element. (Policy 9.7.H)*
- *To design parks that enhance neighborhood identity and character, as well as serve recreational functions. (Goal 9.8)*
- *Each park shall be given a unique identity and character through differentiated plantings, play structures, and terrain. (Policy 9.8.A)*
- *Parks shall be designed to promote community focal points and ease of access. (Policy 9.8.B)*
- *Parks shall be sited so that street frontage or other open space occurs on at least three sides. (Policy 9.8.D)*
- *Action OSR-4 Army Base Reuse Master Plan*
- *Action OSR-5 Local, State, and Federal Funds*
- *Action OSR-7 Park Definitions, Standards, and Siting Criteria*
- *Action OSR-8 Trails and Pathways Map*
- *Action OSR-12 Parks Master Plan*
- *Action OSR-15 Park Maintenance Program*

(d) Parks Master Plan. The Parks Master Plan is a long-range plan that guides the development, operation, and maintenance of the City's park, recreation, trail and open space system.

Goals and Objectives. The Park Master Plan contains the following broad goals for the type, distribution, location, and amount of park and recreation facilities:

- *Acquire and develop parks to meet the standard of 3 acres of neighborhood park and 2 acres of community park per each 1000 residents.*
- *Build special facilities such as community centers, senior centers, gymnasiums, and teen centers to support the demand for recreation programs and classes.*
- *Construct new sports fields to support the demand for active recreation.*
- *Develop a City-wide trail system to link the park system and provide additional recreation opportunities.*
- *Provide improved river access for boating, fishing, and passive enjoyment.*

- *Design open space areas to protect significant wetlands and natural drainage areas, and to provide passive recreation opportunities.*

Proposed New Facilities. In order to meet these goals and the General Plan park and trail standards and policies, the Parks Master Plan calls for a range of new parks, fields, trails and special facilities. Existing and proposed parks, trails, special facilities and recreational open space near the proposed Project Area are shown in Figure 6.1. Recommendations for the proposed Project Area include a potential community park, sports fields, a segment of the city's Primary Trail System, a proposed community center, and a potential location for a proposed aquatic center.

- Community Parks. The Parks Master Plan calls for a minimum of three new community parks, totaling 48 acres, located away from residential neighborhoods, due to potential traffic, noise, and sports field lighting impacts. The Parks Master Plan delineates five potential community park sites, including one potential Army Base Community Park within the proposed Project Area. The Plan describes this potential community park as including a public boat ramp, a riverfront pathway, observation overlooks, interpretive exhibits, and picnic areas for families and large groups. The Plan also describes up to four lighted soccer or ballfields located on the portion of the park set back from the river.
- Sports Fields. The Parks Master Plan calls for a critical mass of high-quality, lighted facilities that would support a range of league play located within a new dedicated Sports Complex or a new community park. The Plan recommends eight new hardball and softball fields and four new soccer fields either at a Sports Complex or at the Army Base Community Park. The Plan also calls for three additional basketball courts and four new tennis courts in new neighborhood or community park sites.
- Trails. The Parks Master Plan locates the Primary Trail System, which represents approximately ½ of the General Plan required trail length, with the balance of the required trail length achieved through sidewalks, and paved and unpaved trail connections within the neighborhoods connecting to the Primary Trail. The proposed alignment for the Primary Trail traverses the proposed Project Area, connecting south to Sandy Beach County Park and north along Beach Drive to Riverview Middle School, Rio Vista High School, the Marina Creek wetland open space and the rest of the city.
- Special Facilities. The Parks Master Plan recommends a new community/senior center/youth center downtown or in one of the community parks.

(e) Rio Vista Army Base Reuse Plan. The Rio Vista Army Base Reuse Plan contains the following goal related to parks and recreation.

Develop new, significant citywide-serving recreation uses and amenities at the army base, consistent with the conveyance regulations for the Army base. (Goal #1)

(f) Bridge to Beach: A Path with a View. Establishment of a connected waterfront public access trail system from the Highway 12 Bridge to Sandy Beach Regional Park is being explored in an ongoing planning effort.

9.8.3 Significance Criteria

Based on the CEQA Guidelines,¹ the Project would create a significant impact on parks and recreational services if its implementation would:

- (a) Result in substantial adverse physical impacts associated with the provision of new or physically altered parks and recreational facilities, or the need for new or physically altered parks and recreational facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives for parks and recreational services;
- (b) Result in an increased use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; or
- (c) Include recreational facilities, or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment.

9.8.4 Impacts and Mitigation Measures

(a) Project Impacts. The proposed Redevelopment Plan would facilitate an anticipated total of 244,500 square feet of non-residential development within the proposed Project Area. The Project would not directly result in new residents but the new employees of and visitors to the proposed Project Area would generate a small additional demand for park and recreation facilities. This demand would be offset by payment of the City's park and recreation facilities fee, which includes components for neighborhood parks, community parks and trails. This fee would apply to non-residential development facilitated by the Project.

The Redevelopment Agency anticipates spending approximately \$5.5 million of the tax increment revenue generated by the Project on park and recreation facilities within the proposed Project Area. Providing city-wide recreational amenities within the proposed Project Area is a basic objective of the Project. Proposed park and recreation facilities include a 12.3 acre community park with the following additional facilities:

- 21,000 square foot multi-purpose community center with indoor hardwood courts, classrooms and meeting rooms
- Outdoor active recreation areas with three soccer fields or four ballfields, outdoor basketball courts and four tennis courts
- 2-acre Children's Delta Discovery Park with interactive activities and exhibits
- Multi-use Primary Trail and riverfront promenade, connecting via non-Project off-site trail segments south to Sandy Beach County Park and north along Beach Drive to Riverview Middle School, Rio Vista High School, the Marina Creek wetland open space and the rest of the city.

These Project actions would achieve the Base Reuse Plan, General Plan and Parks Master Plan vision of a unique community gathering place that celebrates Rio Vista's river and Delta heritage. The Project would fulfill the Parks Master Plan's specific proposals for the site, which are a community park with a public boat ramp, a riverfront pathway, observation overlooks,

¹CEQA Guidelines, Appendix G, items XIII(a), XIV(a), and XIV(b).

interpretive exhibits, and picnic areas for families and large groups; up to four lighted soccer or ballfields; and a segment of the city's multi-use Primary Trail.

As shown in Table 9.7, the Project would substantially reduce the city's deficit of parkland. The 12.3 acre community park provided by the Project would more than triple the number of acres of community parks in the City, from 5.0 acres to 17.3 acres, and the city's total parkland acreage would nearly double from 15.7 acres to 28.0 acres. The Project would also realize an important segment of the city's Primary Trail system. Even so, the city's parkland acreage would still fall short of the General Plan parkland and trail standards.

The unique and substantial contribution of the Project to the city's inventory of park, recreation and trail facilities would be a **beneficial impact**.

(b) Cumulative Impacts. Development facilitated by the proposed Redevelopment Plan, together with other reasonably foreseeable development in the city, would result in an estimated total of approximately 6,726 new housing units and approximately 1.1 million square feet of new non-residential development. Residential, commercial and industrial development would be required to pay the City's park and recreation facilities fee, which includes components for neighborhood parks, community parks and trails. Park and recreation facilities may also be provided as part of new development projects. Therefore, cumulative impacts related to parks and recreation would be **less than significant**.

9.9 SOLID WASTE DISPOSAL AND RECYCLING

This section describes the existing conditions and regulatory setting related to solid waste disposal and recycling services and the potential impacts of the Project.

9.9.1 Setting

(a) Solid Waste Collection. The Rio Vista Public Works Department oversees the City's solid waste contract with Rio Vista Sanitation Service, a private company. The service includes weekly collection of garbage, recyclable materials, and a semi-annual large item collection. Rio Vista has a household hazardous waste collection facility located at the City corporation yard at 940 St. Francis Way.

(b) Solid Waste Disposal. Solid waste from Rio Vista is disposed at the Potrero Hills Landfill, located in Suisun City, approximately 18 miles west of the city. The landfill accepts wastes from communities throughout northern California. The Potrero Hills Landfill has a total permitted capacity of 21.5 million cubic yards with a remaining capacity of 8.2 million cubic yards. The landfill has an estimated closure date of January 1, 2011. A proposed expansion of the landfill would add approximately 61.6 million cubic yards of fill capacity, or approximately 35 years of additional disposal life. The expansion project has been controversial and held up in litigation. An environmental impact report on the expansion project was certified in November 2009 and various State, regional and local permits are pending.

For the Del Rio Hills Planned Unit Development, Rio Vista Sanitation Service indicated that, in the event that the Potrero Hills Landfill is not expanded and is closed in 2011, solid waste from Rio Vista would be disposed at the Hay Road Landfill in Vacaville, California. The Hay Road

Landfill has a total permitted capacity of 28.2 million cubic yards with 21.8 million cubic yards (approximately 77 percent) remaining capacity, and an estimated closure date of 2070.¹

(c) Recycling. Rio Vista does not have commercial onsite recyclable or greenwaste pickup. Rio Vista had a 67 percent diversion rate in 2006, the last year confirmed diversion rates were available from California Department of Resources Recycling and Recovery (CalRecycle).²

9.9.2 Pertinent Plans and Policies

(a) California 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 by January 1, 2000 through source reduction, recycling and composting. To help achieve this goal, the Act requires that each City and County prepare and submit a Source Reduction and Recycling Element that addresses waste characterization, source reduction, recycling, composting, solid waste facility capacity, education and public information, funding, and special wastes. AB 939 also established the goal for all California counties to provide at least 15 years of ongoing landfill capacity.

(b) California Solid Waste Reuse and Recycling Access Act of 1991. The California Solid Waste Reuse and Recycling Access Act requires areas to be set aside for collecting and loading recyclable materials in development projects and for local agencies to adopt such an ordinance.

(c) Rio Vista General Plan. The Public Facilities and Services Element of the Rio Vista General Plan contains the following relevant goal and policy.

To ensure that a healthy, safe, and economical solid waste collection system is provided to Rio Vista citizens. (Goal 12.7)

9.9.3 Significance Criteria

Based on the CEQA Guidelines³, the proposed redevelopment plan would create a significant environmental impact related to solid waste disposal and recycling services if it would:

- (a) Result in a need for new or physically altered facilities, the construction of which would cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives for solid waste disposal and recycling services;
- (b) Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs; or
- (c) Fail to comply with federal, state, and local statutes and regulations related to solid waste.

¹City of Rio Vista 2008, p. 4.11-19.

²California Department of Resources Recycling and Recovery (CalRecycle) jurisdiction profile for Rio Vista, <http://www.calrecycle.ca.gov/Profiles/Juris/JurProfile2.asp?RG=C&JURID=405&JUR=Rio+Vista>, accessed January 21, 2010.

³CEQA Guidelines, Appendix G, items XIII(a) and XVI(f and g).

9.9.4 Impacts and Mitigation Measures

(a) Project Impacts. The proposed Redevelopment Plan would facilitate an anticipated total of 244,500 square feet of development within the proposed Project Area, including a 110,000-square-foot research station, 50-room lodge, 9,000-square-foot restaurant, 21,000-square-foot community center and 12.3 acres of parks. Demolition and construction activities, and the operation of new development facilitated by the proposed Redevelopment Plan, would generate additional solid waste. Based on recent diversion rates for Rio Vista, an estimated two-thirds of this waste would be diverted through recycling and composting, and the remainder would require landfill disposal. A proposed expansion of the Potrero Hills landfill would add approximately 61.6 million cubic yards of fill capacity, or approximately 35 years of additional disposal life. If the Potrero Hills Landfill is not expanded, the Hay Road Landfill has a remaining capacity of 21.8 million cubic yards, and an estimated closure date of 2070. Given the sufficient permitted capacity of receiving landfills, the impact of the Project related to solid waste disposal would be ***less than significant***.

(b) Cumulative Impacts. Development facilitated by the proposed Redevelopment Plan, together with other reasonably foreseeable development in the city, would result in an estimated total of approximately 6,726 new housing units and approximately 1.1 million square feet of new non-residential development. This cumulative development would generate additional solid waste. Based on recent diversion rates for Rio Vista, an estimated two-thirds of this waste would be diverted through recycling and composting, and the remainder would require landfill disposal. A proposed expansion of the Potrero Hills landfill would add approximately 61.6 million cubic yards of fill capacity, or approximately 35 years of additional disposal life. If the Potrero Hills Landfill is not expanded, the Hay Road Landfill has a remaining capacity of 21.8 million cubic yards, and an estimated closure date of 2070. Given the sufficient permitted capacity of receiving landfills, cumulative impacts related to solid waste disposal would be ***less than significant***.

10. BIOLOGICAL RESOURCES

This section describes the existing conditions and regulatory setting related to biological resources within the proposed Project Area and vicinity, and associated potential impacts of the proposed Redevelopment Plan. Because the proposed Project Area is located on the bank of the Sacramento River, and activities associated with construction or operation of development facilitated by the Project may occur in or affect the river, this section includes consideration of aquatic habitat adjoining the proposed Project Area.

10.1 SETTING¹

10.1.1 Regional and Local Context

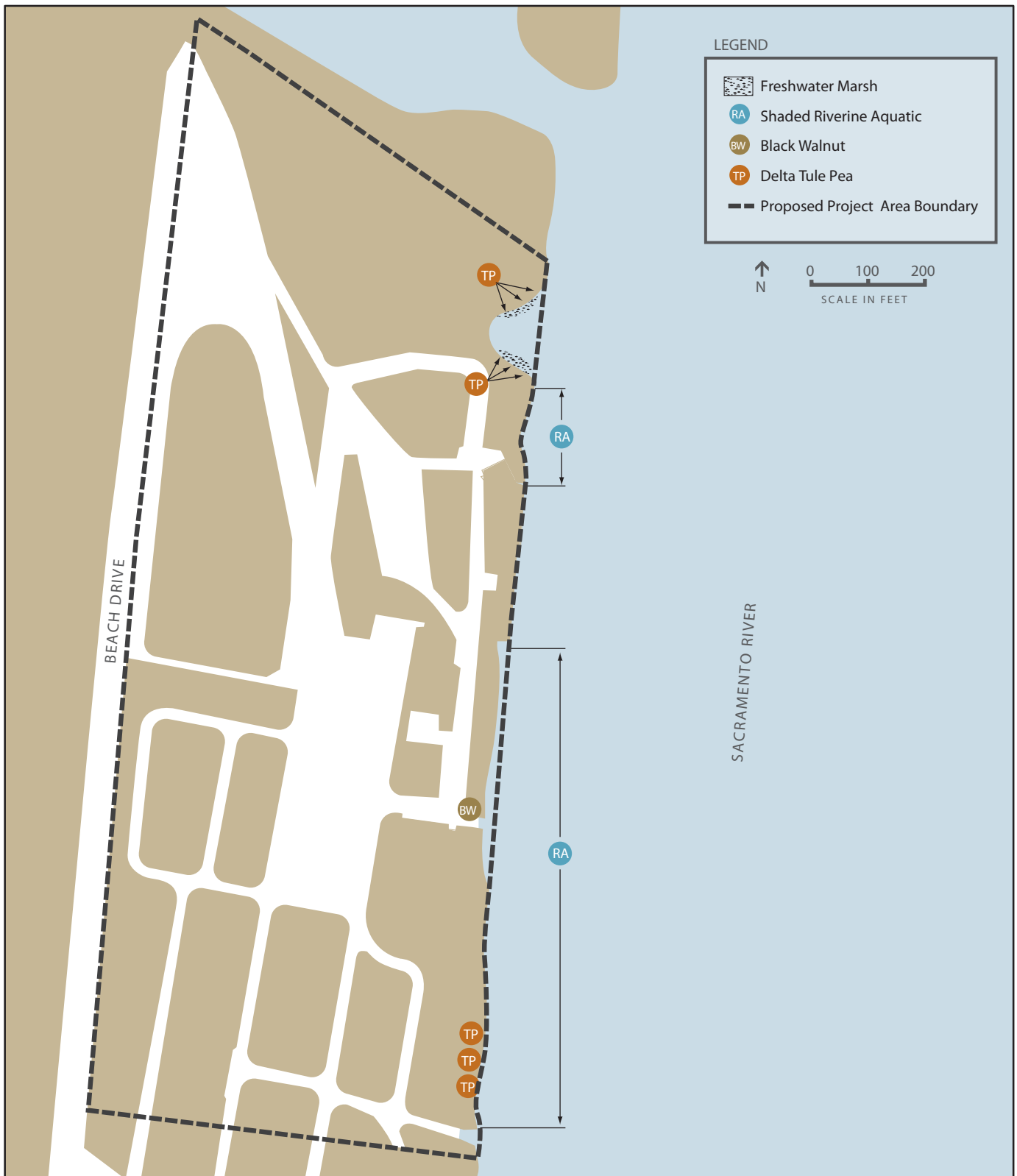
The proposed Project Area and Rio Vista are located on the west bank of the Sacramento River at the edge of the Sacramento-San Joaquin River Delta (Delta). Formed by the confluence of California's two largest rivers, the Delta provides a variety of habitat types for protected fish species, migratory waterfowl, and more than 750 animal and plant species, several of which are listed as threatened or endangered. The Sacramento River, its tributary drainages, and their associated natural riparian areas are of regional and statewide ecological significance, and among the most valuable of Rio Vista's natural resources.

10.1.2 Vegetation and Wildlife Habitats in the Proposed Project Area

(a) Developed Areas. Biological Resources within the proposed Project Area are shown in Figure 10.1. Developed areas and disturbed vegetation make up the majority of the proposed Project Area. Developed areas on the site include buildings, paved surfaces, the foundations of former buildings, boat docks, and mowed and overgrown grass areas comprised of non-native annual species (e.g., *Dactylis spp.*). Additional vegetation in the developed portions of the proposed Project Area includes horsetail (*Equisetum aruense*), blackberry (*Rubus vitifolius*), rush (*Juncus spp.*), fennel (*Foeniculum vulgare*), and various ornamental species. The small bluff behind the existing buildings also includes stands of mature trees, which may provide habitat for nesting birds.

These developed areas provide little habitat value to most wildlife species; wildlife on the property is typically comprised of species that have adapted to the human influenced landscape. Common mammal species found in the proposed Project Area, include cottontail rabbit (*Sylvilagus bachmani*), black-tailed hare (*Lepus californicus*), house mouse (*Mus musculus*), deer mouse (*Peromyscus maniculatus*), pocket gopher (*Thomomys bottae*), and squirrel species (*Citellus spp.*).

¹Unless otherwise noted, information in this section is from U.S. Army Corps of Engineers, Sacramento District, Environmental Assessment for Disposal and Reuse of the Rio Vista Army Reserve Center, California, October 2000, pp. 4-23 through 4-27.



SOURCE: U.S. Army Corps of Engineers; Wagstaff/MIG

Figure 10.1

BIOLOGICAL RESOURCES

The unused buildings remaining within the proposed Project Area potentially provide habitat for some wildlife species. For example, common birds such as house finch (*Carpodacus mexicanus*) build their nests on structures. Less abundant species, including the cliff swallow (*Hirundo pyrrhonata*) and barn swallow (*Hirundo rustica*) also use buildings, and particularly buildings near water. Bat species (*Order Chiroptera*) use buildings for short- and long-term roosts.

(b) Riparian and Shaded Riverine Aquatic Habitat. The proposed Project Area contains riparian habitat and associated shaded riverine aquatic habitat along the margins of the Sacramento River (Figure 10.1). Approximately 1,100 linear feet of riparian habitat exists along the shoreline and docks of the proposed Project Area, totaling roughly 4,000 square feet. Riparian habitat on the site contains a limited number of trees and understory shrubs, rushes, reeds and grasses.

Riparian habitat typically supports an abundant diversity of species. Typical riparian species include cottonwoods (*Populus deltoides*), alders (*Alnus spp.*), willow (*Salix spp.*), common reed (*Phragmites communis*), giant reed (*Arundo donax*), cattails (*Typhus spp.*), and grasses (*Dactylis spp.*). The Delta tule pea (*Lathyrus jepsonii var. jepsonii*), a federal species of concern also considered rare and endangered in California by the California Native Plant Society (CNPS), is documented as present within the riparian habitat of the proposed Project Area (Figure 10.1).

(c) Freshwater Marsh. Freshwater marshes are often found in open areas near rivers and lakes, and form in areas with mineral soils that drain very slowly. Freshwater marsh occurs along the sides of the marine railway. Typical vegetation includes low-growing plants like grasses and sedges. The northwestern pond turtle (*Clemmys marmorata marmorata*), a state species of concern known to occur within the proposed Project Area, is found primarily in freshwater near a wide variety of wetlands, including ponds and marshes, and builds nests along wetland margins or in adjacent uplands.

(d) Critical Habitat. The proposed Project Area is not critical habitat for any species. However, the portion of the Sacramento River adjacent to Rio Vista has been identified by the U.S. Fish and Wildlife Service (USFWS) as critical habitat for Delta smelt (*Hypomesus transpacificus*), and has been proposed as critical habitat for Central Valley spring-run Chinook salmon (*Oncorhynchus tshawytscha*). In addition, in 2009, the National Marine Fisheries Service (NMFS) designated the Sacramento River as critical habitat for the Southern Distinct population of North American Green Sturgeon (*Acipensor medirostris*).¹

10.1.3 Special-Status Species

This section discusses special-status plant and wildlife species with possible or confirmed occurrences in and around the proposed Project Area. Special status species known to occur or potentially occurring within the proposed Project Area or in the adjoining river are presented in Table 10.1. For the purposes of this assessment, special-status species are defined as plants or animals that:

¹Federal Register Vol. 74, No. 195, 50 CFR Part 226: Endangered and Threatened Wildlife and Plants: Final Rulemaking to Designate Critical Habitat for the Threatened Southern Distinct Population Segment of North American Green Sturgeon; Final Rule, October 9, 2009.

Table 10.1
 SPECIAL STATUS SPECIES KNOWN TO OCCUR OR POTENTIALLY OCCURRING WITHIN
 THE PROPOSED PROJECT AREA OR IN THE ADJOINING RIVER

<u>Species Name</u>	<u>Status (Federal/State/Other)</u>	<u>Habitat Associations</u>	<u>Likelihood of Occurrence</u>
<i>Invertebrates</i>			
Antioch Dunes anthicid beetle <i>Antichus antiochensis</i>	CNDDDB Rank: ¹ G1 S1	Extirpated from Antioch Dunes but present in several localities along the Sacramento and Feather Rivers	Unlikely
Sacramento Anthicid beetle <i>Anthicus sacramento</i>	CNDDDB Rank: G1 S1	Restricted to sand dune areas.	Unlikely
<i>Plants</i>			
Suisun marsh aster ¹ <i>Symphotrichum lentum</i>	California Native Plant Society (CNPS) Rank: 1B.2; CNDDDB Rank: G2 S2	Marshes and swamps (brackish and freshwater)	Potential
Rose mallow ¹ <i>Hibiscus lasiocarpus</i>	CNPS Rank: 2.2 CNDDDB Rank:G4 S2.2	Freshwater marshes and swamps, preferring moist fresh-water soaked riverbanks and low peat islands	Potential
Delta tule pea ¹ <i>Lathyrus jepsonii</i> var. <i>jepsonii</i>	CNPS Rank: 1B.2 CNDDDB Rank: G5T2 S2.2	Freshwater and brackish marshes	Confirmed ²
Mason's lilaepsis ¹ <i>Lilaeopsis masonii</i>	CNPS Rank: 1B.1 CNDDDB Rank:G3 S3.1	Freshwater and brackish marshes, riparian scrub	Potential
Delta mudwort ¹ <i>Limosella subulata</i>	CNPS Rank: 2.1 CNDDDB Rank: G4 S2.1	Mud Riparian scrub freshwater marsh, brackish marsh. Probably the rarest of the suite of Delta rare plants.	Potential
Northern California black walnut <i>Juglans hindsii</i>	CNPS Rank: 1B.1 CNDDDB Rank: G1 S1.1	Riparian forest, riparian woodland. Few extant native stands remain. Widely naturalized.	Confirmed ³
San Joaquin spearscale ¹ <i>Atriplex joaquiniana</i>	CNPS Rank: 1B.2 CNDDDB Rank: G2 S2	Chenopod scrub, alkali meadow, valley and foothill grassland	Potential
Carquinez goldenbush ¹ <i>Isocoma arguta</i>	CNPS Rank: 1B.1 CNDDDB Rank: G1 S1.1	Valley and foothill grassland.	Potential
<i>Fish</i>			
River lamprey <i>Lampetra ayresi</i>	CNDDDB Rank: G4 S4	Fresh and salt water. Adults are anadromous.	Potential
Pacific lamprey <i>Lampetra tridentate</i>	CNDDDB Rank: G5 S4	Fresh and salt water. Adults are anadromous.	Potential ²
Steelhead – Central Valley ESU ¹ <i>Oncorhynchus mykiss</i>	CNDDDB Rank: G5T2 S2	Streams/sloughs associated with riparian scrub, woodland and levees.	Potential ²
Winter run Chinook salmon ¹ <i>Oncorhynchus tshawytscha</i>	Federal and State Endangered; CNDDDB Rank: G5 S1	Streams/sloughs associated with riparian scrub, woodland and levees.	Potential ²

¹For information on CNDDDB conservation status ranking codes, see <http://www.natureserve.org/explorer/ranking.htm>

<u>Species Name</u>	<u>Status (Federal/State/Other)</u>	<u>Habitat Associations</u>	<u>Likelihood of Occurrence</u>
Spring run Chinook salmon ¹ <i>Oncorhynchus tshawytscha</i>	Federal and State Threatened; CNDDDB Rank: G5 S1	Streams/sloughs associated with riparian scrub, woodland and levees.	Potential ²
Sacramento splittail ¹ <i>Pogonichthys macrolepidotus</i>	CDFG Species of Concern CNDDDB Rank:G2 S2	Central Valley lakes, sloughs and estuary habitats in the Delta and Sacramento/San Joaquin river systems. Spawns over flooded vegetation between February and June.	Potential ²
Delta smelt ¹ <i>Hypomesus transpacificus</i>	Federal and State Threatened; CNDDDB Rank: G1 S1	Freshwater and tidal marsh, streams and sloughs	Potential
<i>Reptiles</i>			
Western pond turtle <i>Actinemys marmorata</i> <i>marmorata</i>	CDFG Species of Concern CNDDDB Rank: G3G4 S3	Permanent and intermittent waters of rivers, creeks, small lakes, ponds, marshes.	Confirmed ²
<i>Birds</i>			
Tricolored blackbird ¹ <i>Agelaius tricolor</i>	CDFG Species of Concern CNDDDB Rank: G2G3 S2	Breeds in freshwater marshes; nests in vegetation of marshes and thickets, and sometimes nests on ground.	Confirmed ²
Great blue heron <i>Ardea herodias</i>	CNDDDB Rank: G5 S4	Nests colonially in various tall tree species; foraging habitat includes aquatic areas less than 0.5 meters deep, including estuaries and riparian areas.	Potential
Burrowing owl ¹ <i>Athene cunicularia</i>	CDFG Species of Concern CNDDDB Rank: G4 S2	Open, dry annual or perennial grasslands, deserts and scrublands characterized by low- growing vegetation.	Unlikely
Swainson's hawk ¹ <i>Buteo swainsoni</i>	State Threatened CNDDDB Rank: G5 S2	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs and agricultural or ranch lands.	Potential
<i>Mammals</i>			
Western red bat <i>Lasiurus blossevillii</i>	CDFG Species of Concern CNDDDB Rank: G5 S3?	Roosts primarily in trees, 2 to 40 feet above ground, from sea level up through mixed conifer forests.	Potential
Hoary bat <i>Lasiurus cinereus</i>	CNDDDB Rank: G5 S4?	Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding	Potential

SOURCE: Unless otherwise noted, information is from the California Natural Diversity Database, Biogeographic Data Branch, Department of Fish and Game, February 18, 2010.

¹ Covered Species under the Solano County Multi-Species Habitat Conservation Plan (HCP).

² U.S. Army Corps of Engineers 2000, Table 4-6: Special Status Species Known to Occur or Potentially Occurring at the Rio Vista ARC, pp. 4-25 and 4-26.

³ U.S. Army Corps of Engineers 2000, p. 4-24.

- Have been designated as either rare, threatened, or endangered by the California Department of Fish and Game (CDFG) or the USFWS, and are protected under either the California or federal Endangered Species Acts;
- Are candidate species being considered or proposed for listing under these same acts;
- Are fully protected by the California Fish and Game Code, Sections 3511, 4700, 5050, or 5515; or
- Are of expressed concern to resource and regulatory agencies or local jurisdictions.

(a) Plants. In 2000, the U.S. Army Corps of Engineers documented occurrences of two federally listed plant species of concern within the proposed Project Area: the northern California black walnut (*Juglans californica* var. *hindsii*) and the Delta tule pea (*Lathyrus jepsonii* var. *jepsonii*). The Suisun Marsh aster (*Aster lentus*), a federally listed species of concern, is potentially present on the property. No federally designated threatened, endangered or proposed status plant species are known to occur in the proposed Project Area.¹

The CDFG Natural Diversity Database (NDDDB) includes a documented occurrence of the Woolly rose mallow (*Hibiscus lasiocarpus*) in the northern portion of the proposed Project Area. The Woolly rose mallow is a freshwater marsh species occurring in moist, freshwater-soaked riverbanks.

The NDDDB reports a number of sensitive plant species found in the vicinity of the proposed Project Area.² These include Mason's lilaepsis (*Lilaeopsis masonii*), the San Joaquin spearscale (*Atriplex joaquiniana*), California black walnut, Delta mudwort (*Limosella subulata*), and Suisun marsh aster (*Aster lentus*)³

(b) Wildlife. Special-status wildlife species with documented occurrences in the proposed Project Area include the northwestern pond turtle (*Clemmys marmorata marmorata*) and the tri-colored blackbird (*Agelaius tricolor*).⁴

Two special-status raptor species occur within three miles of the proposed Project Area: the Swainson's hawk (*Buteo swainsoni*), which is listed as threatened under the California Endangered Species Act; and the western burrowing owl (*Athene cunicularia*), which is a State Species of Special Concern.⁵

Based on habitat requirements and preferences, the western burrowing owl (*Athene cunicularia*), Antioch Dunes anthicid beetle (*Antichus antiochensis*), and Sacramento anthicid beetle (*Anthicus sacramento*) are not likely to be present within the proposed Project Area.

¹U.S. Army Corps of Engineers 2000. pp. 4-23, 4-24.

²United States Geological Survey 7.5-minute Quadrangle for Rio Vista, CA.

³California Department of Fish and Game Bay Delta Region, "Rio Vista Army Reserve Center Redevelopment Plan, Notice of Preparation of an Environmental Impact Report, SCH #2010012028, Sacramento River, Solano County," February 11, 2010, p. 2.

⁴U.S. Army Corps of Engineers 2000, Table 4-6, p. 4-25.

⁵California Department of Fish and Game Bay Delta Region, February 11, 2010, pp. 1-2.

(c) Fish. The Sacramento River adjoining the proposed Project Area includes critical habitat for Delta smelt (*Hypomesus transpacificus*) and Central Valley spring-run Chinook salmon (*Oncorhynchus tshawytscha*).¹ The Delta smelt is known to occur in the vicinity of the proposed Project Area.² Fall-run Chinook salmon in the Sacramento and San Joaquin River basins and their tributaries have been classified as a federal Species of Concern (2004).

The proposed Project Area does not appear to provide suitable habitat for other special-status species due to its historical use and highly disturbed nature.

10.2 PERTINENT PLANS AND POLICIES

10.2.1 Wetlands and Other Waters

Wetlands, streams and other waters are highly productive and complex ecosystems. Wetlands are areas of land that are wet either permanently or seasonally and support specially adapted vegetation. Other waters are typically unvegetated areas supporting flowing, flood, ponded or tidal waters, and include rivers and streams. The following discussion summarizes the roles and requirements of the U.S. Army Corps of Engineers, the California Regional Water Quality Control Board, and the CDFG in the regulation and protection of wetlands and other waters.

(a) U.S. Army Corps of Engineers. The U.S. Army Corps of Engineers (Corps) is the federal agency most involved in wetland regulation. Section 404 authorizes the Corps to issue permits for discharges of dredged or fill material into waters of the United States. Typical activities regulated as a discharge include the placing of rock, sediment or other fill material; covering or grading sites (and erosion from construction sites); excavation; removal of vegetation; and the placement of pilings. In addition, under Section 10 of the Rivers and Harbors Act of 1899, the Corps may authorize activities that could affect navigable waters of the United States.³ Regulated activities include the construction, excavation or deposition of materials in or over navigable waters. The Sacramento River to the mean high water line and adjacent wetlands are subject to U.S. Army Corps of Engineers (Corps) jurisdiction pursuant to Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act.

(b) Regional Water Quality Control Board. Section 401 of the Clean Water Act requires that all applicants for a federal permit that may result in any discharge into jurisdictional waters provide the agency with a certification that the proposed discharge will comply with the state's water quality control plan. In California, this certification is provided by the respective Regional Water Quality Control Board.

(c) California Department of Fish and Game. Pursuant to Section 1600 et seq. of the Fish and Game Code, the CDFG may require a Lake and Streambed Alteration Agreement for any activity that will divert, obstruct the natural flow, or change the bed, channel or bank (which may

¹U.S. Army Corps of Engineers 2000, Table 4-6, p. 4-25.

²California Natural Diversity Database, Biogeographic Data Branch, Department of Fish and Game, February 18, 2010.

³To a great extent, the regulatory authority of the Corps under Section 404 of the Clean Water Act overlaps and extends beyond the scope of its authority under the Rivers and Harbors Act of 1899.

include associated riparian resources) of any river or stream, or use material from a streambed. The CDFG may impose conditions to ensure that no net loss of wetland values or acreage results from the project. The CDFG may have jurisdiction over streamside habitats that may not qualify as wetlands under Corps jurisdiction, including riparian habitat that extends outside the ordinary high water mark or does not exhibit all three wetland indicators necessary for regulation under Section 404 of the Clean Water Act (wetland hydrology, hydrophytic vegetation and hydric soils). Under authority of the Fish and Wildlife Coordination Act, CDFG may also review applications for permits issued under Section 404 and provide comments to the Corps regarding environmental impacts. Fish and Game Code section 5650F gives CDFG jurisdiction over the discharge of any deleterious substances, such as silt from construction activities, into the waters of the State of California.

10.2.2 Species Protection

Relevant provisions of the federal Endangered Species Act, the California Endangered Species Act, the Solano County Multispecies Habitat Conservation Plan, the Migratory Bird Treaty Act, and the California Fish and Game Code are summarized below.

(a) Federal Endangered Species Act. The purpose of the federal Endangered Species Act (ESA) is “to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved” (16 USC 1531). The ESA establishes an official listing process for plants and animals considered to be in danger of extinction, establishes an official listing process for critical habitat necessary for the survival and recovery of those listed species, requires development of specific plans of action for the recovery of listed species, restricts activities perceived to harm or kill listed species or affect critical habitat (16 USC 1532, 1536), and requires federal agencies to ensure that their actions do not jeopardize the continued existence of listed species. The ESA is invoked when a property contains a federally listed threatened or endangered species that may be affected by a permit decision.

(b) California Endangered Species Act. The purpose of the California Endangered Species Act (CESA) is to conserve and enhance endangered species and their habitats. State agencies will not approve private or public projects under their jurisdiction that would jeopardize threatened or endangered species if reasonable and prudent alternatives are available. Project applicants must provide information to CDFG on the project and its likely impacts. CDFG must then prepare written findings on whether the proposed action would jeopardize a listed species or would result in the direct take of a listed species. Because CESA does not have a provision for “harm,” CDFG considerations pursuant to CESA are limited to those actions that would result in the direct take of a listed species.

(c) Solano Multispecies Habitat Conservation Plan.¹ The Solano Multispecies Habitat Conservation Plan (HCP) establishes a framework for complying with the ESA and CESA, while accommodating development projects undertaken under the permitting authority of the HCP participants within Solano County. The City of Rio Vista is a voluntary participant. The HCP is a 30-year plan and will be in effect until 2040.

Participation in the HCP allows the City of Rio Vista to conduct certain permitted activities (“covered activities”) that may result in “incidental take” of listed species covered by the HCP. Rio Vista may also extend incidental take coverage for covered activities conducted by third parties (i.e., developers) who fall under its direct regulatory control. Participation in the HCP

¹Solano County Water Agency, Administrative Draft Solano HCP, April 2009.

may facilitate or expedite the approval of development projects in that participants do not have to obtain required ESA and CESA permits or authorizations directly from the fish and wildlife regulating agencies.

Covered activities have been divided into six broad categories. The proposed Project Area is located within Zone 1 (the Urban Zone) of the HCP. Covered activities authorized in Zone 1 include development; operation of maintenance and public facilities; and habitat management and restoration.¹ Activities proposed by the Redevelopment Plan are covered activities under the HCP.

The HCP covers 37 plant, fish and wildlife species. Fifteen of these covered species are known to occur or potentially occur within the proposed Project Area or in the Sacramento River adjoining the proposed Project Area (Table 10.1).

The HCP requires that participants first avoid and minimize impacts to covered species, and/or then provide compensatory mitigation to the maximum extent practicable, considering the specific circumstances and purpose of each individual project.

(d) Migratory Bird Treaty Act. The U.S. Migratory Bird Treaty Act (MBTA) implements international treaties between the United States 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. Migratory birds include geese, ducks, shorebirds, raptors, songbirds, wading birds, seabirds, and passerine birds (such as warblers, flycatchers, swallows, etc.).

(e) California Fish and Game Code Sections 3503, 3503.5, and 3800. These sections of the Fish and Game Code prohibit the “take, possession, or destruction of birds, their nests or eggs.” Disturbance that causes nest abandonment and/or loss of reproductive effort (e.g., killing or abandonment of eggs or young) is considered a “take” and a violation of the Migratory Bird Treaty Act. These provisions apply as part of the review of any State agency authorization, agreement, or permit.

10.2.3 Invasive Aquatic Species

(a) Nonindigenous Aquatic Nuisance Prevention and Control Act. The Nonindigenous Aquatic Nuisance Prevention and Control Act (NANPCA) established the first major federal program to prevent the introduction and control the spread of introduced aquatic nuisance species. The act provides an institutional framework that promotes and coordinates research, develops and applies prevention and control strategies, establishes national priorities, educates and informs citizens, and coordinates public programs. The NANPCA does not preempt state authority to adopt or enforce aquatic invasive species control measures.²

(b) California Marine Invasive Species Act. Under California’s Marine Invasive Species Act, vessels operating in waters of the State are required to manage their ballast water, anchors, anchor chains and hulls in specific ways so as to minimize releases of nonindigenous species from vessels. Many vessels are required to exchange their ballast water at sea, retain their

¹Final Administrative Draft. August 2009.

²California Department of Fish and Game, California Aquatic Invasive Species Management Plan, January 2008, p. 48.

ballast water on board, or use other means to treat or manage their ballast water. The State Lands Commission is required to sample ballast water and sediment from 25 percent of arriving vessels subject to the Act.

10.2.4 Sacramento-San Joaquin Delta

(a) CALFED Bay-Delta Program. The CALFED Bay-Delta Program is a State department, administrated by the California Resources Agency, that acts as a consortium coordinating the activities and interests of State and federal government regarding interrelated water problems in the Sacramento-San Joaquin River Delta. The program of State and federal cooperation was formalized in June 1994 with the signing of a Framework Agreement by the State and federal agencies with management and regulatory responsibility in the San Francisco Bay-Delta Estuary. The Framework Agreement pledged that the State and federal agencies would work together in water quality standards formulation, coordination of State Water Project and Central Valley Project operations, and long-term solutions to problems in the Bay-Delta Estuary. The CALFED program has established several ecosystem restoration goals applicable to the Sacramento-San Joaquin Delta, summarized as follows:

- Recover, or contribute to the recovery of, at-risk native species.
- Rehabilitate natural processes in ways to favor native species.
- Maintain and enhance selected populations critical to commerce, sport and recreation.
- Protect and restore functional habitats, including aquatic, upland and riparian, to allow species to thrive.
- Reduce the negative impacts of invasive species and prevent additional introductions that compete with and destroy native species.
- Improve and maintain water and sediment quality to better support ecosystem health and allow species to flourish.

(b) Bay Delta Conservation Plan (BDCP). The Bay Delta Conservation Plan (BDCP) is being prepared through a collaboration of State, federal, and local water agencies, State and federal fish agencies, environmental organizations, and other interested parties. The plan will identify a set of water flow and habitat restoration actions to contribute to the recovery of endangered and sensitive species and their habitats in the Delta. The goal of the BDCP is to provide for both species habitat protection and improved reliability of water supplies. Activities and development under the proposed Redevelopment Plan may be subject to policies established by the BDCP. A joint EIR/EIS for the BDCP is currently being prepared.

10.2.5 Rio Vista General Plan

The Rio Vista General Plan Resource Conservation and Management Element contains the following relevant goals, policies and actions.

- *To preserve and protect the Sacramento River Delta as an important land resource for agriculture and wildlife habitat. (Goal 10.3)*

- *The City shall ensure that agricultural operations, natural resource protection, water-related recreation, and public facility uses shall remain the only allowable uses in the Delta Primary Zone. (Policy 10.3.A)*
- *To preserve and protect biological resources for their wildlife habitat, aesthetic, and recreational values. (Goal 10.4)*
- *The City shall require that development projects be designed to protect and enhance the area's biological resources to the greatest extent feasible. (Policy 10.4.A)*
- *The City shall encourage landowners and developers to preserve the integrity of existing terrain and natural vegetation in sensitive areas. (Policy 10.4.B)*
- *The City shall encourage the use of native and compatible non-native species--especially drought-resistant ones – in fulfilling landscaping requirements imposed as conditions of discretionary permits or for project mitigation. (Policy 10.4.C)*
- *The City shall 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 10.4.D)*
- *The City shall require new private or public developments to preserve and enhance existing native riparian habitat, unless public safety concerns require removal of habitat for flood control or other public purposes. (Policy 10.4.E)*
- *The City shall discourage direct runoff of pollutants and siltation into wetland areas from outfalls serving nearby urban development, so that pollutants and siltation will not adversely affect the value or function of wetlands. (Policy 10.4.F)*
- *To manage and protect the city's water resources. (Goal 10.5)*
- *The City shall require proposed development projects that would encroach natural drainage corridors to implement one or more of the following measures, in descending order of their desirability:*
 - *Avoid disturbance of the drainage corridor.*
 - *Replace any riparian vegetation (onsite, in-kind).*
 - *Restore other section of drainage corridor (in-kind).*
 - *Pay a mitigation fee for restoration elsewhere in the City.*
 - *Implement other mitigation as appropriate. (Policy 10.5.E)*
- *The City shall restrict development of lands in the 100-year floodplain to protect human habitation, property and sensitive wildlife or vegetation. (Policy 10.5.F)*
- *The City shall discourage grading activities during the rainy season, unless adequately mitigated, to avoid sedimentation of drainageways and damage to riparian habitat. (Policy 10.5.G)*

- *Action RCM-1 Sensitive Habitat Buffer Guidelines*
- *Action RCM-2 Fees, Dedications, and Easements*
- *Action RCM-7 Environmental/Visual Constraints Map*
- *Action RCM-8 Development Review*
- *Action RCM-9 Best Management Practices*
- *Action RCM-11 Resource Evaluation Criteria*
- *Action RCM-13 Land Use Map*
- *Action RCM-14 Agricultural Buffers*
- *Action RCM-15 Interagency Coordination*
- *Action RCM-18 Landscape Ordinance*
- *Action RCM-19 Grading and Erosion Control Ordinance*
- *Action RCM-20 Flood Insurance Rate Maps*

10.3 IMPACTS AND MITIGATION MEASURES

10.3.1 Significance Criteria

Based on Appendix G of the CEQA Guidelines,¹ the Project would have a significant impact on biological resources if it would:

- (a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;
- (b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;
- (c) Have a substantial adverse effect on federally protected wetlands as defined by section 404 of the Clean Water Act (including but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- (d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- (e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- (f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved, local, regional, or state habitat conservation plan.

¹CEQA Guidelines, Appendix G, Items IV(a) through (f).

10.3.2 Impacts And Mitigation Measures

Impact 10-1: Impacts on Wetlands and Other Waters. The proposed Project Area contains freshwater marsh, riparian and aquatic habitat areas within and adjacent to the Sacramento River which are wetlands and other waters subject to Corps jurisdiction under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act, and are regulated by the California Department of Fish and Game. Redevelopment actions or development facilitated by the proposed Redevelopment Plan would involve the direct removal or filling of wetlands, or other activities that could substantially alter the hydrology, soil, vegetation or wildlife of wetlands, or affect the conditions of navigable waters, representing a ***potentially significant impact*** (see Criteria (b) and (c) under subsection 10.3.1, "Significance Criteria," above).

Mitigation 10-1: Before undertaking any redevelopment actions or development projects that could have a substantial adverse effect on wetlands or other waters, including construction activity within the upland areas of the proposed Project Area that could involve the discharge of sediments, the applicant shall coordinate with the U.S. Army Corps of Engineers and the California Department of Fish and Game as early as possible in the design of the project to obtain a verified jurisdictional determination and either revise the development design to avoid all effects on jurisdictional wetlands and other waters or obtain and comply with a Section 404 permit and a Lake and Streambed Alteration Agreement. This measure would reduce the potential impact of the Project on wetlands and other waters to a ***less-than-significant level***.

Impact 10-2: Impacts on Special-Status Species. Four special-status plant and wildlife species are confirmed as occurring within the proposed Project Area, and an additional 17 special-status plant, wildlife and fish species have the potential to occur within the proposed Project Area or the adjoining river. In addition, the adjoining Sacramento River is critical habitat for two fish species. Redevelopment actions or development facilitated by the proposed Redevelopment Plan could adversely affect these special-status species or their habitats within the proposed Project Area or in the adjoining Sacramento River. Species may be affected during construction, when their habitats may be substantially altered or removed, or species may be affected by activities associated with the operation of future projects, including activities occurring within the adjoining Sacramento River. The possible impact of the Project on special-status species represents a ***potentially significant impact*** (see Criteria (a), (d), and (f) under subsection 10.3.1, "Significance Criteria," above).

Explanation:

Seventeen of the 21 special-status species occurring or potentially occurring in and adjacent to the proposed Project Area are covered by the Solano HCP. The western pond turtle, great

blue heron, western red bat and hoary bat are not covered by the Solano HCP. Redevelopment activities undertaken by the City or development projects that may affect covered species may comply with the ESA and CESA, and mitigate their impacts, through the HCP framework. Projects that may affect species not covered by the HCP would need to obtain required ESA and CESA permits or authorizations directly from the fish and wildlife regulating agencies. ESA and CESA permitting may also occur as part of Corps Section 404 permit and CDFG Lake and Streambed Alteration Agreement actions.

Mitigation 10-2: Development activities undertaken within the Project Area shall comply with the terms of the Solano Multispecies Habitat Conservation Plan (HCP). Upon determination of final development configuration for any individual development property that may directly or indirectly affect a special status species covered under the Solano HCP, before any construction activities are permitted to occur, a qualified biologist shall delineate all Solano HCP-listed special-status species habitat occurring within the vicinity of the proposed development and the adjoining segment of the Sacramento River. If it is determined that any special-status species may be affected by proposed construction activities or subsequent operations, including increased activity in the Sacramento River, the applicant shall implement avoidance and mitigation measures commensurate with those described in the Solano HCP, subject to review and approval by the appropriate regulatory agencies. Applicable HCP conservation measures include, but may not be limited to the following, as presented in Chapter 6: Conservation Strategy of the HCP:

- RSM 2: Permanent Impacts to Riparian, Stream and Freshwater Marsh for Non-Priority Watersheds and Drainages
- RSM 5: Temporary Impacts to Riparian and Freshwater Marsh Habitat
- RSM 6: Base Flow
- RSM 10: Stormwater Discharge

Species not Covered by the Solano HCP. For redevelopment actions or development activities that may adversely affect a sensitive species or its habitat within the proposed Project Area or the adjoining Sacramento River, an applicant-retained qualified biologist shall conduct protocol-level biological survey(s) sufficient to definitively determine whether any special-status species occur in the affected area. Such survey(s) shall be conducted following applicable guidelines of the California Department of Fish and Game and U.S. Fish and Wildlife Service to provide a conclusive determination on presence or absence. If any populations with legal protective status are encountered, the applicant shall demonstrate to City satisfaction completion of an appropriate mitigation plan in consultation with, and meeting the mitigation criteria of, the jurisdictional agencies (e.g., setback requirements, activity restrictions). If it is determined that site-specific projects will

(continued)

Mitigation 10-2 (continued):

impact listed species, early consultation with the jurisdictional wildlife agencies is encouraged.

Implementation of these measures would reduce Project impacts related to special-status species to a ***less-than-significant level***.

Impact 10-3: Aquatic Invasive Species Impacts. Future Project-facilitated development and related operations occurring in the Sacramento River adjoining the proposed Project Area, particularly boat use and mooring, may increase the spread of non-native aquatic organisms or aquatic invasive species (AIS) and thus adversely affect Delta ecosystems. AIS may be introduced and spread not only by transoceanic ships and ballast water, but by other pathways potentially resulting from the proposed Redevelopment Plan, such as biological research, hatchery operations, environmental restoration projects, and hulls, anchors and anchor chains of smaller vessels. Such effects may impede and conflict with the CALFED Bay-Delta Ecosystem Restoration Program's goal to reduce the negative impacts of invasive species and prevent additional introductions that compete with and destroy native species. The project contribution to AIS impacts would be cumulatively considerable and thus a ***significant impact*** (see Criteria (b) and (d) under subsection 10.3.1, "Significance Criteria," above).

Explanation:

The introduction of invasive species is thought to be second only to habitat loss in contributing to the decline of native species and the loss of biodiversity throughout the United States.¹ Statewide, researchers have identified 607 non-native, or likely non-native, species in California's estuarine waters. More than 250 non-native species have been found in the San Francisco Bay-Delta Estuary.²

Mitigation 10-3: Redevelopment actions and development facilitated by the proposed Redevelopment Plan shall demonstrate to City satisfaction employment of best management practices to reduce the spread of aquatic invasive species (AIS) as a result of construction activities and operations. Best management practices shall be determined in coordination with the California Department of Fish and

(continued)

¹California Department of Fish and Game, California Aquatic Invasive Species Management Plan, January 2008, p. 7.

²California Department of Fish and Game 2008, p. 2.

Mitigation 10-3 (continued):

Game, the State Lands Commission, and other agencies with AIS expertise and regulatory authority. Best management practices may address, but shall not be limited to decontamination of construction vehicles, equipment and gear; education and outreach to boating, fishing and other recreation; boat inspection and enforcement; and design, inspection and abatement related to docks and other structures. The effectiveness of these measures in reducing the spread of AIS cannot be accurately determined at this time. The Project contribution to this cumulative impact may therefore remain considerable and thus **significant and unavoidable**.

Impact 10-4: Impacts on Nesting Birds or Bat Nurseries. Project-related construction activities could reduce nesting opportunities for resident and migratory bird species that are protected by the Migratory Bird Treaty Act and bats. This would be a **potentially significant impact** (see Criterion (d) under subsection 10.3.1, "Significance Criteria," above).

Explanation:

Migratory bird species that are protected under the MBTA while nesting may use portions of the proposed Project Area during the breeding season. Redevelopment-facilitated individual construction activities may result in the disturbance of nesting birds, or in the abandonment of nests, eggs, or unfledged juveniles. The loss of an occupied nest, or substantial interference with roosting and foraging opportunities as a result of construction activities, would constitute a significant impact.

Bats may use the vacant buildings, structures and trees within the proposed Project Area as a seasonal or maternal roost. Construction activities could eliminate bat roosts and, if construction were to occur during the maternal roosting season, young bats incapable of flight could be destroyed.

Mitigation 10-4: Vegetation in the construction zones shall be trimmed or removed between September 1 and January 31 to minimize potential impacts on nesting birds. If vegetation or buildings that potentially provide nesting sites must be removed between February 1 and August 31, a qualified wildlife biologist shall conduct pre-construction surveys for nesting birds and bats. If an active nest is found, the bird shall be identified to species and the approximate distance from the closest work site to the nest estimated. No additional measures need be implemented if active nests are more than the following distances from the nearest work site: (a) 300 feet for raptors; or (b) 75 feet for other non-special-status bird

(continued)

Mitigation 10-4 (continued):

species. If active nests are closer than those distances to the nearest work site and there is the potential for destruction of a nest or substantial disturbance to nesting birds due to construction activities, a plan to monitor nesting birds or bats during construction shall be prepared by a qualified biologist and submitted to the USFWS and CDFG for review and approval. Disturbance of active nests shall be avoided to the extent possible until it is determined that nesting is complete and the young have fledged. With this mitigation measure, the impact of the Project on nesting birds or bat nurseries would be ***less than significant***.

11. DRAINAGE AND WATER QUALITY

This Chapter describes existing conditions, the regulatory and policy setting, and the potential impacts of the Project related to drainage, flooding and water quality.

11.1 SETTING

Rio Vista and the proposed Project Area are located on the west bank of the Sacramento River, at the foot of the Montezuma Hills and at the edge of the Sacramento-San Joaquin River Delta. This section describes the existing setting related to drainage, flooding and water quality.

11.1.1 Regional Hydrology

(a) Sacramento-San Joaquin Delta. Rio Vista is located within the Sacramento-San Joaquin Delta, a 600-square mile area of channels and islands at the confluence of the Sacramento and San Joaquin Rivers. The Delta is an integral part of California's water system and receives runoff from over 40 percent of the State's watersheds, including flows from the Sacramento, San Joaquin, Mokelumne, Cosumnes, and Calaveras Rivers. Surface water flows converge with flows from the Sacramento River in the Delta and eventually discharge into San Francisco Bay and the Pacific Ocean. About 21 million acre-feet of water reach the Delta annually, but actual inflow varies widely from year to year and during different parts of the month. The Sacramento River contributes an average of 77 percent of the inflow to the Delta, the San Joaquin River contributes about 15 percent, and the remainder is from the Mokelumne, Cosumnes and Calaveras Rivers.¹

Historically, the Delta Basin was a tidal marsh formed in an overflow area of the Sacramento and San Joaquin Rivers. During the early part of the 20th century, over 80 percent of the Delta was reclaimed through the placement of fill and the construction of levees, including the proposed Project Area itself.

(b) Sacramento River. The Sacramento River is the principal river in the Delta basin. The total length of the Sacramento River is approximately 327 miles. Its drainage area encompasses 27,200 square miles. Its major tributaries are the Pit and McCloud Rivers, which join the Sacramento River from the north, and the Feather and American Rivers, which are tributaries from the east.

In the vicinity of Rio Vista, the river is subject to tidal action extending upstream from San Francisco Bay and Suisun Bay, approximately 10 miles to the south.² The average tidal flow

¹City of Rio Vista, Del Rio Hills Planned Unit Development Draft Environmental Impact Report, December 2008, pp. 4.7-1 thru 4.7-2.

²U.S. Army Corps of Engineers, Environmental Baseline Survey U.S. Army Reserve Center Rio Vista, California, April 2002, p. 3-12.

into the Delta on the flood tide and out of the Delta on the ebb tide is approximately 170,000 cubic feet per second. The movement of freshwater through the Delta is superimposed on the tidal flows, with typical freshwater flows much smaller than tidal flows. The average Delta freshwater outflow for the period from 1984 to 2004 was 23,340 cubic feet per second.¹

11.1.2 Hydrology in the Proposed Project Area

(a) Topography. The proposed Project Area lies within the Delta Basin, on the west bank of the Sacramento River, south of Cache Slough and approximately 10 miles upstream of the San Joaquin River and Suisun Bay. The Montezuma Hills lie just west of the proposed Project Area, where a fault scarp extends approximately 2.5 miles parallel to the Sacramento River. The estimated height of the scarp was 100 feet before the placement of dredge fill.²

The proposed Project Area contains two topographical terraces: a flat lower terrace along the river at an average elevation of approximately 18 feet above mean sea level (msl) and an upper terrace, an average of approximately 33 feet above msl.³ With the exception of the native soils along the western edge of the property, the site is underlain by dredged spoils from the Sacramento River, composed primarily of fine sands and silty sands. A levee crossed the property before the placement of dredged material.⁴

(b) Groundwater. Groundwater is present at a depth of near the river elevation beneath portions of the site underlain by dredged fill and at a higher elevation to the west. During hazardous materials investigations of the property in May 2000, groundwater was encountered at depths between seven and 11 feet below ground on the lower terrace and between 15 and 21 feet below ground surface on the upper terrace. Groundwater flow is topographically controlled and flows from the Montezuma Hills toward the Sacramento River and the northeast corner of the site at an average gradient of 0.011 foot per foot.⁵ Bank storage probably occurs during high water conditions in the river. Beneficial uses of the groundwater basin underlying Rio Vista are municipal and domestic, industrial and agricultural.⁶

(c) Surface Water. There are no streams, ponds or impoundments on the property. The mean high water line of the adjacent Sacramento River forms the eastern boundary of the proposed Project Area. From the hills to west, Marina Creek and an unnamed tributary creek flow east toward the Sacramento River, joining flows within the freshwater marsh area just west of Beach Drive, then draining into the Delta Marina inlet immediately to the north of the proposed Project Area.

(d) Storm Water Drainage. There is no existing City storm drainage system within the Proposed Project Area. Storm water runoff is absorbed into the soil, collected in catch basins

¹City of Rio Vista 2008, p. 4-7.2.

²U.S. Army Corps of Engineers, Environmental Baseline Survey U.S. Army Reserve Center Rio Vista, California, April 2002, p. 3-12.

³U.S. Army Corps of Engineers 2000, p. 3-1.

⁴U.S. Army Corps of Engineers 2000, p. 4-7.

⁵U.S. Army Corps of Engineers 2002, p. 3-10.

⁶City of Rio Vista, Rio Vista General Plan Draft EIR, December 2001, p. 11-3.

and discharged to the river, or flows to the river by surface flow.¹ There are ten catch basins and approximately 650 linear feet of storm sewers that drain to the Sacramento River via outfall pipes remaining on the property from the previous military use.² The existing drainage system was evaluated during the preparation of the Rio Vista Army Base Reuse Plan in 1998 and determined not to be adequate for use in future development.³ The lack of adequate storm drainage infrastructure is a hindrance to redevelopment of the property.

11.1.3 Flooding

(a) Flooding in Rio Vista. Rio Vista has been flooded by the Sacramento River on numerous occasions in the past. The first recorded incident of flooding occurred in 1862, when floodwaters swept away the town. The town was relocated to higher ground at the edge of the Montezuma Hills. During the major floods of 1940 and 1942, the river reached a height over 16 feet above mean sea level (msl). The construction of major flood control facilities and water diversion projects within the upper Sacramento River basin has since moderated high river flows and mitigated flooding in Rio Vista. Flood control facilities within the city's General Plan planning area include dikes, levees, and designated floodways.⁴

(b) Flooding Potential in the Proposed Project Area. The portion of the Federal Emergency Management Agency Flood Insurance Rate Map for Rio Vista containing the proposed Project Area is shown in Figure 11.1. The proposed Project Area is not located within the 100-year floodplain. The base flood elevation is designated as 10 feet in the adjacent floodway areas within the Sacramento River to the east and the Marina Creek inlet to the north.⁵ Areas below the 10-foot elevation contour are within the 100-year floodplain. The elevation of the proposed Project Area ranges from approximately 13 feet in the area of Buildings T-7 and T-11 to over 30 feet.⁶

(c) Levees. The proposed Project Area is not protected by levees. There are no levees along the west bank of the Sacramento River south of Rio Vista.⁷

11.1.4 Water Quality

(a) Delta and Rio Vista Water Quality. Delta water is subject to large variations in salinity and mineral concentrations and is vulnerable to many anthropogenic and natural sources of water quality degradation. The Delta is listed by the Central Valley Regional Water Quality Control Board (Central Valley RWQCB) as impaired due to elevated levels of boron, chlorpyrifos, DDT,

¹U.S. Army Corps of Engineers 2000.

²City of Rio Vista Local Redevelopment Authority, Rio Vista Army Base Reuse Plan Final Report, December 1998, p. 20.

³City of Rio Vista Local Redevelopment Authority 1998, p. 20.

⁴City of Rio Vista, Rio Vista General Plan 2001, Safety and Noise Element, p. 11-10.

⁵Federal Emergency Management Agency, National Flood Insurance Program (NFIP) Map No. 06095C0539E, Effective Date: May 4, 2009.

⁶Wood Rodgers.

⁷US Army Corps of Engineers 2000, p. 4-8.

Group A Pesticides, electrical conductivity, mercury, and unknown toxicity. The quality of surface waters is impacted by ocean salinity intrusion, agricultural return waters, point-source and non-point-source pollution (both industrial and municipal), and atmospheric deposition.¹ For the most part, water quality measurements indicate there are no major sources of pollution in Rio Vista.

(b) Proposed Project Area Water Quality. Groundwater water quality has not been impaired by hazardous materials contamination from the former military use and remaining contaminants present in soil after clean up of the former Army base do not represent a significant continuing threat to groundwater quality. Surface water quality in the Sacramento River has also not been impaired by previous hazardous materials contamination on the property. Sediment samples were collected from 15 locations in the Sacramento River adjacent the site. No contaminants were detected above regulatory levels. Sediment samples performed by the Central Valley RWQCB following clean up of contaminated sediments in storm drains on the site indicated that contaminant concentrations in site sediment carried by storm runoff to the Sacramento River have been adequately reduced by site remediation activities. The results of a Screening Level Human Health Risk Assessment and an Ecological Risk Assessment indicated there is no substantial risk to public health or the environment related to groundwater, sediments or surface water. These findings are explained more fully in Chapter 15, Hazards and Hazardous Materials.²

11.2 PERTINENT PLANS AND POLICIES

11.2.1 Federal Regulations

(a) Clean Water Act. The major federal legislation governing surface waters and water quality is the Clean Water Act, as amended by the Water Quality Act of 1987. The objective of the Clean Water Act is “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” In general, implementation of many aspects of this Act has been delegated to individual states.

Important applicable sections of the Clean Water Act are as follows:

- Sections 303 and 304 provide for water quality standards, criteria, and guidelines.
- Section 401 requires an applicant for any federal permit that proposes an activity which may result in a discharge to “waters of the United States” to obtain certification from the state that the discharge will comply with other provisions of the Act. In California, certification is provided by the respective RWQCB.
- Section 402 establishes the National Pollutant Discharge Elimination System (NPDES), a permitting program for the discharge of any pollutant (except for dredge or fill material) into waters of the United States. This permit program is administered by the RWQCB and is discussed further below.

¹City of Rio Vista, Del Rio Hills Planned Unit Development Draft EIR, October 2008, p. 4.7-7.

²U.S. Army Corps of Engineers, No Further Action Record of Decision/Remedial Action Plan, United States Army Reserve Center, Rio Vista, California, December 3, 2001.

- Section 404 establishes a permit program, administered by the U.S. Army Corps of Engineers, for the discharge of dredge or fill material into “waters of the United States.” (See also Chapter 10, Biological Resources.)

(b) Floodplain Development. FEMA is responsible for determining flood elevations and floodplain boundaries based on U.S. Army Corps of Engineers studies. FEMA is also responsible for distributing the Flood Insurance Rate Maps (FIRMs), which are used in the National Flood Insurance Program (NFIP). These maps identify the locations of special flood hazard areas, including the 100-year floodplain. FEMA allows non-residential development in the floodplain. However, construction activities are restricted within the flood hazard areas depending upon the potential for flooding within each area. Federal regulations governing development in a floodplain are set forth in Title 44, Part 60 of the Code of Federal Regulations (CFR).

The City of Rio Vista requires new development to comply with FEMA’s 100-year floodplain. New development must submit geotechnical reports and hydrology studies to ensure that impervious surfaces associated with new development will not create flooding issues for other existing or new development. The 100-year floodplain must be confirmed in the developed condition.¹

11.2.2 State Regulations

California regulations include the Porter-Cologne Water Quality Control Act (Division 7 of the California Water Code), which provides the basis for water quality regulation in California and establishes the RWQCBs. The proposed Project Area is also located within the jurisdiction of the Central Valley RWQCB, which is responsible for the protection of beneficial uses of water resources within the Central Valley region.

(a) Water Quality Control Plan (Basin Plan). The RWQCB has adopted the Central Valley Region *Water Quality Control Plan* to implement plans, policies, and provisions for water quality management. The Basin Plan describes “beneficial uses” designated for major surface waters and their tributaries and contains water quality objectives intended to protect the beneficial uses. The Central Valley RWQCB has both region-wide and water body/beneficial use-specific water quality objectives.

Beneficial uses of the surface waters of the Delta include municipal, agricultural, industrial, and recreational uses, freshwater habitat, migration, spawning, wildlife habitat, and navigation. Beneficial uses for all groundwaters in the Central Valley region include or potentially include municipal, agricultural, and industrial uses.

The Central Valley RWQCB has set water quality objectives for all surface waters in the region concerning bacteria, bioaccumulation, biostimulatory substances, color, dissolved oxygen, floating material, oil and grease, population and community ecology, pH, salinity, sediment, settleable material, suspended material, sulfide, tastes and odors, temperature, toxicity, turbidity, and ammonia.²

¹City of Rio Vista Municipal Services Review, October 2006, p. B-7.

(b) National Pollutant Discharge Elimination System. The Central Valley RWQCB administers the NPDES stormwater permitting program in the Central Valley region for both construction and industrial activities. Construction sites disturbing one acre or more of land are subject to the permitting requirements of the NPDES General Permit for Discharges of Storm Water Runoff Associated with Construction Activity (General Construction Permit). For qualifying projects, the project applicant must submit a Notice of Intent to the RWQCB to be covered by the General Construction Permit prior to the beginning of construction.

The General Construction Permit requires the preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP), which also must be completed before construction begins. Implementation of the plan starts with the commencement of construction and continues through the completion of the project. Upon completion of the project, the applicant must submit a Notice of Termination to the RWQCB to indicate that construction is completed.

Rio Vista is required to operate under the NPDES Municipal Stormwater Phase II Permit (Phase II General Permit) requirements set forth in the Rio Vista Stormwater Management Plan (SWMP). Discharges of urban runoff are regulated under the SWMP through the promulgation of regulations applicable to Small Municipal Separate Stormwater Sewer Systems (MS4s). Under the Phase II General Permit, the City is required to develop, implement, and enforce a stormwater management program. The details of the development, implementation, and enforcement of the Phase II General Permit requirements are provided in the SWMP, which has not yet been approved by the Central Valley RWQCB.¹

11.2.3 City of Rio Vista

(a) Rio Vista General Plan. The General Plan Resource Conservation and Management Element contains the following relevant goals, policies and actions.

- *To preserve, protect, and enhance an interconnected system of significant open space areas, including sensitive local resource areas. (Goal 10.1)*
- *The City shall require that new development be designed and constructed to preserve the following types of areas and features as open space to the maximum extent feasible:*
 - *High erosion hazard areas*
 - *Scenic and trail corridors*
 - *Streams and riparian vegetation*
 - *Wetlands*
 - *Drainage corridors*
 - *Other significant stands of vegetation*
 - *Wildlife corridors*
 - *Key hilltops*
 - *Views of the Sacramento River*
 - *Any areas of federal, state or local significance*
 - *Sensitive Local Resource Areas shown in Figure 10-2 (Policy 10.1.C)*
- *To preserve and protect the Sacramento River Delta as an important land resource for agriculture and wildlife habitat. (Goal 10.3)*

¹PBS&J. 2008. p. 4.7-17.

- *The City shall ensure that agricultural operations, natural resource protection, water-related recreation, and public facility uses shall remain the only allowable uses in the Delta Primary Zone. (Policy 10.3.A)*
- *To manage and protect the city's water resources. (Goal 10.5)*
- *The City shall restrict development of lands in the 100-year floodplain to protect human habitation, property and sensitive wildlife or vegetation. (Policy 10.5.F)*
- *The City shall discourage grading activities during the rainy season, unless adequately mitigated, to avoid sedimentation of drainageways and damage to riparian habitat. (Policy 10.5.G)*
- *The City shall condition projects on applying pollution control measures that will restrict pollutants from entering Rio Vista's storm drain system. (Policy 10.5.H)*
- *The City shall ensure that groundwater resources are protected from contamination and overdraft. (Policy 10.5.I)*
- *To protect the visual and scenic resources of Rio Vista--recognizing their importance in the quality of life for city residents and in promoting recreation and tourism. (Goal 10.11)*
- *The City shall require new development to incorporate sound soil conservation practices and minimize land alterations. Land alterations within areas illustrated by Figures 10-2 and 5-3 (as further defined by specific site analysis required by RCM-7), shall comply with the following guidelines, illustrated by Figure 10-3:*
 - *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. (Policy 10.4.F)*
- *Implementing Actions:*
 - *RCM-1 Sensitive Habitat Buffer Guidelines*
 - *RCM-2 Fees, Dedications, and Easements*
 - *RCM-4 Natural and Cultural Resources Inventory*
 - *RCM-6 Sensitive Local Resource Areas Map*
 - *RCM-7 Environmental/Visual Constraints Map*
 - *RCM-8 Development Review*
 - *RCM-9 Best Management Practices*
 - *RCM-10 Resource Maintenance and Management Programs*
 - *RCM-13 Land Use Map*
 - *RCM-14 Agricultural Buffers*

- *RCM-15 Interagency Coordination*
- *RCM-19 Grading and Erosion Ordinance*
- *RCM-20 Flood Insurance Rate Maps*

The Safety and Noise Element contains the following relevant goal, policies and actions.

- *To minimize the potential for loss of life and property due to flooding through the use of flood control solutions that are cost effective and minimize environmental impacts. (Goal 11.2)*
- *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. (Policy 11.2.A)*
- *Through land use planning, zoning, and other restrictions, the City shall continue to regulate all uses and development in areas subject to potential flooding. (Policy 11.2.B)*
- *The City shall minimize the potential for flood damage to public and emergency facilities, utilities, roadways, and other infrastructure. (Policy 11.2.C)*
- *The City shall require new development to provide sufficient mitigation in order to ensure that the cumulative rate of peak runoff does not exceed pre-development levels. (Policy 11.2.D)*
- *SN-4 Development Review*
- *SN-5 Subdivision Ordinance Review and Update*
- *SN-6 Grading and Drainage Ordinance*
- *SN-7 Specific Plans*
- *SN-8 Land Use Map*
- *SN-9 Zoning Ordinance Review and Update*
- *SN-10 Sensitive Local Resource Areas Map*
- *SN-11 Local, State, and Federal Funds*
- *SN-12 Flood Insurance Rate Map*

(b) Rio Vista Flood Hazard Protection Ordinance. The City of Rio Vista's Flood Hazard Protection Ordinance (Municipal Code Chapter 15.16) applies to property within an Area of Special Flood Hazard as identified by FEMA. The ordinance minimizes public and private losses due to flood conditions by provisions to: restrict uses that are dangerous due to water or erosion hazards, or which result in damaging increases in erosion or flood heights or velocities; require that uses vulnerable to floods be protected against flood damage; control the alteration of natural floodplains, stream channels, and natural protective barriers that help to accommodate or channel floodwaters; control development which may increase flood damage; and prevent or regulate the construction of flood barriers which unnaturally divert floodwaters or which may increase flood hazards in other areas.¹

¹Rio Vista Municipal Code. Title 15 Buildings and Construction. Chapter 15.16. Flood Hazard Protection. Section 15.16.040. Methods of reducing flood losses.

11.3 IMPACTS AND MITIGATION MEASURES

11.3.1 Significance Criteria

Based on the CEQA Guidelines,¹ the Project would have a significant impact related to drainage and water quality if it would:

- (a) Violate any water quality standards or waste discharge requirements;
- (b) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site;
- (c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate of amount of surface runoff in a manner which would result in flooding on- or off-site;
- (d) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- (e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff;
- (f) Otherwise substantially degrade water quality;
- (g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;
- (h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows; or
- (i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam;
- (j) Inundation by seiche, tsunami or mudflow.

11.3.2 Drainage

The proposed Project Area lacks adequate storm drainage facilities to accommodate anticipated uses and development. Project-facilitated development would require the design and construction of a new storm drainage system. Development within the proposed Project Area would not connect to existing off-site drainage facilities. Storm drainage within the proposed Project Area would be collected on-site and discharged to the river.

The City has identified the provision of needed infrastructure improvements, including storm drainage facilities, as a primary objective of the Redevelopment Plan (see Section 3.3 in Chapter 3: Project Description). The Preliminary Report for the proposed Redevelopment Plan identifies storm drainage improvements within the proposed Project Area as an item for Agency funding, in addition to other site improvements. Given the size of the proposed Project Area,

¹CEQA Guidelines, Appendix G, items VIII(a), VIII(c) through (i), and XVI(c).

the flat topography, the adjacent river available for discharge, the 0.2 FAR maximum development intensity, and the design flexibility afforded by the vacant site and single parcel under City control, it is reasonable to assume that an adequate drainage system could be developed to adequately serve the planned uses and development, without causing flooding on- or off-site. Water quality issues are addressed in Section 11.4.2 below.

Construction of storm drainage facilities within the proposed Project Area could result in environmental impacts. The potential environmental impacts of the construction storm drainage facilities and other infrastructure needed to serve planned uses and development are addressed at a programmatic level in this EIR. As individual drainage and other infrastructure projects pursuant to the Redevelopment Plan are proposed, the Agency will examine the individual projects to determine whether their effects have been fully evaluated in this Program EIR, or whether additional environmental review is required.

11.3.3 Water Quality

The proposed Project Area is located next to the Sacramento river, the natural flow of drainage from the site is directly to the river, and storm drainage collected on the site is proposed to be discharged to the river. Therefore, the need to adequately protect water quality and aquatic habitats during construction and operation would be critically important.

The anticipated basic approach to Project Area stormwater quantity and quality control would be to (1) limit erosion and sedimentation during construction; (2) reduce long-term runoff by minimizing impervious cover and maximizing on-site infiltration; and (3) capture and treat long-term runoff, preferably through non-structural but also structural measures, to remove pollutants before discharge to the river.

Impact 11-1: Construction Impacts on Water Quality. Construction activities within the proposed Project Area may substantially degrade the quality of Sacramento River receiving waters. Construction activities, in particular activities involving soil disturbance, excavation, cutting/filling, and grading, could result in increased erosion on-site and sediments, pollutants and excess nutrients being carried to the adjacent Sacramento River, which would increase turbidity and sedimentation, and disrupt aquatic habitats. These possible effects represent a **potentially significant impact** (see criteria (a), (b), and (d) under subsection 11.3.1, "Significance Criteria," above).

Explanation:

During demolition, grading and construction, erosion and sediment control measures would be implemented in accordance with the City of Rio Vista's stormwater management requirements and best management practices (BMPs) for the reduction of pollutants in runoff. Development would be subject to NPDES requirements and would require the acquisition of a NPDES general construction permit.

Mitigation 11-1. Construction activities shall comply with all applicable State, regional, and City water quality provisions. As required under Regional Water Quality Control Board (RWQCB) regulations, at the time of development of each public improvement or project-facilitated private development involving the grading of more than 5,000 square feet, the applicant shall: (a) file with the RWQCB a Notice of Intent to comply with the Statewide General Permit for Construction Activities; (b) prepare and implement a project-specific Storm Water Pollution Prevention Plan (including an erosion and sediment control plan) for City review and approval prior to issuance of a grading permit; and (c) implement a monitoring and reporting program to verify the effectiveness of control measures. The NPDES General Permit-required SWPPP shall address both erosion and non-point source pollution impacts (e.g., improper handling or accidental spill of toxic materials) from project construction.

The SWPPP, at a minimum, shall follow all City ordinances and conform to the California Storm Water Best Management Practices Handbook, and shall include, but not be limited to, the following criteria:

- Immediately re-vegetate or otherwise protect all disturbed areas from both wind and water erosion upon the completion of grading activities.
- Schedule major site development work involving earth moving and excavation during the dry season (April 15 to October 15).
- Incorporate measures as necessary to protect proposed Project Area drainages from sedimentation.
- Use water bars, temporary swales and culverts, mulch and jute netting, hydroseeding, silt fences, sediment traps and sedimentation basins, as warranted to prevent surface water from eroding graded areas, to retain sediment, and to collect all drainage from disturbed areas and allow sediments and pollutants to settle out before discharge to the river.
- Water soils susceptible to wind erosion frequently during construction.

With implementation of this mitigation measure, Project construction impacts on water quality would be ***less than significant***.

Range of Possible Mitigation Measures. Since the objective of erosion control and water quality treatment measures is to reduce contaminant loading to the maximum extent practicable with implementation of the best available technologies, the best management practices (BMPs) recommended above are not fixed. Over time, new BMPs and policies may be adopted and applied by the RWQCB, the City, or by fish and wildlife agencies as a condition of regulatory permits.

Impact 11-2: Operational Impacts on Water Quality. Ongoing occupancy and operation of Project-facilitated development could substantially degrade water quality in the Sacramento River, which would be a **potentially significant impact** (see criteria (a), (b), and (d) under subsection 11.3.1, "Significance Criteria," above).

Explanation:

Project-facilitated development would increase the amount and degrade the quality of storm water runoff, which if not properly controlled before discharge, could substantially degrade water quality and disrupt aquatic habitats in the river. Trash, particulate matter, oil and grease, and building chemicals that collect on streets, parking areas, roofs, open storage areas, docks and other impervious surfaces and are then washed into drainages, could impair runoff water quality. Increased uses of herbicides, pesticides, and fertilizers associated with landscaping and the 12-acre community park could also contaminate receiving waters. New project-facilitated commercial operations and research activities could contaminate surface if potential pollutants are spilled, or stored or disposed of improperly.

Increases in the frequency or number of boats traveling in the Sacramento River to and from the proposed Estuarine Research Center could lead to resuspension of sediment, which creates various water quality problems, including depletion of dissolved oxygen levels, algae growth, and turbidity.

Mitigation 11-2. The following measures shall be implemented to address Project-related potential operational impacts on water quality:

(a) Minimize impervious cover, maximize on-site infiltration, and manage stormwater runoff to remove pollutants before discharge to the Sacramento River sufficient to meet the water quality standards of the RWQCB, using design, structural and non-structural best management practices (BMPs). BMPs may include:

- *Design and non-structural BMPs.* Smaller building footprint, vegetated roofs, pervious pavement or grid pavers, vegetated swales, rain gardens, disconnection/isolation of impervious areas.
- *Structural BMPs.* Rainwater cisterns, catch basin treatment devices, retention ponds, stormwater harvesting for reuse in irrigation or buildings.

(b) Development shall comply with the City's Storm Water Pollution Prevention Program as set forth in the City's NPDES storm water permit. As required by the City's Stormwater Quality Control Criteria Plan (as outlined in the City's Phase 1 Stormwater NPDES permit issued by the Central Valley RWQCB), prior to the occupancy of any structure, the project proponent shall establish a maintenance

(continued)

Mitigation 11-2 (continued):

entity acceptable to the City to provide funding for the operation, maintenance, and replacement costs of stormwater BMPs.

Implementation of these mitigation measures would reduce the long-term operational impacts on water quality of Project-facilitated development to a ***less than significant level***.

11.3.4 Flooding

This section describes the potential impacts of the Project related to flooding; increased flooding potential over time due to sea level rise; dam or levee failure inundation; and seiche, tsunami or mudflow.

Existing Flooding Impacts. According to the Federal Emergency Management Agency Flood Insurance Rate Map for Rio Vista, the proposed Project Area is not located within the Sacramento River 100-year floodplain (Figure 11.1). The base flood elevation is designated as 10 feet in the adjacent river and creek inlet. The lowest portion of the site in the area of Buildings T-7 and T-11 is at an elevation of approximately 13 feet, or 3 feet above the base flood elevation. Therefore, the Project would not place people or structures at unacceptable risk of injury or loss from flooding. The impact of the Project related to flooding would therefore be ***less than significant***.

Mitigation. No significant impact has been identified; no mitigation is required.

Impact 11-3: Future Flooding Impacts Related to Sea Level Rise. The proposed Project Area may be subject to flooding due to sea level rise associated with climate change. With increased on-site flooding potential in the future, Project-facilitated development could place people and structures at an increased risk of injury or loss from flooding. This possibility represents a ***potentially significant impact*** (see criteria (c), (f), (g) and (h) under subsection 11.3.1, "Significance Criteria," above).

Explanation:

The proposed Project Area adjoins the Sacramento River, which is subject to tidal action extending upstream from the Bay.¹ Tidal flows in the Delta and this portion of the river are typically much greater than freshwater flows. Regional sea level rise projections for the San Francisco Bay Area predict a 16-inch rise in sea level by mid-century and a 55-inch increase in sea level by the end of the century. Aside from seal level rise, global warming could also result in an increased potential for floods, because it could result in more precipitation falling as rain rather than snow. In such a case, water that would normally be held in the Sierra

¹US Army Corps of Engineers 2000.

Nevada until spring could flow into the Central Valley concurrently with winter storm events. A rise in sea level could cause an increase in flood stage heights in the tidal influenced portion of the Sacramento River and in the extent of areas subject to inundation during flood events.

Future waterfront development in portions of the proposed Project Area may be vulnerable to increased flooding associated with sea level rise. The area around Buildings T-7 and T-11 is at an elevation of approximately 13 feet. Maps prepared for the City showing the extent of inundation at a flood elevation of 12 feet, or two feet above the 10-foot elevation of the 100-year flood, indicate that the proposed Project Area would not be subject to flooding.¹ However, sea level rise over two feet could cause low level flooding in the area of Buildings T-7 and T-11, and other low-lying areas of the waterfront portion of the site.

Mitigation 11-3. Redevelopment projects and redevelopment-facilitated development subject to flooding as a result of predicted sea level rise shall comply with Chapter 15.16, Flood Hazard Protection, of the Rio Vista Municipal Code, even if such projects do not lie within an Area of Special Flood Hazard as identified by FEMA and thus would not otherwise be subject to the requirements of Chapter 15.16. With implementation of this mitigation measure, the impact of the Project related to increased flooding as a result of sea level rise would be ***less than significant***.

Dam or Levee Failure Inundation. Portions of Rio Vista are subject to inundation in the event of a failure of the Monticello Dam in Napa County, including areas along Marina Creek just north of the proposed Project Area. However, the proposed Project Area is not subject to dam failure inundation.² The proposed Project Area is not protected by levees. There would be ***no impact*** on the Project related to dam or levee failure inundation.

Mitigation. No significant impact has been identified; no mitigation is required.

Seiche, Tsunami or Mudflow Impacts. These are risks associated with seismic activity near large bodies of water, or the flow of mud and other debris from hillsides:

- *Seiche.* The resonant oscillation of water in an enclosed body is a seiche. Seiches are often generated by earthquakes if the oscillations happen to be at the right frequency. The coincident occurrence of severe flooding in the Sacramento River and an earthquake producing the necessary frequency of oscillation that results in natural resonance and a seiche large enough to inundate the proposed Project Area is remote and not considered to be a significant risk.

¹Wood Rodgers, Inc.

²Association of Bay Area Governments, Geographic Information Systems, Hazards Maps, Dam Failure Inundation Areas website, viewed on February 7, 2010, <http://gis.abag.ca.gov/website/dam-inundation/viewer.htm>.

- *Tsunami.* A tsunami is a series of waves created when a body of water such as an ocean is rapidly displaced on a massive scale, most commonly as the result of an earthquake. The proposed Project Area is not subject to tsunami inundation.¹
- *Mudflow.* The Proposed Project Area is not subject to risk from debris flow source areas as mapped by the Association of Bay Area Governments, based on data from the U.S. Geological Survey.²

The potential impact of the Project related to seiche, tsunami or mudflow would be ***less than significant***.

Mitigation. No significant impact has been identified; no mitigation is required.

¹Association of Bay Area Governments, Geographic Information Systems, Hazards Maps, Tsunami Inundation Emergency Planning Map website, viewed on February 7, 2010, <http://gis.abag.ca.gov/website/Tsunami-Maps/viewer.htm>.

²Association of Bay Area Governments, Geographic Information Systems, Hazards Maps, Debris-Flow Source Areas website, viewed on February 7, 2010, <http://gis.abag.ca.gov/website/landslides-df/viewer.htm>. Based on map of Debris-Flow Source Areas - San Francisco Bay Region Folio Part E" - U.S. Geological Survey.

12. NOISE

This chapter describes the existing noise setting within the proposed Project Area and vicinity, policies and regulations related to noise, and the potential noise impacts of the Project.

12.1 SETTING

12.1.1 Fundamentals of Acoustics

(a) Definitions of Noise. Noise is defined as unwanted sound. The effects of noise can range from interference with sleep, concentration, and communication, to physiological stress, and at higher noise levels, hearing loss.

Sound levels are usually measured and expressed in decibels (dB), with 0 dB corresponding roughly to the threshold of hearing. The decibel scale is logarithmic, not linear. In other words, two sound levels 10 dB apart differ in acoustic energy by a factor of 10. The term "decibels" and other related technical terms are defined in Table 12.1.

(b) Human Sensitivity to Noise. The method commonly used to quantify environmental noise involves measurement of all frequencies of sound, with an adjustment to reflect the fact that human hearing is less sensitive to low and high frequencies than to midrange frequencies. This measurement adjustment is called "A" weighting. A noise level so measured is called an A-weighted sound level (dBA).¹ Examples of typical A-weighted noise levels in the environment and industry are provided in Table 12.2.

Environmental noise fluctuates in intensity over time. Therefore, time-averaged noise level computations are typically used to quantify noise levels and determine impacts. The two average noise level descriptors most commonly used are L_{dn} and CNEL. L_{dn} , the day/night average noise level, is the 24-hour average, with a 10 dBA penalty added for nighttime noise (10:00 PM to 7:00 AM) to account for the greater human sensitivity to noise during this period. CNEL, the community equivalent noise level, is similar to L_{dn} , but adds a five dBA penalty to evening noise (7:00 PM to 10:00 PM).

One way of anticipating a person's subjective reaction to a new noise is to compare the new noise with the existing noise environment to which the person has become adapted, i.e., the so-called "ambient" noise level. With regard to increases in A-weighted noise levels, knowledge of the following relationships will be helpful in understanding this EIR chapter:

¹In practice, the level of a sound source is conveniently measured using a sound level meter that includes an electrical filter corresponding to the A-weighting curve.

Table 12.1
DEFINITIONS OF ACOUSTICAL TERMS

<u>Term</u>	<u>Definitions</u>
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, which is 20 micropascals (20 micronewtons per square meter).
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this report are A-weighted.
L_{01} , L_{10} , L_{50} , L_{90}	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Equivalent Noise Level, L_{eq}	The average A-weighted noise level during the measurement period.
Community Noise Equivalent Level, CNEL	The average A-weighted noise level during a 24-hour day, obtained after addition of 5 decibels in the evening from 7:00 PM to 10:00 PM and after addition of 10 decibels to sound levels in the night between 10:00 PM and 7:00 AM.
Day/Night Noise Level, L_{dn}	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10:00 PM and 7:00 AM.
L_{max} , L_{min}	The maximum and minimum A-weighted noise level 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.
Single-Event Noise Exposure Level (SEL)	The sound exposure level of a single noise event (such as an aircraft flyover or a train passby) measured over the time interval between the initial and final times for which the sound level of the single event exceeds the background noise level.

SOURCE: Illingworth & Rodkin, Inc.

Table 12.2
TYPICAL SOUND LEVELS MEASURED IN THE ENVIRONMENT AND INDUSTRY

<u>A-Weighted At a Given Distance from Noise Source</u>	<u>Sound Level in Decibels</u>	<u>Noise Environments</u>	<u>Subjective Impression</u>
	140		
Civil Defense Siren (100')	130		
Jet Takeoff (200')	120		Pain Threshold
	110	Rock Music Concert	
Pile Driver (50')	100		Very Loud
Ambulance Siren (100')			
	90	Boiler Room	
Freight Cars (50')		Printing Press Plant	
Pneumatic Drill (50')	80	In Kitchen With Garbage Disposal Running	
Freeway (100')			
	70		Moderately Loud
Vacuum Cleaner (10')	60	Data Processing Center	
		Department Store	
Light Traffic (100')	50	Private Business Office	
Large Transformer (200')			
	40		Quiet
Soft Whisper (5')	30	Quiet Bedroom	
	20	Recording Studio	
	10		Threshold of Hearing
	0		

SOURCE: Illingworth & Rodkin, Inc.

- Except in carefully controlled laboratory experiments, a change of one dBA cannot be perceived.
- Outside of the laboratory, a three-dBA change is considered a just-perceivable difference.
- A change in noise level of at least five dBA is required before any noticeable change in community response would be expected.
- A 10 dBA increase is subjectively heard as approximately a doubling in loudness, and would almost certainly cause an adverse change in community response.

Stationary point sources of noise, including stationary mobile sources such as idling vehicles, attenuate (lessen) at a rate of 6 to 9 dBA per doubling of distance from the source, depending on environmental conditions (i.e. atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres, or a street with moving vehicles, would typically attenuate at a lower rate.

(c) Sleep and Speech Interference. The thresholds for speech interference indoors are about 45 dBA if the noise is steady and above 55 dBA if the noise is fluctuating. Outdoors the thresholds are about 15 dBA higher. Steady noise of sufficient intensity (above 35 dBA) and fluctuating noise levels above about 45 dBA have been shown to affect sleep. Interior residential standards for multi-family dwellings are set by the State of California at 45 dBA L_{dn} . Typically, the highest steady traffic noise level during the daytime is about equal to the L_{dn} , and nighttime levels are 10 dBA lower. The standard is designed for sleep and speech protection and most jurisdictions apply the same criterion for all residential uses.

Typical structural attenuation is 12 to 17 dBA with open windows. With closed windows in good condition, the noise attenuation factor is around 20 dBA for an older structure and 25 dBA for a newer dwelling. Sleep and speech interference is therefore possible when exterior noise levels reach about 57 to 62 dBA L_{dn} with open windows and 65 to 70 dBA L_{dn} if the windows are closed. Levels of 55 to 60 dBA are common along collector streets and secondary arterials, while 65 to 70 dBA is a typical value for a primary/major arterial. Levels of 75 to 80 dBA are normal noise levels at the first row of development outside a freeway right-of-way. In order to achieve an acceptable interior noise environment, bedrooms facing secondary roadways need to be able to have their windows closed, and those facing major roadways and freeways typically need special glass windows.

12.1.2 Existing Noise Environment

(a) Existing Noise Receptors. Some land uses are more sensitive to noise than others. These sensitive uses are commonly referred to as “sensitive receptors”, and normally include residences, hospitals, churches, libraries, schools, and retirement homes. Noise sensitive land uses are typically given special attention because activities at these uses require relatively quiet environments.

Sensitive receptors in Rio Vista primarily consist of residential land uses. In the vicinity of the proposed Project Area, sensitive receptors include the few residences across Beach Drive near the northwest and southwest corners of the Project Area, and residential apartments at the U.S. Coast Guard Station adjacent to the Project Area to the south. In addition, sensitive receptors that could be affected by traffic noise from vehicle trips generated by the Project include

residences along streets in central Rio Vista, notably residences located on 2nd Street, as well as Riverview Middle School.

(b) Existing Noise Sources. In Rio Vista, noise levels are generated primarily by transportation-related noise sources, including Highway 12 traffic, which includes a substantial amount of truck traffic, and aircraft activity at the Rio Vista Airport. Office and commercial uses, industry, agriculture, recreational and public facilities, and gas well compressors, are common fixed sources of noise. Temporary fixed noise sources include construction and natural gas well drilling. Existing noise sources near the proposed Project Area include traffic on Beach Drive and 2nd Street, boat traffic and operations at the Delta Marina, and recreation activity at Sandy Beach Regional Park.

Usually, the most likely existing source of ground-borne vibration is roadway truck and bus traffic. Trucks and buses typically generate ground-borne vibration velocity levels of around 63 VdB, but could reach 72 VdB where trucks and buses pass over bumps in the road. Loaded trucks can create even higher levels of VdB.

12.2 PERTINENT PLANS AND POLICIES

12.2.1 State of California Noise Insulation Standards

The State Building Code, Title 24, Part 2 (updated August 1, 2008) of the California Code of Regulations (CCR) establishes uniform minimum noise insulation performance standards to protect persons within new buildings which house people, including hotels, motels, dormitories, apartment houses, and dwellings other than single-family dwellings. Title 24 mandates that interior noise levels attributable to exterior sources shall not exceed 45 dB Ldn or CNEL in any habitable room. Title 24 also mandates that for structures containing noise sensitive uses to be located where the Ldn or CNEL exceeds 60 dB, an acoustical analysis must be prepared to identify mechanisms for limiting exterior noise to the prescribed allowable interior levels. If the interior allowable noise levels are met by requiring that windows be kept closed, the design for the structure must also specify a ventilation or air conditioning system to provide a habitable interior environment.

12.2.2 City of Rio Vista

(a) Rio Vista General Plan. The following General Plan goals and policies are relevant to consideration of Project-related noise impacts:

Goal 11.12 To protect noise-sensitive land uses from new noise-generating uses that would be incompatible with such sensitive receptors.

Policy 11.12.A The City shall implement the standards in Table [8.3] for new uses affected by traffic and airport noise.

Policy 11.12.B The City shall require appropriate noise attenuation measures to be included in the project design for proposed noise-sensitive uses in proximity to existing noise-producing uses, as needed, to be in compliance with the standards in Tables [8.4] and [8.5].

Table 12.3
NOISE STANDARDS FOR NEW USES AFFECTED BY TRAFFIC AND AIRPORT NOISE

<u>New Land Use</u>	<u>Outdoor Activity Area - Ldn</u>	<u>Interior - Ldn/Peak Hour Leq¹</u>	<u>Notes</u>
All residential	60-65	45	2, 3, 4, 8
Transient lodging	65	45	5
Hospitals and nursing homes	60	45	6
Theaters and auditoriums	---	35	
Churches, meeting halls, schools, and libraries	60	40	
Office buildings	65	45	7
Commercial buildings	65	50	7
Playgrounds and parks	65	---	
Industry	65	50	7

SOURCE: Rio Vista General Plan 2001, Safety and Noise Element, Table 11-2.

Notes:

1. For traffic noise in the City of Rio Vista, Ldn and peak-hour Leq values are estimated to be approximately similar. Interior noise level standards are applied in noise-sensitive areas of the various land uses, with windows and doors in the closed positions.
2. Outdoor activity areas for single-family residential uses are defined as back yards. For large parcels or residences with no clearly defined outdoor activity area, the standard shall be applicable within a 100-foot radius of the residence.
3. For multi-family residential uses, the exterior noise level standard shall be applied at the common outdoor recreation area, such as at pools, play areas, or tennis courts. Where such areas are not provided in multi-family residential uses, the standards shall be applied at individual patios and balconies of the development.
4. Where it is not possible to reduce noise in outdoor activity areas to 60 dB Ldn or less using a practical application of the best available noise reduction measures, an exterior noise level of up to 65 dB Ldn may be allowed—provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.
5. Outdoor activity areas of transient lodging facilities include swimming pool and picnic areas.
6. Hospitals are often noise-generating uses. The exterior noise level standards for hospitals are applicable only at clearly identified areas designated for outdoor relaxation by either hospital staff or patients.
7. Only the exterior spaces of these uses designated for employee or customer relaxation are considered sensitive.
8. These standards are consistent with the Airport/Land Use Compatibility Plan (Solano County Airport Land Use Commission, 1988).

Table 12.4
NOISE STANDARDS FOR NEW USES AFFECTED BY NON-TRANSPORTATION NOISE

<u>New Land Use</u>	<u>Outdoor Activity Area - Leq</u>		<u>Interior - Leq</u>	<u>Notes</u>
	<u>Daytime</u>	<u>Nighttime</u>	<u>Day & Night</u>	
All residential	50	45	35	1, 2, 7, 8
Transient lodging	55	---	40	3
Hospitals and nursing homes	50	45	35	4, 8
Theaters and auditoriums	---	---	35	
Churches, meeting halls, schools, and libraries	55	---	40	
Office buildings	55	---	45	5, 6
Commercial buildings	55	---	45	5, 6
Playgrounds and parks	65	---	---	6
Industry	65	50	50	5

SOURCE: Rio Vista General Plan 2001, Safety and Noise Element, Table 11-3.

Notes:

1. Outdoor activity areas for single-family residential uses are defined as back yards. For large parcels or residences with no clearly defined outdoor activity area, the standard shall be applicable within a 100-foot radius of the residence.
2. For multi-family residential uses, the exterior noise level standard shall be applied at the common outdoor recreation area, such as at pools, play areas, or tennis courts. Where such areas are not provided in multi-family residential uses, the standards shall be applied at individual patios and balconies of the development.
3. Outdoor activity areas of transient lodging facilities include swimming pool and picnic areas, and are not commonly used during nighttime hours.
4. Hospitals are often noise-generating uses. The exterior noise level standards for hospitals are applicable only at clearly identified areas designated for outdoor relaxation by either hospital staff or patients.
5. Only the exterior spaces of these uses designated for employee or customer relaxation are considered sensitive to noise.
6. The outdoor activity areas of office, commercial, and park uses are not typically used during nighttime hours.
7. It may not be possible to achieve compliance with this standard at residential uses located immediately adjacent to loading dock areas of commercial uses while trucks are unloading. The daytime and night-time noise level standards applicable to loading docks shall be 55 and 50 dB Leq, respectively.
8. The City will apply noise performance standards as outlined in the policies of this Safety & Noise element to ensure that the noise generated from natural gas pipeline compressors is not intrusive for residents living near these sites. Adopting the recommendations of the State's Model Noise Control Ordinance for rural residential areas, the City will adopt a noise standard of not greater than 45 dBA at the residential property line. This higher-than-usual standard for outdoor noise accounts for the continual generation of "white noise" resulting from the compression in natural gas pipelines.

General Notes:

- a. The standards shall be reduced by 5 dB for sounds consisting primarily of speech or music and for recurring impulsive sounds.
- b. If the existing ambient noise level exceeds the standards in this table, the noise level standards shall be increased at 5-dB increments to encompass the ambient level.

Policy 11.12.C Where noise attenuation is required to meet the standards of this element, an emphasis shall be placed on site planning and project design. These measures may include, but are not limited to, building orientation, setbacks, landscaping and building construction practices.

Policy 11.12.D The use of noise barriers, such as sound walls, shall be considered as a means of achieving the noise standards only after other practical design-related noise mitigation measures have been integrated into the project.

GOAL 11.15 TO MINIMIZE THE NUISANCE OF NOISE GENERATED BY CONSTRUCTION ACTIVITIES.

Policy 11.15.A The City shall regulate construction noise to reduce impacts on adjacent uses consistent with Section 513 of the Zoning Ordinance (Noise Regulation).

Policy 11.15.B Noise associated with construction activities shall be exempt from the noise standards cited in Table [8.5].

Policy 11.15.C The City shall limit construction activities to between the hours of 7:00 a.m. and 5:00 p.m. unless an exemption is received from the City to cover special circumstances.

Policy 11.15.D The City shall require all internal combustion engines used in conjunction with construction activities to be muffled according to the equipment manufacturer's requirements.

(b) Rio Vista Municipal Code. Noise regulations within the City of Rio Vista Municipal Code are found in Chapter 17.52, Noise Control. Chapter 17.52 regulates noise related to airport operations, highway operations, and construction activities. Section 17.52.030, Construction Equipment Noise, prohibits construction activities within a residential zone, or within 500 feet of a residential zone, other than between the hours of 7:00 a.m. and 7:00 p.m., except on Sundays, and except in the case of emergencies.

12.3 IMPACTS AND MITIGATION MEASURES

12.3.1 Significance Criteria

Based on the CEQA Guidelines¹, the Project would have a significant impact related to noise if it would result in:

- (a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- (b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;
- (c) Cause a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project; or

¹CEQA Guidelines, Appendix G, item XI(a, b, c, d).

(d) Cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

For noise sources such as surface traffic, a 3 dBA change in noise is generally perceived as being a barely perceptible change, a 5 dBA change is considered to be a distinctly perceptible change, and a 10 dBA change is perceived as a doubling of sound level. A significant impact would be identified if land uses proposed by the project would be exposed to noise levels exceeding the City's established guidelines for noise and land use compatibility. A significant noise impact would also result if noise levels increase substantially at existing noise-sensitive land uses (e.g., residences). Following common noise impact assessment practice, a project-related increase in noise level (e.g., traffic noise) of 5 dBA or more above the ambient noise level at a sensitive receptor (e.g., at the property line of a residential, school, or other noise-sensitive use).

12.3.2 Short-Term Construction Noise

Impact 12-1: Construction Noise. Redevelopment activities within the proposed Project Area, including the demolition of buildings and the construction of new roads, infrastructure, park and recreation facilities, and other improvements, as well as the construction of new development stimulated by the proposed Redevelopment Plan, would generate short-term temporary construction noise and/or groundborne vibration. Construction noise and groundborne vibration effects would occur in phases, including demolition of existing structures, grading and excavation, construction of foundations (possibly including pile driving), erection of new structures, and finishing. These construction activities could expose the few existing residences across Beach Drive near the northwest and southwest corners of the Project Area, and residential apartments at the U.S. Coast Guard Station adjacent to the Project Area to the south, to substantial temporary increases in ambient noise levels in excess of City noise standards, or to substantial temporary groundborne vibration. These possible effects represent a **potentially significant impact** (see criteria [a], [b], and [d] in subsection 13.3.1, "Significance Criteria," above).

Explanation:

The effects of noise resulting from construction depend on the noise generated by various pieces of construction equipment, the timing and duration of noise-generating activities, and the distance between construction noise sources and noise-sensitive receptors. Tables 12.6 and 12.7 show typical noise levels generated by construction equipment at a distance of 50 feet from the source and at a distance of 50 feet from the construction activity center, respectively. As shown in Table 12.6, the highest maximum noise levels generated by construction would typically range from about 90 to 105 dBA at a distance of 50 feet from the noise source. These noise levels primarily result from pile drivers, jack hammers, and other

Table 12.5
CONSTRUCTION EQUIPMENT NOISE LEVEL RANGES

	A-weighted Noise Level (dBA) At 50 Feet					
	60	70	80	90	100	110
Earth Moving:						
Compacters (Rollers)		70	80	90		
Front Loaders		70	80	90	100	
Backhoes		70	80	90	100	
Bulldozers		70	80	90	100	
Scrapers, Graders		75	80	90	100	
Pavers			80	90		
Trucks		70	80	90	100	
Materials Handling:						
Concrete Mixers		70	80	90		
Concrete Pumps		75	80			
Cranes (Movable)		75	80	90		
Cranes (Derricks)				85		
Stationary:						
Pumps		70	80			
Generators		70	80			
Compressors		70	80	90		
Impact Equipment:						
Pneumatic Wrenches			80			
Jackhammers and Rock Drills		75	80	90	100	
Pile Drivers (Peak)				90	100	
Other:						
Vibrator		70	80			
Saws		70	80	90	100	

Source: Handbook of Noise Control, Cyril M. Harris, 1979.

Table 12.6
 TYPICAL NOISE LEVEL RANGES AT 50 FEET, L_{eq} IN dBA, AT CONSTRUCTION SITES

	Domestic Housing		Office Building, Hotel, Hospital, School, Public Works		Industrial, Parking Garage, Religious, Amusement and Recreation, Store, Service Station		Public Works, Roads and Highways, Sewers and Trenches	
	I	II	I	II	I	II	I	II
Ground Clearing	83	83	84	84	84	83	84	84
Excavation	88	75	89	79	89	71	88	78
Foundations	81	81	78	78	77	77	88	88
Erection	81	65	87	75	84	72	79	78
Finishing	88	72	89	75	89	74	84	84

SOURCE: U.S. EPA, Legal Compilation on Noise, Vol. 1, p. 2-104, 1973.

- I - All pertinent equipment present at site.
- II - Minimum required equipment present at site.

impulsive pieces of equipment. As shown in Table 12.7, typical hourly average construction-generated noise levels are about 71 dBA to 89 dBA measured at a distance of 50 feet from the center of the site during busy construction periods. Construction-generated noise levels drop off at a rate of about 6 dBA per doubling of distance between the source and receptor. Shielding by buildings or terrain results in much lower construction noise levels at distant receptors.

Assuming a maximum noise level of 88 dBA L_{eq} at about 50 feet from the source for standard construction equipment, and a noise attenuation of about 6 dBA for every doubling of the distance, noise levels from construction activities would drop to about 60 dBA L_{eq} , (the maximum normally acceptable noise level in residential areas) at about 1,500 feet from the source. This worst-case estimate assumes that sound waves travel undisturbed from the source to the receptor over ground that has poor sound absorptive properties. Intervening terrain and buildings, and soft vegetation-covered earth with good sound absorptive properties, would reduce noise propagation. Under a worst-case scenario, noise-sensitive land uses or activities within about 1,500 feet of construction could be exposed to noise levels above City noise standards during the construction period.

Construction equipment and activities would likely have more of an intrusive and disturbing effect on nearby sensitive receptors than actually raise time-averaged noise levels. Construction noise impacts primarily result when construction occurs during noise-sensitive times of the day (early morning, evening, or nighttime hours), or in areas immediately adjoining noise-sensitive land uses, or when construction lasts for extended periods of time.

Limiting construction to daytime hours is often a simple method to reduce the potential for noise impacts. In areas immediately adjacent to construction, controls such as constructing temporary noise barriers and using “quiet” construction equipment can also reduce the potential for noise impacts. Typically, noise generated by construction is temporary and intermittent (generally less than one construction season in duration).

Mitigation 12-1: To reduce noise and vibration impacts from Project-related construction activities, the following measures shall be implemented as a condition of future Project Area grading, demolition and building permit approvals:

(a) *Construction Scheduling.* Limit noise-generating construction activity within 500 feet of existing residential uses to between the hours of 7:00 AM to 7:00 PM, except on Sundays, and except in the case of emergencies (City of Rio Vista Municipal Code section 17.52.030).

(b) *Construction Equipment Mufflers and Maintenance.* Equip all internal combustion engine-driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.

(c) *Idling.* Prohibit unnecessary idling of internal combustion engines.

(d) *Equipment Location.* Locate all stationary noise-generating construction equipment, such as air compressors, as far as practical from existing nearby residences and other noise sensitive land uses. Such equipment shall also be acoustically shielded.

(e) *Quiet Equipment Selection.* Select quiet construction equipment, particularly air compressors, whenever possible. Fit motorized equipment with proper mufflers in good working order.

(f) *Noise Disturbance Coordinator.* A noise disturbance coordinator responsible for responding to any local complaints about construction noise shall be designated. The disturbance coordinator shall determine the cause of any noise complaint (e.g., starting too early, bad muffler, etc.) and will require that reasonable measures be implemented to correct the problem. A telephone number for the disturbance coordinator shall be conspicuously posted at the construction site.

With implementation of these measures, the impact of the Project related to construction noise would be ***less than significant***.

12.3.3 Long-Term Operational Noise

Redevelopment-funded improvement projects or development facilitated by the Project could expose persons, including sensitive receptors such as residential units and schools, to substantial increases in ambient noise levels in excess of City noise standards due to traffic noise from Project-related increases in vehicle trips, proposed sports fields and outdoor courts, and other stationary noise sources.

Impact 12-2: Traffic Noise. The General Plan Circulation and Mobility Element acknowledges that, because there are no arterials connecting the downtown or Highway 12 from the south, future increases in through-traffic may affect residential neighborhoods along 2nd Street, which is a primarily residential collector street. Vehicle trips generated by Project Area development facilitated by the proposed Redevelopment Plan would use Beach Drive and then 2nd Street to reach central Rio Vista, then continue either west on Main Street or north on Front Street to Highway 12. Residences on Beach Drive and 2nd Street, as well as Riverview Middle School, the Rio Vista Branch Library and other potentially sensitive receptors along these routes, may be exposed to permanent substantial increases in traffic noise--i.e., increases of 5 dBA or greater--as a result of Project-related increases in vehicular traffic. This would represent a **significant impact** (see Criteria [a], [b] and [c] under section 12.3, "Significance Criteria," above).

Explanation:

Vehicle trips generated by Project Area development facilitated by the proposed Redevelopment Plan would use Beach Drive and then 2nd Street to reach central Rio Vista, then continue either west on Main Street or north on Front Street to Highway 12. The traffic analysis presented in Chapter 8, Transportation, assumed that 100 percent of the trips would travel on Beach Drive and 2nd Street, and then 35 percent would travel west on Main Street and 60 percent north on Front Street to Highway 12. Table 12-8 shows that, aside from Beach Drive itself, 2nd Street, Main Street and Front Street are the only streets that would experience traffic increases of more than 10 percent with the Project. Traffic would increase an estimated 173 percent on 2nd Street, 60 percent on Front Street and 15 to 23 percent on Main Street.

A project-related increase in traffic noise levels of 5 dBA or more above the ambient noise level at a sensitive receptor (e.g., at the property line of a residential, school, or other noise-sensitive use) would be considered a significant impact. Generally, a tripling in average daily traffic volumes would result in an ambient noise level increase of 4.5 to 5 dB.¹ Traffic noise levels would nearly triple on 2nd Street with the Project. Properties fronting on 2nd Street south of Bruning Avenue contain residential uses. Riverview Middle School is located on 2nd Street at Marina Drive and the Rio Vista Branch Library is located at Montezuma Street. These sensitive receptors could experience an increase in traffic noise levels of 5 dBA or greater as a result of the Project. Residential properties on Beach Drive near the northwest corner of the property would also experience an increase in traffic noise levels of 5dBA or greater. Applying this same analysis approach, noise level increases on other roadways would be less than 5dBA and thus not distinctly perceptible.

The General Plan Circulation and Mobility Element acknowledges that, because there are no arterials connecting the downtown or Highway 12 from the south, through-traffic may affect residential neighborhoods along 2nd Street, which is a primarily residential collector street.² In

¹Town of Windsor, Windsor General Plan EIR, p. 3.12-4; Redevelopment Agency of the Town Of Windsor, Windsor Redevelopment Project Proposed Fifth Amendment Draft EIR, p. 6.8-12.

²Rio Vista General Plan 2001, Circulation and Mobility Element, p. 8-33.

Table 12.7
STREETS WITH LARGER INCREASES IN TRAFFIC

<u>Street Segment</u>	<u>Average Daily Traffic Volumes</u>		
	<u>Without Project</u>	<u>With Project</u>	<u>Percent Change</u>
Main St.--SR 12 to 5 th St.	6,000	6,867	15
Main St.--5 th St. to 2 nd St.	5,500	6,322	15
Main St.--2 nd St. to Front St.	3,200	3,950	23
2 nd St.--Beach Dr. to Main St.	1,010	2,757	173
Front St.--Main St. to SR 12	2,500	4,010	60

SOURCE: Fehr & Peers, 2010.

addition, the estimated increases in vehicle trips with the Project are based on worst-case assumptions of development intensity; actual development, vehicle trips and traffic noise levels may be less.

Mitigation measure 14-2 in Chapter 14, Climate Change would reduce the number of vehicle trips generated by the Project and thus would also serve to reduce the Project-related increase in traffic noise levels along Beach Drive and 2nd Street.

Mitigation 12-2: Future individual discretionary development projects within the proposed Project Area shall be individually evaluated for associated traffic noise impacts on Beach Drive and 2nd Street. Actual future development within the proposed Project Area may result in fewer vehicle trips and smaller increases in traffic noise levels than what has been assumed in this EIR. Project-specific evaluation for individual future Project Area development applications may demonstrate that impacts would actually be less-than-significant and mitigation would not be necessary.

If the project-specific evaluation indicates that estimated noise levels on Beach Drive and 2nd Street would exceed City standards or exceed ambient noise levels by 5dBA or more as a result of the project, then mitigation measures shall be implemented to the extent feasible to reduce noise to within the City standards and within 5dBA of ambient levels without the project. Mitigation measures may include the use of open grade asphalt paving. The use of open grade asphalt paving could provide a 2 to 3 dBA decrease in traffic noise levels. If necessary, further mitigation may include sound walls in places or extending an offer to retrofit affected noise-sensitive properties with dual-pane noise-rated windows, mechanical ventilation systems, and/or noise insulation and other noise-attenuating building materials. Depending on the amount of noise level reduction required and the number of noise-sensitive properties affected, retrofitting measures, if necessary, may not be feasible for or desired by every affected property. Without knowing the actual amount of

reduction that would be necessary, the number of affected properties and the degree of voluntary participation, the feasibility of retrofitting affected properties cannot be determined. Therefore, the traffic noise impact of the Project would remain significant and unavoidable.

Impact 12-3: Recreational Facility Noise. The few closest existing single-family residences on Beach Drive near the northwest and southwest corners of the proposed Project Area may be exposed to a substantial increase in average ambient noise, possibly to levels exceeding City standards, as a result of noise from new sports fields, outdoor courts, playgrounds and other active recreation facilities in the proposed Project Area. The noise levels experienced by adjacent residents would depend on the precise location of these facilities within the proposed Project Area; their distance from the nearest residential properties; the orientation, design and noise shielding features of the facilities; and the noise shielding and attenuation provided by intervening terrain and structures. Given the size of the proposed Project Area, the location and distance to adjacent residential properties, and the design flexibility afforded by the vacant unencumbered site, it is reasonable to assume that the proposed recreational facilities could be developed while still maintaining noise levels at adjacent residential properties within City standards. Nevertheless, until the location and design of the recreational facilities are finalized, the potential for exposure to a permanent substantial increase in noise levels and possibly to noise levels exceeding City noise standards would represent a **potentially significant impact** (see Criteria [a], [b] and [c] under subsection 12.3.1, "Significance Criteria," above).

Explanation:

The Redevelopment Agency anticipates spending approximately \$5.5 million of the tax increment revenue generated by the Project on development of park and recreation facilities within the proposed Project Area. Providing city-serving recreational amenities within the proposed Project Area is a basic objective of the Project. The City's Parks and Recreation Master Plan identifies the former Army Base as a future community park and sports fields site due in part to its location outside of existing residential neighborhoods that could be affected by noise, lighting and parking issues.

Proposed park and recreation facilities include a 12.3 acre community park with outdoor active recreation areas, including three soccer fields or four ball fields, outdoor basketball courts and four tennis courts, as well as a multi-purpose community center with indoor hardwood courts, a Children's Delta Discovery Park, and a multi-use bicycle and pedestrian trail connecting to the city's trail system.

Noise generated by these uses depends on the age and number of people using the respective facility at a given time, and the types of activities they are engaged in. Following are some examples of noise levels associated with recreational activities. Noise levels may be substantially higher at organized events such league games with large crowds and amplified public address systems.

- *Ball Fields.* Softball and little league games typically generate worst-case noise levels of about 57 dBA Ldn at a distance of 100 feet from the edge of infield. Maximum noise levels of about 65 dBA can result from baseballs being hit, and shouting from players and spectators.
- *Soccer Fields.* Soccer games typically generate average noise levels of 56 dBA at a distance of 100 feet from the edge of the field. At a distance of 1,000 feet, maximum noise levels could reach about 40 to 45 dBA; average noise levels would be about 10 dBA lower.
- *Basketball Courts.* A basketball bouncing on an asphalt court typically generates noise levels of 36 to 39 dBA at a distance of 300 feet. Shouting voices of adult players typically range from 43 to 53 dBA at 300 feet, and the average level for continuous games in an hour is typically 40 dBA at 300 feet.
- *School Playground.* An elementary school playground being used by 100 students would generate average and maximum noise levels of approximately 60 and 75 dB, respectively, at a distance of 100 feet. School grounds tend to generate more noise than neighborhood parks, since the intensity of school playground use tends to be much higher.

Mitigation 12-3: Future sports fields, outdoor courts and playgrounds within the proposed Project Area shall be located away from adjacent residential properties, and shall be designed, shielded and operated so that noise levels at adjacent residential properties do not exceed City noise standards. With implementation of this mitigation measure, the impacts of the Project related to recreational facility noise would be *less than significant*.

Other Stationary Noise Sources. Operational noise associated with non-residential land uses--including operation of building mechanical equipment, material loading and unloading activities, pneumatic equipment, and processing equipment--could generate high noise levels depending on the type of equipment and when, how often, and for what duration they are used. However, existing residential sensitive receptors would be located far from such sources. New on-site noise sensitive uses, such as lodge rooms, meeting facilities, etc., could be located, designed and shielded so as to avoid substantial noise exposure and achieve City noise standards. These issues and solutions would be addressed by site planning, facility design, development review and CEQA environmental review for individual future projects, and General Plan policies, zoning standards and building code requirements. Therefore, impacts related to other stationary noise sources would be *less than significant*.

Mitigation. No significant impact has been identified; no mitigation is required.

13. AIR QUALITY

This chapter describes the existing setting, policy and regulatory framework, and impacts of the proposed Redevelopment Plan on local and regional air quality. Potential impacts related to greenhouse gas emissions are addressed in Chapter 14, Climate Change.

13.1 SETTING

This section describes the regional topography and meteorology that influence air quality, the air pollutants of concern, relevant air quality standards, current air quality and attainment status, and existing air pollution sources and sensitive receptors near the proposed Project Area.

13.1.1 Topography and Meteorology¹

The proposed Project Area is located in Solano County, within the Sacramento Valley Air Basin and the Yolo-Solano Air Quality Management District (YSAQMD). The Sacramento Valley Air Basin encompasses eleven counties, as well as the eastern portion of Solano County.² Air quality in the Sacramento Valley is influenced by the topography and climate of the region, as well as by pollution that is generated in other locations and transported through the upper atmosphere to the valley.

Hot dry summers and mild rainy winters characterize the Mediterranean climate of the Sacramento Valley. During the year the temperature may range from 20 to 115 degrees Fahrenheit 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 land flows from the north.

The Sacramento Valley is bounded by the North Coast Ranges on the west and Sierra Nevada on the east. The intervening terrain is relatively flat. The mountains surrounding the Sacramento Valley Air Basin 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 collect over 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.

¹Yolo-Solano Air Quality Management District, Handbook for Assessing and Mitigating Air Quality Impacts, July 11, 2007, Appendix A Background Information for Environmental Setting.

²The western portion of Solano County lies within the Bay Area Air Basin and the jurisdiction of the Bay Area Air Quality Management District.

The ozone season (May through October) in the Sacramento Valley is characterized by stagnant morning air or light winds with the delta sea breeze arriving in the afternoon out of the southwest. Usually the evening breeze transports the airborne pollutants to the north out of the Sacramento Valley. 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, exacerbating the pollution levels in the area and increasing the likelihood of violations of federal or State air quality standards. The eddy normally dissipates around noon when the delta sea breeze arrives.

Solano County experiences temperature inversions. Temperature inversions occur when air becomes warmer at higher elevations and makes it difficult for air at different heights to mix. When mixing is minimal, polluted air closer to the ground is trapped and cannot disperse. Temperature inversions are significant in determining the severity of concentrations of pollutants such as ozone (O₃), fine particulate matter (PM₁₀), and carbon monoxide (CO). Ozone precursors mix and react to produce higher concentrations of O₃ under an inversion, and inversions trap and hold directly emitted pollutants like CO. PM₁₀ is mostly a directly emitted pollutant, but can also be created in the atmosphere as a chemical reaction. Inversion layers can also directly affect concentration levels of PM₁₀ by limiting mixing space.

13.1.2 Criteria Pollutants, Air Quality Standards and Attainment Status

Both the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (ARB) have established ambient air quality standards for six "criteria" pollutants (so called because they were established on the basis of health criteria): carbon monoxide (CO), ozone (O₃), nitrogen dioxide (NO₂), inhalable and fine particulate matter (PM₁₀ and PM_{2.5}), sulfur dioxide (SO₂), and lead (Pb). These are considered the most prevalent air pollutants known to be hazardous to human health. Individuals vary in their sensitivity to air pollutants, so the federal and State standards have been set at levels that protect groups that are more sensitive (e.g., asthmatics). In general, the State standards are more stringent, particularly for ozone, PM₁₀ and PM_{2.5}. A summary description of these six criteria pollutants and their potential health effects is presented in Table 13.1. The federal and State ambient air quality standards are presented in Table 13.2.

Table 13.2 also presents Solano County's attainment status for the ambient air quality standards. Classifications for the criteria pollutants are given to each air basin, county, or in some cases, within a specific urbanized area by comparing actual monitoring data with State and federal standards. If a pollutant concentration is lower than the standard, the area is classified as "attainment" for that pollutant. If an area exceeds the standard, the area is classified as "non-attainment" for that pollutant. If there are not enough data available to determine whether the standard is exceeded in an area, the area is designated "unclassified." As shown in Table 13.2, Solano County does not attain State and federal standards for O₃ and PM₁₀.

Table 13.1
MAJOR CRITERIA AIR POLLUTANTS AND HEALTH EFFECTS

<u>Pollutant</u>	<u>Characteristics</u>	<u>Health Effects</u>	<u>Major Sources</u>
Ozone (O ₃)	A highly reactive photochemical pollutant created by the action of sunshine on ozone precursors (primarily reactive organic gases and oxides of nitrogen). Often called photochemical smog.	<ul style="list-style-type: none"> ▪ Eye Irritation ▪ Respiratory function impairment 	The major sources of ozone precursors are combustion sources such as factories and automobiles, and evaporation of solvents and fuels.
Carbon Monoxide (CO)	Carbon monoxide is an odorless, colorless gas that is highly toxic. It is formed by the incomplete combustion of fuels.	<ul style="list-style-type: none"> ▪ Impairment of oxygen transport in the bloodstream ▪ Aggravation of cardiovascular disease ▪ Fatigue, headache, confusion, dizziness ▪ Can be fatal in the case of very high concentrations 	Automobile exhaust, combustion of fuels, combustion of wood in woodstoves and fireplaces
Nitrogen Dioxide (NO ₂)	Reddish-brown gas that discolors the air, formed during combustion	<ul style="list-style-type: none"> ▪ Increased risk of acute and chronic respiratory disease 	Automobile and diesel truck exhaust, industrial processes, fossil-fueled power plants
Sulfur Dioxide (SO ₂)	Sulfur dioxide is a colorless gas with a pungent, irritating odor.	<ul style="list-style-type: none"> ▪ Aggravation of chronic obstruction lung disease ▪ Increased risk of acute and chronic respiratory disease 	Diesel vehicle exhaust, oil-powered power plants, industrial processes
Particulate Matter (PM ₁₀ and PM _{2.5})	Solid and liquid particles of dust, soot, aerosols and other matter which are small enough to remain suspended in the air for a long period of time.	<ul style="list-style-type: none"> ▪ Aggravation of chronic disease and heart/lung disease symptoms 	Combustion, automobiles, field burning, factories and unpaved roads. Also a result of photochemical processes.
Lead (Pb)	Component of particulate matter. Levels have dropped 98 percent in last 30 years due to elimination of lead from gasoline.	<ul style="list-style-type: none"> ▪ Learning disabilities ▪ Brain and kidney damage ▪ Children particularly susceptible 	Leaded gasoline (no longer allowed), smelters, resource recovery

SOURCE: Wagstaff/MIG 2010.

Table 13.2
AMBIENT AIR QUALITY STANDARDS AND SOLANO COUNTY ATTAINMENT STATUS

<u>Pollutant</u>	<u>Averaging Time</u>	<u>State Standards^{1,3}</u>	<u>Federal Primary Standards^{2,3,4}</u>	<u>Solano County State Classification</u>	<u>Solano County Federal Classification</u>
Ozone	1-hour	0.09 ppm	0.12 ppm	Nonattainment	N/A
	8-hour ^f	0.07 ppm	0.08 ppm	Nonattainment	Nonattainment
Carbon Monoxide	1-hour	20.0 ppm	35 ppm	Attainment	Attainment
	8-hour	9.0 ppm	9 ppm	Attainment	Attainment
Nitrogen Dioxide	1-hour	0.25 ppm	--	Attainment	N/A
	Annual Mean	--	0.053 ppm	N/A	Attainment
Sulfur Dioxide	1-hour	0.25 ppm	--	Attainment	N/A
	3-hour	0.04 ppm	--	Attainment	Attainment
	24-hour	--	0.14 ppm	N/A	Attainment
	Annual Mean	--	0.03 ppm		
Coarse Particulate Matter (PM10)	24-hour	50 µg/m3	150 µg/m3	Nonattainment/	Unclassified
	Annual Mean	20 µg/m3	--	Nonattainment	N/A
Fine Particulate Matter (PM2.5)	24-hour	--	35 µg/m3	N/A	Unclassified
	Annual Mean	12 µg/m3	15 µg/m3	N/A	Unclassified

SOURCE: California Air Resources Board, <www.arb.ca.gov>, June 2007.

Notes: ppm = parts per million, µg/m3 = micrograms per cubic meter

¹ California standards, other than CO, SO2 (1-hour), and fine particulate matter, are values that are not to be equaled or violated. The CO, SO2 (1-hour), and fine particulate matter standards are not to be violated.

² National standards, other than ozone, the 24-hour PM2.5, the PM10, and those standards based on annual averages, are not to be exceeded more than once a year. The 1-hour ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or less than one. The 8-hour ozone standard is attained when the 3-year average of the annual fourth highest daily maximum concentration is less than 0.08 ppm. The 24-hour PM10 standard is attained when the 99th percentile of 24-hour PM10 concentrations in a year, averaged over 3 years, at the population-oriented monitoring site with the highest measured values in the area, is below 150 µg/m3. The 24-hour PM2.5 standard is attained when the 98th percentile of 24-hour PM2.5 concentrations in a year, averaged over 3 years, at the population-oriented monitoring site with the highest measured values in the area, is below 65 µg/m3. The annual average PM2.5 standard is attained when the 3-year average of the annual arithmetic mean PM2.5 concentrations, from single or multiple community oriented monitors is less than or equal to 15 µg/m3.

³ All measurements of air quality are to be corrected to a reference temperature of 25° C and a reference pressure of 760 mm of mercury (Hg) (1013.2 millibar); ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

⁴ Federal Primary Standards: the levels of air quality deemed necessary by the federal government, with an adequate margin of safety, to protect the public health.

⁵ The 1-hour ozone standard will be replaced by the 8-hour standard on an area-by-area basis when the area has achieved 3 consecutive years of air quality data meeting the 1-hour standard.

13.1.3 Pollutants of Concern

The criteria air pollutants most relevant to air quality planning and regulation in Solano County are O₃, CO, and PM₁₀. In addition to these criteria pollutants, toxic air contaminants (TACs) are another group of pollutants of concern.

(a) Ozone (O₃). Ozone is a gas that is formed when reactive organic gases (ROGs) and nitrogen oxides (NO_x)--both byproducts of internal combustion engine exhaust--undergo slow photochemical reactions in the presence of sunlight. Ozone concentrations are generally highest during the summer, when direct sunlight, light wind, and warm temperature conditions are favorable. The federal government divides the State into air basins. Each basin is given a designation to describe the extent to which a basin is in nonattainment for the federal ozone standard. The eastern portion of Solano County is in the Sacramento Nonattainment Area, which is currently classified as being in "severe" nonattainment for the one-hour ozone standard.

(b) Carbon Monoxide (CO). Carbon Monoxide is a colorless, odorless gas produced by the incomplete combustion of fuels. CO concentrations tend to be the highest during winter mornings with little to no wind, when surface based inversions trap the pollutant at ground levels. Unlike O₃, CO is emitted directly from internal combustion engines. Motor vehicles operating at slow speeds are the primary source of CO and the highest ambient CO concentrations are generally found near congested roadways and intersections. All areas of the Sacramento Valley have attained the current State and federal CO standards.

(c) Fine Particulate Matter (PM₁₀). Fine particulate matter consists of extremely small, suspended particles or droplets 10 microns or smaller in diameter. Some sources of PM₁₀, like pollen and wind-blown dust, are naturally occurring. However, in populated areas, most PM₁₀ is caused by road dust, diesel soot, combustion products, abrasion of tires and brakes, and construction activities. Particulates are of concern because they can be inhaled deep into the lungs and cause respiratory problems. The eastern portion of Solano County is currently designated as non-attainment for the State PM₁₀.

(d) Toxic Air Contaminants. Toxic Air Contaminants (TACs) may cause carcinogenic effects in addition to adverse non-carcinogenic health effects. TACs can be injurious in small quantities and are regulated despite the absence of criteria documents. The identification, regulation, and monitoring of TACs is relatively recent compared to criteria pollutants. Unlike criteria pollutants, there are no established ambient standards for TACs. TACs are regulated on the basis of risk rather than specification of safe levels of contamination. A major source of TACs contributing to ambient risk is motor vehicles. Other sources include refineries, dry cleaners, auto body shops, and other industrial processes.

TAC impacts are assessed using a standard Maximally Exposed Individual (MEI) health risk of 10 in 1 million. The ARB and local air districts have determined as excessive any source that poses a risk to the general population that is equal to or greater than 10 people out of 1 million contracting cancer. When estimating this risk, it is assumed that an individual is exposed to the maximum concentration of any given TAC, continuously for 70 years. If the risk of such exposure levels meets or exceeds the threshold of 10 excess cancer cases per 1 million people, then the ARB and local air district require the installation of best available control technology (BACT) or maximum available control technology (MACT) to reduce the risk threshold.

The ARB has conducted studies to determine the total cancer risk to individuals due to TACs. According to the ARB, the proposed Project Area and Rio Vista have an estimated risk from TACs of between 50 and 100 cancer cases per one million people.¹ While TACs are produced by many different sources, the largest contributor to inhalation cancer risk in California is diesel particulates. Diesel particulate matter is emitted into the air by heavy-duty diesel trucks, construction equipment, passenger cars and watercraft. According to ARB's *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*⁴ (RRP), the existing average statewide potential cancer risk from diesel particulate matter is over 500 potential cancer cases per one million people.² The RRP contains proposes to implement various diesel-reduction measures that are estimated to reduce diesel emissions by approximately 85 percent by the year 2020.

13.1.4 Existing Pollutant Sources, Concentrations and Sensitive Receptors

(a) Existing Emission Sources. Criteria pollutants are generated by many different sources in Solano County. These sources can be divided into two categories: (1) mobile and, (2) stationary/area sources. Mobile sources consist primarily of vehicles driven on and off roadways, as well as watercraft and other special mobile sources such as locomotives. Stationary/area sources include all other man-made emission sources. The ARB maintains an emission inventory of air pollutants within the State's air basins and counties inside those air basins. According to the inventory, on-road motor vehicles are the primary source of ROG, NO_x, and CO in Solano County. "Miscellaneous Processes", which includes cooking, farming operations, and construction and demolition activities, is the largest contributor of PM₁₀ and PM_{2.5}.

(b) Monitored Air Pollutant Concentrations. The California Air Resources Board (ARB) compiles air quality data from a regional air quality monitoring network that provides information on ambient concentrations of criteria air pollutants. Monitored ambient air pollutant concentrations reflect the number and strength of emissions sources and the influence of topographical and meteorological factors. The closest monitoring station to the project site, the Vacaville–Ulatis Monitoring Station located in Vacaville, monitors one-hour and eight-hour ozone levels. Since the Vacaville–Ulatis Monitoring Station does not monitor PM₁₀, data, the Vacaville–Merchant Street station, also in Vacaville, was used for PM₁₀. Recent air quality data collected at these monitoring stations is summarized in Table 13.3.

(c) Sensitive Receptors. Some individuals are considered to be more "sensitive" than others to air pollution. Possible reasons for greater sensitivity include existing health problems, proximity to the emission source, or duration of exposure to air pollutants. Land uses such as schools, hospitals, and retirement homes are considered to be sensitive receptors because the very young, the old and the infirm are more susceptible to respiratory infections and other air quality related health problems than the general public. Residential uses are considered sensitive because people in residential areas are often at home for extended periods of time, so they can be exposed to pollutants for extended periods.

¹California Air Resources Board, Maps of Estimated Cancer Risk from Air Toxics, <www.arb.ca.gov/toxics/cti/hlthrisk/hlthrisk.htm>, accessed May 14, 2007.

²California Air Resources Board, Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles, October 2000, p. 1.

Table 13.3
MONITORED LOCAL AIR POLLUTANT CONCENTRATIONS¹

<u>Pollutant</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>
Ozone (1-hour)			
Highest 1-hour (ppm)	0.101	0.101	0.108
Days>0.09 ppm (State)	1	1	4
Days>0.125 ppm (federal)	0	0	0
Ozone (8-hour)			
Highest 8-hour (ppm)	0.087	0.080	0.087
Days>0.08 (federal) ²	1	0	2
Particulate Matter (PM10)			
Highest National 24-hour (ug/m3)	44.0	33.0	56.0
Highest State 24-hour (ug/m3)	44.0	35.0	60.0
Days>50 ug/m3 (State)	0	0	1
Days>150 ug/m3 (federal)	0	0	0

SOURCE: California Air Resources Board, <www.arb.ca.gov>, accessed May 14, 2007.

¹ All measurements are from the Vacaville – Ulatis Monitoring Station except PM10 readings, which are from the Vacaville – Merchant Street Monitoring Station.

² There is no State 8-hour ozone standard.

Air quality problems arise when sources of air pollutants and sensitive receptors are located near one another. There are several types of land use conflicts that should be avoided:

- A sensitive receptor is in close proximity to a congested intersection or roadway with high levels of emissions from motor vehicles. High concentrations of CO, fine PM, or TACs are the most common concerns.
- A sensitive receptor is close to a source of TACs or a potential source of accidental releases of hazardous materials.
- A sensitive receptor is close to a source of odorous emissions. Although odors generally do not pose a health risk, they can be quite unpleasant and often lead to citizen complaints to the air district and to local governments.
- A sensitive receptor is close to a source of high levels of nuisance dust emissions.

Localized impacts to sensitive receptors generally occur in one of two ways:

- A (new) source of air pollutants is proposed to be located close to existing sensitive receptors. For example, an industrial facility is proposed for a site near a school.

- A (new) sensitive receptor is proposed near an existing source of air pollutants. For example, a residential development is proposed near a wastewater treatment plant.

13.2 PERTINENT PLANS AND POLICIES

Air quality in Solano County is regulated by federal and State agencies, and the YSAQMD. These agencies develop rules or regulations to meet the goals or directives imposed on them through legislation. Mobile sources of air pollutants are largely controlled through federal and State agencies, while most stationary sources are regulated by the YSAQMD.

13.2.1 Federal

(a) U.S. Environmental Protection Agency. The U.S. Environmental Protection Agency (EPA) is the federal agency responsible for setting and enforcing the federal ambient air quality standards for atmospheric pollutants. The EPA regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain locomotives. As part of its enforcement responsibilities, the EPA 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, using a combination of performance standards and market-based programs.

(b) Clean Air Act. The federal Clean Air Act (CAA), as amended, establishes air quality standards for several pollutants. These standards are divided into primary standards and secondary standards. Primary standards are designed to protect public health, and secondary standards are intended to protect public welfare from effects such as visibility reduction, soiling, nuisance, and other forms of damage. The CAA requires that regional plans be prepared for non-attainment areas illustrating how the federal air quality standards could be met.

The 1990 federal CAA Amendments also offer a comprehensive plan for achieving significant reduction in both mobile and stationary source emissions of certain designated Hazardous Air Pollutants (HAP), or TACs. All major stationary sources of designated HAP's are required to obtain an operating permit under Title V of the federal CAA Amendments.

13.2.2 State

(a) California Air Resources Board. The ARB, a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both federal and State air pollution control programs within California. In this capacity, the ARB conducts research, sets State ambient air quality standards, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. The ARB establishes emissions standards for motor vehicles sold in California, consumer products, and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. The ARB also has primary responsibility for the development of California's SIP, for which it works closely with the federal government and the local air districts.

(b) California Clean Air Act. The California Clean Air Act (CCAA) requires nonattainment areas to achieve and maintain the State ambient air quality standards by the earliest practicable date and local air districts to develop plans for attaining the state O₃, CO, SO₂, and nitrogen

dioxide standards. The CCAA also requires that once every three years the districts assess their progress toward attaining the air quality standards.

(c) Toxic Air Contaminants. Regulation of TACs is achieved through federal and state controls on individual sources.

(1) *Air Toxics Hot Spots.* The Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588), California Health and Safety Code Section 44300 et seq., provides for the regulation of over 200 air toxics and is the primary air contaminant legislation in the state. Under the Act, local air districts may request that a facility account for its TAC emissions. Local air districts then prioritize facilities on the basis of emissions, and high priority designated facilities are required to submit a health risk assessment and communicate the results to the affected public. The TAC control strategy involves reviewing new sources to ensure compliance with required emission controls and limits, maintaining an inventory of existing sources of TACs, and developing new rules and regulations to reduce TAC emissions. The purpose of AB 2588 is to identify and inventory toxic air emissions and to communicate the potential for adverse health effects to the public.

(2) *Assembly Bill 1807.* Assembly Bill 1807 (AB 1807), enacted in 1983, sets forth a procedure for the identification and control of TACs in California. The ARB is responsible for the identification and control of TACs, except pesticide use. AB 1807 defines a TAC as an air pollutant that may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health. The ARB prepares identification reports on candidate substances under consideration for listing as TACs. The reports and summaries describe emissions in California resulting in public exposure, together with their potential health effects.

(3) *Diesel Particulate Matter.* In 1998, the ARB identified diesel particulate matter as a toxic air contaminant under the AB 1807 program. Diesel particulate matter is emitted into the air via heavy-duty diesel trucks, construction equipment, passenger cars and watercraft. In October 2000, the ARB released the report entitled *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. This plan identifies diesel particulate matter as the predominant TAC in California and proposes methods for reducing diesel emissions.

(4) *Watercraft Diesel Engines.* The ARB has acted to reduce diesel particulate matter and NO_x emissions from diesel engines on watercraft, including commercial harbor craft and recreational boats. Beginning in 2009, the ARB has regulated emissions from commercial harbor craft vessels, including crew and supply vessels, work boats, research vessels, ferries, excursion vessels, tugboats, pilot vessels, and commercial and charter fishing boats. The regulations apply to both new and in-use diesel engines used on commercial harbor craft operating in internal, estuarine, and coastal waters.¹ The ARB has also adopted regulations for certain recreational vessels and additional regulations have been proposed.

13.2.3 Yolo Solano Air Quality Management District

The YSAQMD is the primary agency responsible for planning to meet federal and State ambient standards in the eastern portion of Solano County and Yolo County.

¹California Air Resources Board, Commercial Harbor Craft Regulation Fact Sheet, May 2008.

(a) Ozone Attainment Plan. The YSAQMD is part of the Sacramento Ozone Nonattainment Area. The YSAQMD works with the other local air districts in the nonattainment area to maintain the area's portion of the SIP for O₃. The SIP is a compilation of plans and regulations that govern how the region and the State will comply with the federal CAA requirements to attain and maintain the federal O₃ standard. The Sacramento Nonattainment Area's plan for meeting the O₃ standard is called the Sacramento Area Regional Ozone Attainment Plan. In February 2006, the ARB approved the Sacramento Regional Nonattainment Area 8-Hour Ozone Rate of Progress Plan (AQMP) to update the previous plan with new emissions factors for attainment of the 1-Hour and 8-Hour federal O₃ standards. The EPA has established the new attainment deadline for the Sacramento Region as 2013. The YSAQMD is responsible for enforcing the regulations of the SIP within the YSAQMD jurisdiction.

(b) YSAQMD Rules. The following YSAQMD rules may be relevant to the Project:

- *District Rule 2.3, Ringelmann Chart.* Visible emissions from stationary diesel-powered equipment are not allowed to exceed 40 percent opacity for more than three minutes in any one-hour.
- *District Rule 2.5, Nuisance.* Dust emissions must be prevented from creating a nuisance to surrounding properties.
- *Rule 2.14, Architectural Coatings.* All coating within YSAQMD jurisdiction must be 100 g/l of ROG or less for flat coatings and 150 g/l of ROG for non-flat coatings.
- Portable equipment greater than 50 horsepower, other than vehicles, must be registered with either the ARB Portable Equipment Registration Program (PERP) (<http://www.arb.ca.gov/perp/perp.htm>) or with the YSAQMD.
- *District Rule 2.28, Cutback and Emulsified Asphalt Paving Materials.*
- *District Rule 9.9.* Demolition, renovation or removal of asbestos-containing materials.
- All stationary equipment, other than internal combustion engines less than 50 horsepower, emitting air pollutants controlled under YSAQMD rules and regulations require an Authority to Construct (ATC) and Permit to Operate (PTO).

13.2.4 City of Rio Vista

The Rio Vista General Plan includes the following goal, policies and actions to enhance air quality, as well as additional policies to improve energy efficiency, and reduce driving and traffic congestion.

GOAL 10.6 TO RECOGNIZE IMPROVED AIR QUALITY AS A HEALTH BENEFIT AND TO PRESERVE AIR QUALITY AS A NATURAL RESOURCE.

Policy 10.6.A The City shall require that site preparation and construction activities incorporate effective measures to minimize dust emissions and pollutant emissions from motorized construction equipment and vehicles.

Policy 10.6.B The City shall ensure that development projects facilitate non-motorized travel through the use of connecting streets, alleys, and connecting pathways.

Policy 10.6.C The City shall ensure that street design within new developments provides multiple access points within neighborhoods as much as possible, in order to avoid long, circuitous routes for motor vehicles.

Policy 10.6.D The City shall ensure that existing trees and vegetation are retained and incorporated into the project design wherever feasible.

Policy 10.6.E The City shall ensure that new development pays its fair share of the cost to provide alternative transportation systems, including bikeways, pedestrian paths, and public transit facilities.

Policy 10.6.F The City shall encourage the use of non-motorized transportation wherever possible in the community.

Policy 10.6.G The City shall encourage the use of public transportation as an alternative to the automobile.

Policy 10.6.I The City shall work to improve the public's understanding of the land use, transportation, and air quality link.

Policy 10.6.J All City submittals of transportation improvement projects to be included in regional transportation plans shall be consistent with the air quality goals and policies of the General Plan.

Policy 10.6.K The City shall pursue and use State and federal funds earmarked for air quality benefits.

Policy 10.6.L The City shall work to replace the City's conventional fuel vehicles with low emission vehicles as funding becomes available and as functional/operational requirements allow.

Policy 10.6M The City shall require application of the analysis methods and significance thresholds recommended by the Yolo-Solano Air Quality Management District, as needed, to determine a project's air quality impacts.

13.3 IMPACTS AND MITIGATION MEASURES

13.3.1 Significance Criteria

(a) CEQA Guidelines. Based on the CEQA Guidelines,¹ the Project would be considered to have a significant impact if it would:

- (1) Conflict with or obstruct implementation of the applicable air quality plan;
- (2) Violate any air quality standard or contribute substantially to an existing or projected air quality violation;

¹CEQA Guidelines, Appendix G, item III (a-e).

- (3) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);
- (4) Expose sensitive receptors to substantial pollutant concentrations; or
- (e) Create objectionable odors affecting a substantial number of people.

(b) YSAQMD Significance Thresholds.¹ The Yolo-Solano County Air Quality Management District (YSAQMD) has established the following “significance” thresholds:

(1) *Criteria Pollutants of Concern.* The YSAQMD has established the following thresholds of significance for PM₁₀, CO and the precursors to ozone, which are reactive organic gases (ROG) and nitrogen Oxides (NO_x). The thresholds apply to both construction and operational impacts.

- ROG 10 tons per year
- NO_x 10 tons per year
- PM₁₀ 80 pounds per day
- CO Violation of a State ambient air quality standard for CO

(2) *Toxic Air Contaminants.* The YSAQMD has established the following thresholds of significance for TACs from stationary sources, which are based on health risks for exposed individuals. These standards would typically be applied to the results of a health risk assessment based on detailed air dispersion modeling conducted for individual future projects within the proposed Project Area. The YSAQMD does not propose a significance threshold for TACs from mobile sources.

- Probability of contracting cancer for the Maximally Exposed Individual equals or exceeds 10 in one million.
- Ground-level concentrations of non-carcinogenic TACs would result in a Hazard Index equal to or greater than 1 for the Maximally Exposed Individual.

(3) *Cumulative Impacts.* The YSAQMD determines that a project will not have a significant cumulative impact if it does not require a change in land use designations (i.e., general plan and zoning), where the new use is more intensive than the existing designation. Development projects meeting these criteria are considered to be consistent with the 2006 Sacramento Area Regional Ozone Attainment Plan.

13.4.2 Criteria Pollutant Impacts and Mitigation Measures

The criteria pollutants of greatest concern and potential impacts resulting from the Project are PM₁₀, CO and the precursors to ozone, which are reactive organic gases (ROG) and nitrogen Oxides (NO_x). This section evaluates the impacts of the proposed Redevelopment Plan with respect to these criteria pollutants in terms of short-term construction impacts, long-term operations impacts, and air quality plan consistency.

¹Yolo-Solano Air Quality Management District, Handbook for Assessing and Mitigating Air Quality Impacts, July 11, 2007, Davis, California, Page 9.

(a) Short-Term Construction Impacts.

Impact 13-1: Short-Term Construction Emissions. Project-facilitated construction activities could generate temporary emissions of ROG, NOX and PM₁₀ that exceed YSAQMD thresholds of significance. In addition, construction dust could cause localized health and nuisance impacts on adjacent residential sensitive receptors. These possible construction period effects represent a **potentially significant impact** (see criteria (c), (d), and (e) in subsection 13.3.1, "Significance Criteria," above).

Explanation:

Redevelopment activities within the proposed Project Area, including the demolition of buildings and the construction of new roads, infrastructure, park and recreation facilities, and other site improvements, as well as the construction of new development stimulated by the proposed Redevelopment Plan, would generate short-term temporary emissions of dust, fuel combustion exhaust, and gases from architectural coatings and other building materials. The most substantial air pollutant emissions would be fugitive dust generated from demolition of buildings and other site improvements, loading debris into trucks for disposal, grading and earth-moving, and wind erosion of exposed ground areas. Construction activities also generate exhaust emissions from vehicles, equipment and worker commute trips. Solvents in adhesives, non-water-based paints, thinners, some insulating materials, and caulking materials can evaporate into the atmosphere and participate in the photochemical reaction that creates urban ozone. Asphalt used in paving is also a source of organic gases for a short time after its application.

Mitigation 13-1. To reduce short-term construction emissions impacts from Project-related construction activities, the following measures shall be implemented as a condition of future Project Area grading, demolition and building permit approvals:

1. Water all active construction sites at least twice daily. Frequency should be based on the type of operation, and extent of soil and wind exposure (50 percent effective).
2. Haul trucks shall maintain at least two feet of freeboard (90 percent effective).
3. Cover all trucks hauling dirt, sand or loose materials (90 percent effective).
4. Apply non-toxic binders (e.g., latex acrylic copolymer) to exposed areas after cut and fill operations and hydroseed exposed cut and fill areas.
5. Apply chemical soil stabilizers on inactive construction areas (disturbed lands within construction projects that are unused for at least four consecutive days).

(continued)

Mitigation 13-1 (continued):

6. Plant vegetative ground cover in disturbed areas as soon as possible.
7. Cover inactive storage piles.
8. Sweep streets if visible soil material is carried out from the construction site.
9. Treat accesses to a distance of 100 feet from the paved road with a 6-inch layer of gravel or a 6 to 12 inch layer of wood chips or mulch.
10. Maintain heavy-duty earthmoving, stationary and mobile equipment in optimum operating condition.
11. Minimize idling time to five (5) minutes when construction equipment is not in use, unless more time is required per engine manufacturer's specifications or for safety reasons.
12. Use low sulfur fuel for stationary construction equipment.
13. Use existing power sources (e.g., power poles) or clean fuel generators rather than temporary power generators.
14. Use low emission on-site stationary equipment.
15. In the event that any open burning is required, obtain approval and issuance of a burning permit from YSAQMD and perform burning in compliance with YSAQMD Rule 2.8, Open Burning, General.
16. Control visible emissions exceeding 40 percent opacity to no more than 3 minutes in any one hour, which includes all (on-road and off-road) diesel powered equipment, in accordance with YSAQMD Rule 2.3.
17. Comply with YSAQMD Rule 2.14, Architectural Coatings, for architectural coatings and solvents used at the proposed project.
18. Cutback and emulsified asphalt application shall be conducted in accordance with YSAQMD Rule 2.28, Cutback and Emulsified Asphalt Paving Materials.

With implementation of this measure, the short-term construction emissions impact of the Project would be ***less than significant***.

(b) Long-Term Operation Impacts. Development within the proposed Project Area facilitated by the proposed Redevelopment Plan would generate emissions of criteria air pollutants. Project-related emissions could include emissions from mobile sources, stationary sources, and area sources.

Mobile sources would include passenger vehicles, such as worker commute vehicles and users of the park and recreation facilities and lodge, and trucks. Area sources include water heaters, landscape maintenance equipment, and architectural coatings (e.g., paints and lacquers), which individually emit fairly small quantities of air pollutants, but cumulatively may represent significant quantities of emissions. Operational mobile and area source emissions of the O₃ precursors ROG and NO_x, and PM₁₀ were estimated using the URBEMIS 2007 emissions model. The daily trip generation rates used in the traffic analysis were used for mobile sources and other default values were left unchanged.

Mobile source emissions from boats were not included the URBEMIS 2007 emissions model. The assumed research station use could involve the storage and use of up to approximately 50 boats, potentially including one 200 foot vessel, several 40 to 120 foot vessels, and the remainder up to 40 foot vessels. Future recreational uses that may be developed within the proposed Project Area could also involve the use of recreational boats. Diesel boat engines would be substantial sources of NO_x. The YSAQMD does not regulate boats. The ARB regulates emissions from commercial harbor craft vessels, including crew and supply vessels, work boats, and research vessels, as well as recreational vessels. In addition, to the extent that the research station would be a consolidation in this one new location of boats and other equipment from existing facilities elsewhere in the region, research station boats would not represent entirely new sources of emissions within the air basin.

The URBEMIS 2007 model does not account for stationary source emissions. Stationary sources would be sources with an identified emission point, such as boilers or other types of combustion equipment, fueling stations, or other sources of emissions associated with a research station. Stationary sources emissions would depend on the type and quantity of equipment, and rate and quantity of fuel consumed and/or process throughput. A new fuel dock is not expected to be included as part of the development of a potential research station; the adjacent Delta Marina could provide fuel for research station boats. The specific equipment and processes and possible stationary source emissions associated with a research station or other potential future use is too speculative to predict or evaluate in this Program EIR. Therefore stationary sources were not included in this analysis.

Operational Ozone and PM₁₀ Emissions. The 244,500 square feet of non-residential development facilitated by the proposed Redevelopment Plan would generate the following estimated emissions:

	<u>ROG</u> <u>(tons/year)</u>	<u>NO_x</u> <u>(tons/year)</u>	<u>PM₁₀</u> <u>(lbs./day)</u>
Area	0.23	0.29	0.03
Mobile	<u>2.57</u>	<u>3.64</u>	<u>47.23</u>
TOTAL	2.98	4.03	47.26
YSAQMD Threshold	10	10	80

These modeled emissions estimates are well below the YSAQMD significance thresholds of 10 tons per year for ROG and NO_x, and 80 pounds per day for PM₁₀, and therefore would be **less than significant**.

Mitigation. No significant impact has been identified; no mitigation is required.

Impact 13-2: CO Concentration Impacts. As explained in Chapter 8, Transportation and Circulation, herein, Project traffic would cause or exacerbate already existing unacceptable traffic congestion at the following four intersections on Highway 12, which could cause violations of the State ambient air quality standard for CO:

- Highway 12/Front Street,
- Highway 12/Main Street,
- Highway 12/North 5th Street, and
- Highway 12/River Road.

This possible effect represents a **potentially significant impact** (see Criteria (b) and (d) under section 13.3.1, "Significance Criteria," above).

Explanation:

In addition to emissions of ROG and NO_x, which react to form ozone at a regional level, motor vehicles also emit CO, which can have very localized adverse health effects near where it is emitted. CO levels are highest at congested intersections where traffic moves slowly.

Project-related CO concentration would be a concern if the addition of Project traffic were to cause an intersection to operate at an "unacceptable" traffic level of service (LOS) or worsen conditions at an intersection that already operates at an unacceptable LOS. As explained in Chapter 8, Transportation, herein, the addition of Project traffic to existing conditions and 2025 cumulative conditions would change the LOS from an acceptable LOS to an unacceptable LOS or would exacerbate an already unacceptable LOS at the following four "study" intersections along Highway 12:

- Highway 12/Front Street
- Highway 12/Main Street
- Highway 12/North 5th Street
- Highway 12/River Road

The Project contribution to these traffic impacts would be reduced to less than considerable with identified mitigation measures. However, these intersections would still continue to operate at an unacceptable LOS even with these mitigation measures, and so from the standpoint of air quality, the incremental contribution of Project traffic could still cause a violation of a State ambient air quality standard for CO.

Mitigation 13-2: Mitigation measures 8-3, 8-8, 8-9, 8-10 and 8-11 described in Chapter 8, Transportation and Circulation, would reduce to less than considerable the incremental contribution of Project traffic to these four intersections. However, Mitigation 8-3 is not funding assured and exceeds the City's authority to implement and thus may be infeasible. Additionally, even with implementation of Mitigations 8-8, 8-9, 8-10 and 8-11, these intersections would continue to operate at an unacceptable LOS, and so the incremental contribution of Project traffic could still cause a violation of a State ambient air quality standard for CO. Therefore, this impact would remain **significant and unavoidable**.

(c) Air Quality Plan Consistency. The CEQA Guidelines, Section 15125(d), states that an EIR shall discuss "any inconsistencies between a proposed project and applicable general plans and regional plans. Such regional plans include, but are not limited to, the applicable air quality attainment or maintenance plan or State Implementation Plan [SIP]...". General Plans of cities and counties must show consistency with the YSAQMD Air Quality Attainment Plan (AQAP) and SIP strategies. This is because the air quality planning process estimates growth in emissions based in part on local land use plans and emission growth is offset by regional controls on sources of air pollution. According to the YSAQMD, redevelopment plans should receive the same scrutiny as general plans and other land use plans with respect to consistency with the AQAP and SIP.

AQAP and SIP Consistency. A project which does not require a change in land use designation, where the new use would be more intensive than the existing designation, would be considered by the YSAQMD to be consistent with the 2006 Sacramento Area Regional Ozone Attainment Plan. The type and intensity of anticipated new uses and development facilitated by the Project within the proposed Project Area would be in accordance with the land use designations and policies of the Rio Vista General Plan and the zoning designation. Therefore the project would be consistent with the 2006 Sacramento Area Regional Ozone Attainment Plan and would have **no impact** related to air quality plan consistency.

Mitigation. No significant impact has been identified; no mitigation is required.

(d) Toxic Air Contaminants.

Impact 13-3: Diesel Particulate Matter Exposure Impacts. The assumed research station use could involve the storage and use of up to approximately 50 boats, potentially including one 200-foot vessel, and several 40-to-120-foot vessels. Diesel engine boats can be substantial emitters of diesel particulate matter. The nearest existing adjacent homes to the proposed Project Area would be at sufficient distance (at least 600 feet away) from boats in the river to avoid an elevated health risk from boat-emitted diesel particulate matter. Based on conceptual site plans prepared for the 1998 Base Reuse Plan and the 2001 Supplement to the Base Reuse Plan, the proposed on-site sports fields and courts would likely be located in the western portion of the proposed Project Area (more than 300 feet from the river), and thus would also be at a sufficient distance to avoid an elevated health risk. However, until the location of anticipated active recreation uses within the Project Area is finalized, it is assumed that users of active recreation facilities could be exposed to diesel particulate matter at levels that may cause an elevated health risk. This possible effect represents a ***potentially significant impact*** (see criterion (d) in subsection 13.3.1, "Significance Criteria," above).

Explanation:

Nearby sensitive receptors with respect to diesel particulate matter would include the few existing homes near the northwest and southwest corners of the site, and users of the proposed sports fields and courts, since persons exercising can receive greater exposure and children are more susceptible to air quality related health problems. Lodge visitors would not be considered sensitive receptors because their stays would be temporary and brief.

In 2005, the ARB published the Air Quality and Land Use Handbook: A Community Health Perspective to provide information for local planners and decision-makers about land use compatibility issues associated with emissions from industrial, commercial and mobile sources of air pollution. The ARB recommends minimum separations between sensitive land uses and several categories of existing sources, including high-traffic roads and ports. The ARB recommends not siting new homes or other sensitive land uses within 500 feet of rural roads with 50,000 vehicles per day, within 50 feet of a typical gas station, or immediately downwind of major ports. These uses provide some indication of potential risks associated with diesel particulate matter. If the a project would place one or more receptors near a TAC source at a distance that is less than that indicated in the ARB Handbook, the project would be considered to have an elevated risk and it would be advisable to conduct a health risk assessment using a dispersion model to calculate the increased risk.

A new fuel dock is not expected to be included as part of the development of a potential research station; the adjacent Delta Marina could provide fuel for research station boats.

Mitigation 13-3. Active recreation uses, such as sports fields, outdoor courts and playgrounds, shall be located at least 300 feet away from sources of diesel particulate matter or other TACs. For proposed facilities closer than 300 feet, a health risk assessment based on detailed air dispersion modeling shall be performed to verify that the health risk from exposure to diesel particulate matter would not exceed YSAQMD significance thresholds. With implementation of this measure, the impact of the Project related to exposure to diesel particulate matter would be ***less than significant***.

14. CLIMATE CHANGE

This chapter describes the Project-related climate change setting, assesses the potential climate change impacts of the Project (the Redevelopment Plan), and identifies mitigation measures to reduce identified significant climate change impacts.

14.1 SETTING

14.1.1 Background

The term *climate change* is often used interchangeably with the term *global warming*. *Climate change* refers to any significant change in measures of climate (such as temperature, precipitation, or wind) lasting for an extended period (decades or longer). Climate change may result from a variety of causes, both natural and human-induced. *Global warming* refers to an average increase in the temperature of the atmosphere near the Earth's surface and in the troposphere, which can contribute to changes in global climate patterns. Global warming can occur from a variety of causes, both natural and human-induced. In common usage, "global warming" often refers to the warming that can occur as a result of increased emissions of greenhouse gases from human activities.¹

Gases that trap heat in the atmosphere are referred to as "greenhouse gases" (GHGs) because they capture heat radiated from the sun as it is reflected back into the atmosphere, much like a greenhouse does. Scientific consensus has held that the world's population is releasing GHGs faster than the earth's natural systems can absorb them. These GHGs are released as by-products of fossil fuel combustion, waste disposal, energy use, land use changes, and other human activities.

Over the past 200 years, GHG emissions and deforestation have caused the concentrations of heat-trapping GHGs to increase significantly in the atmosphere. There is international scientific consensus that human-caused increases in GHGs have and will continue to contribute to global warming, although there is uncertainty concerning the magnitude and rate of the warming. The Intergovernmental Panel on Climate Change (IPCC), an international group of scientists and representatives, warns that most of the warming observed over the last 50 years is attributable to human activities and predicts a 2 to 11.5 degrees Fahrenheit (F) global temperature increase over the next 100 years.

Carbon dioxide (CO₂) accounts for approximately 85 percent of total human activity-generated GHG emissions. Emissions of other GHGs, such as methane (CH₄) and nitrous oxide (N₂O), have also increased due to human activities. Methane and nitrous oxide emissions account for almost 14 percent of total greenhouse gas emissions. Each of these gases, however, contributes to global warming at a different relative rate. Methane has a global warming

¹U.S. Environmental Protection Agency (EPA) website, Climate Change, Basic Information, September 30, 2008.

potential 23 times that of carbon dioxide, while the global warming potential of nitrous oxide is 296 times that of the same amount of carbon dioxide. To account for these differences, estimates of GHG emissions are often described in terms of *carbon dioxide equivalents* (CO₂e).

14.1.2 Existing Conditions

(a) Global GHG Emissions. A report of the Intergovernmental Panel on Climate Change (IPCC) predicts a global temperature increase of between 2.0 and 11.5 degrees Fahrenheit (1.1 and 6.4 degrees Celsius) by the end of the 21st century under six different scenarios of emissions and carbon dioxide equivalent concentrations.¹ Sea levels are predicted to rise by 0.18 to 0.59 meters (7 to 23 inches) during this time, with an additional 3.9 to 7.8 inches possible, depending upon the rate of polar ice sheets melting from increased warming. The IPCC reports that the increase in hurricane and tropical cyclone strength since 1970 can also likely be attributed to human-generated greenhouse gases.

Global GHG inventory data published in 2007 by the United Nations² indicated that worldwide emissions of GHGs in 2004 totaled 27 billion metric tons.³

(b) U.S. GHG Emissions. In the U.S., energy-related activities account for three-quarters of human-generated GHG, mostly in the form of carbon dioxide emissions from burning fossil fuels. More than half of the energy-related emissions come from large stationary sources such as power plants, while about a third comes from transportation. Industrial processes (such as the production of cement, steel, and aluminum), agriculture, forestry, other land use, and waste management are also important U.S. sources of GHG emissions.⁴

The latest EPA-published national inventory of U.S. GHG emissions shows that in 2005 the U.S. emitted over 7.2 billion metric tons of GHG. (A million metric tons of CO₂e is roughly equal to the annual GHG emissions of an average U.S. power plant.)

(c) California GHG Emissions.

(1) Current Emissions. The California Air Resources Board (ARB) is responsible for developing the California Greenhouse Gas Emission Inventory. This inventory estimates the amount of GHGs emitted to and removed from the atmosphere by human activities within the State of California and supports the AB 32 Climate Change Program. The ARB's current GHG emission inventory covers the years 2000 - 2006 and is based on fuel use, equipment activity, industrial processes, and other relevant data (e.g., housing, landfill activity, agricultural lands,

¹IPCC, 2007: Summary for Policymakers, in: Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change.

²Combined total of Annex I and Non-Annex I Country CO₂eq emissions, United Nations Framework Convention on Climate Change (UNFCCC), 2007, *Greenhouse Gas Inventory Data*. Information available at http://unfccc.int/ghg_data/ghg_data_unfccc/time_series_annex_i/items/3814.php and http://maindb.unfccc.int/library/view_pdf.pl?url=http://unfccc.int/resource/docs/2005/sbi/eng/18a02.pdf.

³A metric ton is equivalent to approximately 1.1 tons.

⁴EPA website.

etc.). The emission inventory estimates are based on the actual amount of all fuels combusted in the state, which accounts for over 85 percent of the GHG emissions within California.

According to the ARB emissions inventory estimates, California emitted approximately 480 million metric tons of GHGs in 2006.¹ The state is estimated to be the second largest emitter of greenhouse gas emissions in the United States.² This large number is due primarily to the sheer size of California compared to other states. By contrast, California has the fourth lowest per-capita GHG emission rate from fossil fuel combustion in the country, due to the success of its energy efficiency and renewable energy programs, and commitments that have lowered the state's GHG emissions rate of growth by more than half of what it would have been otherwise.³

Transportation is the largest source of GHG emissions in California, followed by industrial sources and electric power generation.⁴ The ARB estimates that transportation was the source of approximately 38 percent of the state's GHG emissions in 2004, followed by electricity generation (both in-state and out-of-state) at 23 percent, and industrial sources at 20 percent. The remaining sources of GHG emissions in 2004 were residential and commercial activities at 9 percent, agriculture at 6 percent, high global warming potential gases at 3 percent, and recycling and waste at 1 percent.⁵

The California EPA Climate Action Team stated in its March 2006 report that the composition of gross climate change pollutant emissions in California in 2002 (expressed in terms of CO₂e) was as follows:

- Carbon dioxide (CO₂) accounted for 83.3 percent;
- Methane (CH₄) accounted to 6.4 percent;
- Nitrous oxide (N₂O) accounted to 6.8 percent; and
- Fluorinated gases (HFCs, PFC, and SF₆) accounted for 3.5 percent.⁶

(2) *Potential Future Emissions.* ARB staff has also projected anticipated 2020 unregulated GHG emissions--i.e., the emissions that would be expected to occur statewide in the absence of any GHG reduction actions. ARB staff estimates the statewide 2020 unregulated GHG emissions would be 596 million metric tons (of CO₂e).

¹California Air Resources Board, Greenhouse Gas Inventory Data - 1990 to 2004. <http://www.arb.ca.gov/cc/inventory/data/data.htm>. Viewed November 2008.

²U.S. Environmental Protection Agency, State CO₂ Emissions from Fossil Fuel Combustion, 1990 – 2007, http://www.epa.gov/climatechange/emissions/state_energyco2inv.html.

³California Energy Commission (CEC), Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004 - Final Staff Report, publication # CEC-600-2006-013-SF, Sacramento, CA, December 22, 2006; and January 23, 2007 update to that report.

⁴California Environmental Protection Agency, Climate Action Team Executive Summary Climate Action Team Report to Governor Schwarzenegger and the California Legislature, 2006.

⁵California Air Resources Board, <http://www.climatechange.ca.gov/inventory/index.html>, September 2008.

⁶California Environmental Protection Agency, *Climate Action Team Report to Governor Schwarzenegger and the Legislature*, March 2006.

GHG emissions in 2020 from the transportation and electricity sectors are expected by ARB staff to increase by 26 percent and 28 percent from average 2002-2004 levels, respectively, if no actions are taken.¹ The industrial sector consists of large stationary sources of GHG emissions and the percentage of the total 2020 emissions from that sector is projected by ARB staff to be 17 percent of total GHG emissions. The remaining sources of GHG emissions anticipated in 2020 are high global warming potential gases at 8 percent, residential and commercial activities at 8 percent, agriculture at 5 percent, and recycling and waste at 1 percent.²

(3) *Potential Statewide Impacts.* In the Findings and Declarations for Assembly Bill (AB) 32 (see section 14.2.1), the California State Legislature declared that:

The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to the marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other health-related problems.

The Sierra snowpack, an important source of water supply for the state, has shrunk 10 percent in the past 100 years. It is expected to continue to decrease by up to 25 percent by 2050.³

Additional potential impacts of global warming in California may include more extreme heat days per year, more high ozone days, more large forest fires, and more drought years.⁴ Secondary effects are likely to include costly impacts on agriculture, changes in habitat and biodiversity, and contribution to global rise in sea level.

(4) *Sea Level Rise.* Worldwide climate changes are causing sea levels in California coastal areas to rise. About 8 inches of increase have been recorded at the Golden Gate Bridge over the past 100 years, threatening low coastal areas in the Bay region with inundation and serious damage from storms.⁵ Predicted long-term climate change (increased temperatures) is expected to continue to cause rising sea levels along the California coastline, particularly in the San Francisco and the San Joaquin Delta areas, due to ocean expansion. According to a 2008 California Department of Water Resources report, recent peer-reviewed studies estimate a rise

¹California Air Resources Board, Greenhouse Gas Inventory – 2020 Forecast, http://www.arb.ca.gov/cc/inventory/data/forecast.htm#summary_forecast, viewed February 25, 2010.

²California Air Resources Board (ARB), <http://www.arb.ca.gov/cc/inventory/data/forecast.htm>. September 2008.

³ARB Draft Scoping Plan.

⁴California Air Resources Board (ARB), 2006. Climate Change website (<http://www.arb.ca.gov/cc/120106workshop/intropres12106.pdf>), viewed December 4, 2007; and <http://www.arb.ca.gov/cc/factsheets/ccbackground.pdf>, viewed February 17, 2009.

⁵ARB Draft Scoping Plan, page 6.

of between 7 to 55 inches by 2100 along California's coast.¹ A recent report by the Pacific Institute predicts that a 1.4-meter (55-inch) sea level rise along California's coast will put 480,000 people at risk of a 100-year flood event, given today's population. This amount of sea level rise is also expected to accelerate erosion, resulting in a loss of 41 square miles (over 26,000 acres) of California's coast by 2100.²

(d) Rio Vista Emissions. Fuel consumption in the transportation sector is the single biggest source of GHG emissions in most urban communities, such as Rio Vista and developed parts of Solano County. The transportation sector includes emissions from private, commercial, fleet, and transit vehicles. Residential, commercial, and industrial sector sources include emissions from electricity and natural gas used in both private and public sector buildings and facilities.

14.2 PERTINENT PLANS AND POLICIES

State and local plans, policies, and programs pertinent to climate change and consideration of the climate change impacts of the proposed Redevelopment Plan are described below.

14.2.1 Federal

(a) President's Executive Order 13514 (2009). In October 2009, President Obama issued Executive Order 13514 titled "Federal Leadership in Environmental, Energy, and Economic Performance." The Executive Order requires Federal agencies to develop Strategic Sustainability Performance Plans and set a 2020 greenhouse gas emissions reduction target, and establishes a number of goals to direct agency efforts in improving efficiency in natural resources consumption and supporting the development of sustainable communities. The President calls on Federal agencies to consider implementation of various greenhouse gas reductions strategies and associated actions, including but not limited to: reducing energy intensity in agency buildings; increasing agency use of renewable energy; reducing the use of fossil fuels, improving water use efficiency and management, promoting pollution prevention and eliminating waste.³

14.2.2 State of California

(a) Governor's Executive Order S-3-05 (2005). According to climate scientists, California and the rest of the developed world will have to cut emissions by 80 percent from today's levels to stabilize the amount of carbon dioxide in the atmosphere and prevent the most severe effects of climate change.⁴ In 2005, in recognition of this long-range goal and California's vulnerability to

¹California Department of Water Resources, Managing an Uncertain Future: Climate Change Adaptation Strategies for California's Water, October 2008, page 6.
(<http://www.water.ca.gov/climatechange/docs/ClimateChangeWhitePaper.pdf>)

²California Climate Change Center, The Impacts of Sea-Level Rise on the California Coast, prepared by Matthew Heberger, Heather Cooley, Pablo Herrera, Peter H. Gleick, and Eli Moore of the Pacific Institute, March 2009, page xi. (http://www.pacinst.org/reports/sea_level_rise/report.pdf)

³Executive Order 13514: Federal Leadership in Environmental, Energy, and Economic Performance. October 5, 2009.

⁴California Air Resources Board (ARB) Draft Scoping Plan, page ES-2.

the effects of climate change, Governor Schwarzenegger established Executive Order S-3-05, which sets forth a series of target dates by which statewide emission of greenhouse gases (GHG) would be progressively reduced, as follows: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; and by 2050, reduce GHG emissions to 80 percent below 1990 levels.¹

(b) AB 32 (2006). In 2006, California passed the California Global Warming Solutions Act of 2006 (Assembly Bill No. 32; California Health and Safety Code Division 25.5, Sections 38500, et seq., or AB 32), which requires the ARB to design and implement emission limits, regulations, and other measures, such that statewide GHG emissions are reduced to 1990 levels by 2020 (representing a 25 percent reduction in emissions).

AB 32 establishes a timetable for the ARB to adopt emission limits, rules, and regulations designed to achieve the intent of the Act. The ARB met the first AB 32-established milestones in 2007 by developing a list of early actions to begin sharply reducing greenhouse gas emissions, assembling an inventory of historic emissions, and establishing the 2020 emissions limit. A total of 44 early action measures have been identified by the ARB.² Pertinent measures from the list that could become effective during implementation of the proposed Redevelopment Plan are generally limited to construction-related equipment operations.

AB 32 stipulated that the ARB must also develop a "Climate Change Scoping Plan" to lower the state's greenhouse gas emissions to meet the 2020 limit. In December 2008, the ARB approved a "Climate Change Scoping Plan" that proposes a comprehensive set of actions designed to reduce overall carbon emissions in California, reduce dependence on oil, diversify state energy sources, and save energy. The Scoping Plan measures adopted by the ARB will be further developed over the next three years and put in place by 2012.

The Scoping Plan indicates that reducing statewide greenhouse gas emissions to 1990 levels means cutting approximately 30 percent from business-as-usual emission levels projected for 2020, or about 10 percent from today's levels. On a per-capita basis, the Scoping Plan indicates that this means reducing statewide annual emissions of carbon dioxide for every person in California from approximately 14 tons now down to about 10 tons by 2020.

AB 32 does not require local agencies, such as the City of Rio Vista, to develop strategies to achieve a reduction of GHG emissions to their 1990 levels by 2020. Rather, the California Legislature has specifically assigned that responsibility to the ARB (see Sections 38510 and 38560 of the Health and Safety Code).

(c) SB 375 (2008). Senate Bill 375 (SB 375) requires the ARB to set regional targets for the purpose of reducing greenhouse gas emissions from passenger vehicles, for 2020 and 2035, by September 30, 2010. If regions develop integrated land use, housing and transportation plans that meet the SB 375 targets, new projects in these regions can be relieved of certain review

¹There are 12 exceptions to this requirement (e.g., emergency situations, military, adverse weather conditions, etc.), including: when a vehicle's power takeoff is being used to run pumps, blowers, or other equipment; when a vehicle is stuck in traffic, stopped at a light, or under direction of a police officer; when a vehicle is queuing beyond 100 feet from any restricted area; or when an engine is being tested, serviced, or repaired.

²California Air Resources Board, *Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California Recommended for Board Consideration*, October 2007.

requirements of CEQA. The targets apply to the regions in the state covered by the [18 metropolitan planning organizations \(MPOs\)](#). SB 375 requires the ARB to establish GHG emission reduction targets related to transportation for each Metropolitan Transportation Organization (MTC) region. The Metropolitan Transportation Commission (MTC) is the designated MPO for Solano County and the greater Bay Area region.

Under SB 375, each MPO must then add a new element to its long-range Regional Transportation Plan (RTP) called a “Sustainable Communities Strategy,” or SCS. The SCS seeks to achieve the targeted reductions in greenhouse gas emissions if there is a feasible way to do so, planning for compact growth and matching transportation improvements.

Because the RTP is subject to federal constraints (such as on relying on reasonably available funding and a feasible growth pattern), the SCS may not be able to reach the greenhouse gas target that has been set for the region. In that case, the MPO must develop an Alternative Planning Strategy (APS) which does reach the target. The biggest difference between the Sustainable Communities Strategy and the Alternative Planning Strategy is that the SCS is made part of the RTP, and that transportation projects in the SCS qualify for federal funding.

The SCS and the APS do not supersede a local general plan, local specific plan or local zoning ordinances. However, general consistency of local efforts with an SCS or an APS that has been approved by ARB allows housing developments and transportation projects to qualify for new CEQA streamlining provisions.

(c) SB 97 (2007). State Senate Bill 97 amended the CEQA statute to clearly establish that GHG emissions and the effects of GHG emissions are appropriate subjects for CEQA analysis, and required amendments to the CEQA Guidelines, which were adopted by the Resources Agency on December 30, 2009.

(d) CEQA Guidelines. Pursuant to SB 97, amendments to the CEQA Guidelines for the analysis and mitigation of GHG emissions were adopted by the Resources Agency on December 30, 2009. The amendments provide direction on determining the significance of and mitigating GHG emissions impacts. The amendments suggest that, when determining the significance of GHG emissions, lead agencies should evaluate: (1) the extent to which the project may increase or reduce GHG emissions compared with the existing environment, (2) whether the emissions exceed a threshold of significance that applies to the project, and (3) the extent to which the project complies with requirements adopted to implement a statewide, regional, or local plan for reduction of GHG emissions. The amendments also suggest that mitigation measures include (1) measures contained in an existing plan to reduce GHG emissions; (2) reductions in GHG emissions through project design, such as those contained in Appendix F to the CEQA Guidelines (Energy Conservation); (3) off-site measures, including offsets; and (4) measures that sequester GHG emissions (i.e., capture at the source).

14.2.2 City of Rio Vista

The City has not conducted a greenhouse gas emissions inventory or adopted a Climate Action Plan, performance measures or a GHG efficiency metric. The Rio Vista General Plan includes numerous goals, policies, and programs which, if implemented, will reduce Rio Vista’s impacts on global climate change and reduce the threats associated with global climate change on the city.

(a) Rio Vista General Plan. The following General Plan policies are particularly relevant to reducing greenhouse gas emissions and adapting to climate change within the city and the proposed Project Area:

Circulation and Mobility Element:

GOAL 8.1 TO PROVIDE A MIX OF LAND USES CLOSE TO EACH OTHER AND AT SUFFICIENT INTENSITIES TO SUPPORT WALKING, BICYCLING, AND OTHER ALTERNATIVE MODES OF TRANSPORTATION.

Policy 8.2 The City shall designate land uses in a manner that minimizes use of the automobile within the city limits.

GOAL 8.3 TO DEVELOP A COMPREHENSIVE PEDESTRIAN AND BICYCLE SYSTEM OVER TIME THAT IS COORDINATED WITH THE CITY'S ROADWAY SYSTEM.

Policy 8.3.B The City shall complete the comprehensive pedestrian and bicycle systems, including off-street multipurpose paths and trails linking major new development areas with the waterfront.

Policy 8.3.C The City shall develop pedestrian and bicycle paths in the trail corridor and along the waterfront.

Policy 8.3.D The City shall maintain the bicycle pathway system in a condition that provides a safe means of bicycle travel and connects to all parts of the City.

Policy 8.3.I As bikeways are constructed, the City shall ensure that they provide direct routes to major employment centers from residential areas.

Policy 8.3.N The City shall actively promote bicycling and bicycle safety.

Policy 8.3.O The City shall plan for a multi-modal transfer site that incorporates automobile parking areas, bike parking, transit, pedestrian paths, and park-and-ride pick-up points. (Also, see Resource Conservation and Management Element for General Plan Policy 10.6.H.)

GOAL 8.10 TO EFFECTIVELY MANAGE REGIONAL TRAFFIC GROWTH.

Policy 8.10.A The City shall actively participate in regional planning efforts and programs at the Bay Area, County, and subregional level to reduce regional traffic growth.

Resource Conservation and Management Element:

GOAL 10.6 TO RECOGNIZE IMPROVED AIR QUALITY AS A HEALTH BENEFIT AND TO PRESERVE AIR QUALITY AS A NATURAL RESOURCE.

Policy 10.6.B The City shall ensure that development projects facilitate non-motorized travel through the use of connecting streets, alleys, and connecting pathways.

Policy 10.6.D The City shall ensure that existing trees and vegetation are retained and incorporated into the project design wherever feasible.

Policy 10.6.E The City shall ensure that new development pays its fair share of the cost to provide alternative transportation systems, including bikeways, pedestrian paths, and public transit facilities.

Policy 10.6.F The City shall encourage the use of non-motorized transportation wherever possible in the community.

Policy 10.6.G The City shall encourage the use of public transportation as an alternative to the automobile.

Policy 10.6.J All City submittals of transportation improvement projects to be included in regional transportation plans shall be consistent with the air quality goals and policies of the General Plan.

GOAL 10.8 TO ENCOURAGE THE OPTIMAL USE OF AVAILABLE ENERGY RESOURCES.

Policy 10.8.A The City shall promote energy conservation programs for all utility users.

Policy 10.8.B The City shall encourage active and passive solar energy design in building and site development.

Policy 10.8.C The City shall encourage the development and use of alternative energy sources.

GOAL 10.9 TO REDUCE THE AMOUNT OF SOLID WASTE GENERATED IN RIO VISTA.

Policy 10.9.A The City shall promote waste reduction methods within the City.

Policy 10.9.B The City shall promote recycling and resources conservation.

Public Facilities and Services Element:

GOAL 12.8 TO ENCOURAGE AND PROVIDE FOR WATER AND ENERGY CONSERVATION EFFORTS BALANCED WITH INCREASES IN SUPPLIES.

Policy 12.8.A The City shall develop and implement water conservation standards.

14.3 IMPACTS AND MITIGATION MEASURES

14.3.1 Significance Criteria

Based on the latest (2010) CEQA Guidelines, the Project would be considered to have a significant impact related to global climate change if it would:

(a) Substantially impede the attainment of the State's GHG emissions reduction goal of reducing state GHG emissions to 1990 levels by the year 2020, or 80 percent below 1990 levels by 2050; or

(b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Section 15064.4 of the State CEQA Guidelines require a lead agency to make a good-faith effort, based on available information, to describe, calculate or estimate the amount of GHG emissions resulting from a project. The lead agency has the discretion to determine, in the context of a particular project, whether to use a model or methodology to quantify GHG emissions, and which model or methodology to use, or whether to rely on a qualitative analysis or performance based standards.

The YSAQMD recommends at least a qualitative analysis of GHG emissions and climate change impacts for larger projects but it does not recommend any particular approach or threshold of significance.

This EIR uses an analysis approach and thresholds of significance based on the Bay Area Air Quality Management District (BAAQMD) 2009 Draft CEQA Guidelines. According to the 2009 BAAQMD Draft CEQA Guidelines, the threshold of significance for construction-related GHG emissions is the presence of best management practices (BMPs). If the plan does not include the most recent BAAQMD recommended BMPs, construction-related GHG emissions would result in a significant impact. Therefore, the threshold of significance used in this EIR for construction-related GHG emissions is the presence of the following performance-based BMPs:

- Alternative-fueled (e.g., biodiesel, electric) construction vehicles/equipment of at least 15% of the fleet
- Local building materials of at least 10 percent
- Recycle at least 50 percent of construction waste or demolition materials.

According to the 2009 BAAQMD Draft CEQA Guidelines, the threshold of significance for operational-related GHG emissions of plans is a GHG efficiency-based metric of 6.6 metric tons (MT) per service population per year.¹ If annual emissions would exceed this level, the proposed project would result in a cumulatively considerable contribution to global climate change and a significant impact.

14.3.2 Impacts and Mitigation Measures

Impact 14-1: Construction GHG Emissions. Construction activities would generate greenhouse gas (GHG) emissions that could contribute to global climate change. This possible effect represents a ***potentially significant impact*** (see criteria [a] and [b] in subsection 14.3, "Significance Criteria," above).

Redevelopment activities within the proposed Project Area, including the demolition of buildings and the construction of new roads, infrastructure, park and recreation facilities, and other site improvements, as well as the construction of new development stimulated by the proposed Redevelopment Plan, would generate GHG emissions. GHG emissions would be emitted by construction equipment and the combustion of fossil fuels for construction vehicles

¹Service population is defined as the number of residents plus the number of jobs. The proposed Redevelopment Plan would result in a service population of 240, assuming no resident population and an estimated 240 employees, based on estimated 230 direct jobs for the research station, lodge and restaurant as presented in the 2001 Supplement to the Base Reuse Plan (Brion & Associates, Rio Vista Army Reserve Center Reuse Plan Supplemental Economic Analysis, July 2001) and an estimated 10 jobs for the community park and community center.

and tools, construction vehicle trips, worker commute trips, grid-delivered electricity for lighting and equipment, and construction waste.

Mitigation 14-1. The mitigation measures listed below for construction GHG emissions are in addition to the measures for short-term construction emissions of criteria air pollutants ROG and NO_x contained in Mitigation 13-1 in Chapter 13, Air Quality, which would also serve to reduce GHG emissions. Future construction activities within the proposed Project Area shall implement the following measures:

- (a) At least 15 percent of construction vehicles and equipment shall be alternative-fueled (e.g., biodiesel, electric);
- (b) At least 10 percent of building materials used in all new construction, additions and alterations shall be locally sourced building materials; and
- (c) At least 50 percent of construction and demolition waste shall be recycled.

With these measures, Project impacts related to construction GHG emissions would be considered ***less than significant***.

Impact 14-2: Long-Term GHG Emissions from Operations. The 244,500 square feet of non-residential development facilitated by the proposed Redevelopment Plan would generate an estimated total of 5,178 MT per year of CO₂ emissions. Based on a service population of 240, the Project would result in CO₂ emissions of 21.6 MT per year per service population, which would exceed the significance threshold applied in this EIR of 6.6 MT per year per service population (based on the proposed significant guidelines of the Bay Area Air Quality Management District). GHG emissions from ongoing occupancy and operation of development in the Project Area would represent a considerable contribution to the significant cumulative impact of global climate change, representing a ***potentially significant impact*** (see criteria [a] and [b] in subsection 14.3.1, "Significance Criteria," above).

Explanation:

Ongoing occupancy and operation of redevelopment-facilitated development would result in a net increase in CO₂ and other greenhouse gas emissions due primarily to increases in vehicle miles traveled, energy use, and solid waste disposal:

- **Transportation.** The Project would increase GHG emissions by facilitating development and thereby increasing vehicle miles traveled (VMT) associated with transporting people and goods to and from the proposed Project Area.
- **Energy Use.** Energy use includes building space heating and cooling, and water heating, and energy associated with water use and wastewater treatment.

- *Consumer Products and Solid Waste Disposal.* Consumption in homes, businesses and public facilities creates demand for products that require upstream, energy intensive production processes, which result in associated GHG emissions. Efforts to recycle and reduce consumption will help keep waste out of landfills, where it releases methane, a particularly powerful greenhouse gas.

CO₂ is the primary GHG emitted from urban development projects and represents over 95 percent of the GHG potential from these types of projects.¹ Operational mobile and area source emissions of CO₂ were estimated using the URBEMIS 2007 emissions model. The daily trip generation rates used in the traffic analysis were input for mobile sources and other default values were left unchanged.

This analysis approach overestimates mobile source emissions from vehicle trips because it conservatively assumes that all vehicle trips are new trips. This is a standard approach for air quality analyses because it is not normally possible to determine whether emissions sources are new sources within an air basin, or whether they are sources that were already in the air basin and just moved to a new location. However, because the impacts of GHG emissions are global and the significance criteria relate to state-wide GHG emissions reductions goals, a GHG-emitting activity that merely changes location without increasing total emissions would in reality have no impact.

Mobile source emissions from boats were not included in the URBEMIS 2007 emissions model. The assumed research station use could involve the storage and use of up to approximately 50 boats, potentially including one 200 foot vessel, several 40 to 120 foot vessels, and the remainder up to 40 foot vessels. To the extent that the research station would be a consolidation in this one new location of boats and other equipment from existing facilities elsewhere in the region, research station boats would not represent entirely new sources of GHG emissions. Future recreational uses that may be developed within the proposed Project Area could also involve the use of recreational boats.

The URBEMIS 2007 model does not account for GHG emissions from stationary sources, such as boilers, back-up generators, fueling stations, etc. Stationary source GHG emissions would depend on the type and quantity of equipment, and the rate and quantity of fuel consumed. The specific equipment and possible stationary source GHG emissions associated with a research station or other potential future use is too speculative to predict or evaluate in this Program EIR. Therefore stationary sources were not included in this analysis but would be subject to their own project-level environmental review to evaluate their specific characteristics.

¹California Air Pollution Control Officers Association (CAPCOA), CEQA & Climate Change, January 2008.

Mitigation 14-2. The following measures shall be implemented for future discretionary development applications within the proposed Project Area, unless project-specific evaluation for a future individual project under consideration demonstrates that mitigation is not required because GHG emissions would be less than the air quality management district thresholds of significance:

(a) The on-site segment of the Class 1 bike path and multi-use trail identified in the City's General Plan and the Parks Master Plan, and off-site segments of the multi-use trail connecting north to Riverview Middle School, Rio Vista High School and the nearest public sidewalk on 2nd Street, and south to Sandy Beach Regional Park, should be developed and available to serve future community recreation uses developed within the proposed Project Area.

(b) Employers with over 20 employees should implement a transportation demand management (TDM) program, which includes some combination of the following measures to City satisfaction:

- preferential carpool parking,
- carpool matching program,
- dedicated employee transportation coordinator,
- information provided on transportation alternatives,
- secure bike parking,
- showers and changing facilities,
- alternative work schedules, and
- telecommuting options.

(c) At least 15 percent of fleet vehicles and boats associated with the planned delta research center should be alternative-fueled (e.g., biodiesel, electric).

(d) Shore power connections should be provided for boats to minimize engine idling and GHG emissions-generating auxiliary power sources.

(e) Boat idling time should be limited to five (5) minutes when not in use, unless more time is required per engine manufacturer's specifications or for safety reasons.

(f) All buildings should exceed California Code of Regulations Title 24 Energy Efficiency Standards. Related Title 24 calculations should be prepared and signed by a California Association of Building Energy Consultants (CABEC) certified energy plans examiner (CEPE).

(g) On-site renewable energy systems that produce either electricity and/or thermal energy for on-site use should be considered, in addition to passive solar energy efficiency strategies.

(h) New construction, additions and alterations should adhere to California Green Building Code standards.

(continued)

Mitigation 13-1 (continued):

- (i) Buildings with a floor area greater than 10,000 square feet should achieve Leadership in Energy and Environmental Design (LEED) New Construction Certification or equivalent.
- (j) Roofing materials and paving should have a high solar reflective index (preferably a Solar Reflectance Index greater than 29 percent or a solar reflectance greater than 0.3).
- (k) Existing healthy mature trees in the Project Area should be preserved and maintained.
- (l) Paved areas within 50 feet of buildings should be shaded by trees, shrubs, or shading elements.
- (m) Sports field lighting should employ high efficiency lighting design and equipment.

The effectiveness of such measures in reducing the GHG emissions of future development within the proposed Project Area to below the threshold of significance cannot be determined. Therefore, the incremental contribution of the Project to the cumulative impact of global climate change would remain considerable and thus ***significant and unavoidable***.

15. HAZARDS AND HAZARDOUS MATERIALS

This section discusses existing conditions and potential impacts of the Project related to hazardous materials, airport hazards, emergency response plans and wildland fires.

15.1 SETTING

15.1.1 Hazardous Materials

This section describes existing conditions related to hazardous materials, including: (a) residual soil and groundwater contamination from the previous military use of the site; (b) asbestos- and lead-containing building materials within the buildings and structures remaining on the site; (c) existing hazardous materials use and contamination sites in the vicinity of the proposed Project Area; (d) hazards associated with the existing natural gas transmission line on the site; and (e) hazards associated with the use of agricultural chemicals on adjacent farmland.

(a) Residual Soil and Groundwater Contamination. Hazardous substances and petroleum products were stored, used and released into the environment within the proposed Project Area during its previous use by the Army. Various investigations were conducted by the Army of soil, groundwater and river sediments on and adjacent to the proposed Project Area to determine the nature and extent of contamination and necessary removal actions. The investigations revealed soil contamination exceeding regulatory standards in several areas. The investigations also revealed no significant impacts to groundwater or river surface water quality. The contaminated soils were removed and properly disposed off-site.

A risk assessment was performed to evaluate the potential risks to human health and the environment from residual concentrations of contaminants remaining after contaminated soils were removed. A residential exposure scenario was used as a conservative approach to evaluating human health risks, since residential receptors would be expected to have the highest potential exposure to residual contamination. The results of the risk assessment indicated that the residual contaminants remaining in the soil do not pose a significant human health or ecological risk. These findings are further explained below.

(1) Chronology of Investigation and Remediation Activities. A chronology of the site investigation and remediation activities undertaken by the Army between 1996 and 2001 is presented in Table 15.1.

(2) Historical Hazardous Materials Use, Storage and Disposal. Hazardous substances and petroleum products were stored, used and released into the environment within the proposed Project Area during its previous use by the Army. Boat maintenance and repair activities were

Table 15.1
INVESTIGATION AND REMEDIATION ACTIVITIES UNDERTAKEN BY THE ARMY

<u>Year Undertaken</u>	<u>Investigation or Remediation Activity</u>
1996	Removal of treated wood poles, a cardboard drum, a debris pile, and transformers from the site.
1996	An interim investigation to delineate a work plan for additional site investigations.
1997	A site-wide search and investigation of underground storage tanks.
1997	A records search of information pertaining to site areas of historic use, storage, disposal and suspected releases.
1997-1998	A comprehensive site investigation performed to investigate potential hazardous substances and petroleum releases at the site.
1998	Removal of soil from electrical substation S-10 and pipeline T-27.
1999	An Ecological Scoping Assessment to evaluate historic and current land uses at the site, and compare potential ecological receptors with future land uses.
1999	A Supplemental Due Diligence investigation performed to verify previous investigation results.
2000	Remedial Investigations to assess the nature and extent of impacted soils and groundwater.
2000	Interim Removal Actions to remove impacted soils and eliminate sources of impacts to groundwater.
2000-2001	Quarterly groundwater sampling from monitoring wells installed during Remedial Investigation activities.
2001	A Supplemental Remedial Investigation to assess soil impacts not addressed during previous Remedial Investigations.
2001	Final Removal Actions to remove the remaining potential sources of impacts to groundwater.
2001	A Water Quality Assessment to determine if groundwater quality at the site has been, or could potentially be, impacted by historical site activities.
2001	A Terrestrial Screening Human Health and Ecological Risk Assessment to evaluate the potential risks to human health and potential ecological receptors associated with residual concentrations of any constituents of concern at the site.

SOURCE: U.S. Army Corps of Engineers, No Further Action Record of Decision/Remedial Action Plan, United States Army Reserve Center, Rio Vista, California, December 3, 2001.

the primary source of contamination that occurred at the site. Historical activities within the proposed Project Area included the following:

<u>Period</u>	<u>Use</u>	<u>Activities</u>
1911-1952	United States Engineers Dockyard	Engine and hull repair for motor launches and barges, and surface maintenance (scraping and repainting) of steel pontoons used for floating suction dredges.
1952-1974	United States Army Transportation Corps Marine Depot	Removal of water, fuel and debris from vessels going into wet/dry storage; maintenance of propellers and rudders; painting; and installation and testing of navigation and electronic equipment.
1974-1989	Rio Vista Army Reserve Center	Training Army reserve units for amphibious assaults, ship maintenance, and for service as deck hands.

(3) *Areas of Investigation.* Fourteen areas of investigation were identified on the basis of historical site use and the potential for historical releases. These fourteen areas of investigation and subsequent remediation activities are presented in Figure 15.1 and listed below.

- Area 1 Entire site
- Area 2 Marine railway/skidway/storage sheds
- Area 3 Incinerator
- Area 4 Battery shop
- Area 5 Paint refinishing area
- Area 6 Hazardous waste storage area
- Area 7 Equipment wash area
- Area 8 Fuel line/underground storage tanks
- Area 9 Sumps and wash pads
- Area 10 Storm sewer system
- Area 11 Unofficial landfill
- Area 12 Waste oil/petroleum, oil, lubricant trench
- Area 13 Open storage areas, paint lockers and transformer pads
- Area 14 Sacramento river sediments

Samples of soil and groundwater from within these fourteen areas were analyzed for various contaminants. The concentrations of contaminants were compared to background concentrations on the site and to regulatory screening levels to determine whether they could pose a significant risk to human health or the environment and clean-up was necessary. U.S. Environmental Protection Agency (USEPA) Region IX Preliminary Remediation Goals (PRGs) for residential soil were used as primary regulatory screening levels for soil samples collected at the site.¹ Central Valley Regional Water Quality Control Board (RWQCB) Water Quality Goals (WQGs) were used as primary regulatory screening levels for

¹PRGs are risk-based concentrations used for site screening and initial cleanup goals. PRGs are derived from standardized equations, combining exposure information assumptions and USEPA toxicity data. PRGs used were the most current available at the time of each respective site investigation. During the time frame of investigations conducted at the site, PRGs were updated in 1996, 1998, 1999 and November 2000.

water samples collected at the site.¹ Background concentrations of inorganic constituents (metals) in soil and groundwater at the site were used to supplement the PRGs and WQGs as screening criteria.² The greater of the PRG/WQG and the background concentration were used as the final screening level for soil and groundwater samples.

Soil contamination exceeding screening levels was identified in several of the areas of investigation. These soils were removed and properly disposed off-site. Soil analytical data for remaining soils indicate that remaining soil contamination does not warrant further investigation or removal actions.

(4) Groundwater Water Quality. A Water Quality Assessment was performed to evaluate water quality and the potential for impacts to groundwater on the site and river surface water adjacent to the site, including: the potential for inorganic chemicals in the soil to migrate to shallow groundwater to a degree that could impact groundwater quality or beneficial uses; and the impact of chemicals detected in groundwater on groundwater quality or beneficial uses.

Modeling showed that chromium and several general minerals and general parameters would theoretically leach into the shallow groundwater at concentrations exceeding background groundwater levels or WQGs. However, groundwater samples showed that groundwater was not significantly impacted by these constituents after almost eighty years of hazardous materials use on the site.

Peak residual contaminant concentrations from individual monitoring well samples indicated that several metals, general minerals and general parameters were present in the shallow site groundwater at concentrations exceeding water quality limits. However, in all cases where water quality limits were exceeded, either (1) contaminants were detected in only one or two monitoring wells and/or detected during only one sampling event, (2) contaminant detection only marginally exceeded water quality limits, or (3) soil analytical data from the areas at and upgradient of the monitoring well did not show signs of surface releases of that contaminant, which may then be attributable to heterogeneities in the site soils, which are comprised of both native soils and dredged spoils from the Sacramento River.

The Water Quality Assessment concluded that despite the modeled theoretical risk, these residual contaminants do not represent a substantial risk to groundwater quality that warrants further investigation or removal actions. All 14 monitoring wells on the site were abandoned.

(5) Sacramento River Water Quality. The potential for migration of chemicals from the site to the surface water in the Sacramento River to a degree that could impact surface water quality or beneficial uses was evaluated in the Water Quality Assessment. Sediment samples were

¹WQGs are a compilation of water quality standards developed to protect beneficial uses of groundwater and surface water. WQGs referenced in this document were the most current available at the time of each respective site investigation. During the time frame of investigations conducted at the site, WQGs were updated in 1995, 1998 and August 2000.

²Soils samples analyzed to determine background concentrations were collected from background locations (the westernmost portion of the Site at Area 13) in addition to site investigation areas not impacted by historical site activities. Groundwater background levels were determined from groundwater samples collected from the four Area 13 monitoring wells installed along the western perimeter of the site, upgradient of all historical site activities.

collected from 15 locations in the Sacramento River adjacent the site. No contaminants were detected above PRGs. In addition, sediment samples from storm drains on the site performed by the Central Valley RWQCB indicated that contaminant concentrations in site sediment carried by storm runoff to the Sacramento River have been adequately reduced by site remediation activities.

(6) *Human Health and Ecological Risk Assessment.* A screening level risk assessment evaluated the residual risks to human and ecological receptors following completion of removal actions, in accordance with a plan developed by a work group of risk assessors and project managers from the DTSC, the Central Valley RWQCB, USEPA, the Army and a remediation contractor. The incremental cancer risk for exposure to the residual concentration for each constituent of concern was calculated. The incremental values were then summed and compared to the cancer risk range of 1×10^{-4} to 1×10^{-6} , which is the acceptable risk range established by the USEPA.

A residential exposure scenario was used as a conservative approach that over-estimates potential exposure and risk to human health. Residential receptors would be expected to have the highest potential exposure to chemicals of potential concern at the site. However, there are no plans to use the site for residential purposes since the condition of conveyance of the property from the Army to the City limits future use of the site to recreational uses.

(7) *Other Hazardous Materials Contamination.* The Environmental Baseline Survey prepared by the Army in 1997 identified no information about past uses of the installation that would suggest the possibility of unexploded ordnance or radiological materials or waste on the site. Pesticide use was limited to occasional application in accordance with manufacturer's recommendations, and pesticides were not stored or mixed on the site. A radon survey has not been conducted for the site.

(b) Asbestos- and Lead-Containing Building Materials. The existing buildings remaining on the site from the former military use contain asbestos siding and other asbestos-containing building materials, and, given the period when they were constructed, are likely to contain lead-based paint. Asbestos surveys of the former Rio Vista Army Reserve Center facilities were performed in 1989 and 1998. It was determined that the majority of asbestos containing material was in a non-friable state and did not pose an imminent health threat, and was left in place. There is no record of a lead-based paint survey being conducted; however, all buildings were constructed before 1970 and are assumed to have lead-based paint. Exterior paint on most buildings is in advanced stages of deterioration, exhibiting peeling and flaking.¹ Soil lead contamination from boat maintenance and repainting activities involving lead-based paint was cleaned up as part of soil remediation activities.²

(c) Hazardous Materials Use and Contamination in the Vicinity. There is a former leaking underground fuel tank (LUFT) site located at the Delta Marina property on the north side of the inlet to Marina Creek, where petroleum products were released into the soil and groundwater approximately 30 feet from the Sacramento River. Three underground storage tanks that stored gasoline and diesel fuels were removed. Groundwater monitoring is ongoing. The proposed Project Area is not down-gradient from this contamination site. There are no other hazardous

¹Concurrent Technologies Corporation, Base Realignment and Closure (BRAC) Project Management Plan (PMP) Rio Vista Army Reserve Center, California, March 14, 2002.

²Concurrent Technologies Corporation 2002.

materials release sites mapped by the DTSC within ½-mile of the proposed Project Area.¹ There are no Hazardous Waste and Substances Sites (Cortese) List sites within Rio Vista.²

(d) Natural Gas Transmission Line. A Pacific Gas & Electric Company high pressure natural gas transmission pipeline, which provides natural gas to the greater Stockton area, is located within an easement on the northern portion of the property (see Figure 4.1 in Chapter 4, Land Use and Planning).

(e) Nearby Agricultural Chemicals Use. Chemicals classified by the California Department of Food and Agriculture as potentially injurious to humans would normally be used by agricultural operations in the Rio Vista area for weed control and pest control. The Solano County Agricultural Commissioner confirmed the occasional ground application of agricultural chemicals on the adjacent agricultural property to the west.³

15.1.2 Airport Hazards

The nearest airport, the Rio Vista Airport, is located in the northwestern portion of Rio Vista at 6000 Airport Road, more than two miles north of the proposed Project Area. The proposed Project Area is outside of the Rio Vista Airport compatibility area; development within the proposed Project Area would not be subject to airport land use restrictions. There are no private airstrips in the vicinity of the proposed Project Area.

15.1.3 Emergency Response

The City has an adopted Emergency Plan to save lives, protect and restore property, restore public services, distribute vital supplies, coordinate operations and maintain continuity of government. The Solano County Emergency Operations Plan, updated February 2007, provides for an integrated multi-jurisdictional response to large-scale emergencies.

15.1.4 Wildfire Hazards

Wildland fire protection in California is the responsibility of either the State, local government, or the federal government. Local responsibility areas (LRA) include incorporated cities and cultivated agriculture lands, where fire protection is typically provided by city fire departments, fire protection districts, counties, and by the State under contract to local government. The California Department of Forestry and Fire Protection (CAL FIRE) Fire and Resource Assessment Program (FRAP) maps areas of significant fire hazard based on fuels, terrain, weather and other relevant factors. These zones, referred to as Fire Hazard Severity Zones (FHSZ), then define the application of various mitigation strategies, including unique building

¹California Department of Toxic Substances Control, Envirostor website, viewed February 8, 2010, http://www.envirostor.dtsc.ca.gov/public/map.asp?global_id=CAD07908951. The Envirostor web page allows search for properties regulated by DTSC where extensive investigation and/or cleanup actions are planned or have been completed at permitted facilities and clean-up sites.

²The Hazardous Waste and Substances Sites (Cortese) List is a planning document used by the State, local agencies and developers to comply with CEQA requirements in providing information about the location of hazardous materials release sites. Government Code section 65962.5 requires CalEPA to develop at least annually an updated Cortese List.

³Jim Allen, Solano County Agricultural Commissioner/Sealer of Weights and Measures, Personal communication with Ricardo Bressanutti, Wagstaff/MIG, January 22, 2010.

code requirements, to reduce risk associated with wildland fires. The proposed Project Area and adjacent areas are not within a FHSZ.¹

15.2 PERTINENT PLANS, POLICIES AND PROGRAMS

15.2.1 Federal

(a) U.S. Environmental Protection Agency. The U.S. Environmental Protection Agency (EPA), Region IX, regulates chemical and hazardous materials use, storage, treatment, handling, transport, and disposal practices; protects workers and the community (along with CalOSHA-- see below); and integrates the federal Clean Water Act and Clean Air Act into California legislation.

(b) Superfund. The federal Superfund list started through the Comprehensive Environmental Response, Conservation and Liability Act (CERCLA) of 1980. CERLCIS is the accompanying national database and management system the EPA uses to track activities at hazardous waste sites considered for cleanup under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), also known as Superfund.

(c) Federal Occupational Safety and Health Administration. The federal Occupational Health and Safety Administration (OSHA) establishes and enforces federal regulations related to health and safety of workers exposed to toxic and hazardous materials. In addition, OSHA sets health and safety guidelines for construction activities and manufacturing facility operations.

(d) Department of Transportation Office of Pipeline Safety. The Department of Transportation (DOT) Office of Pipeline Safety (OPS) regulates the safety of natural gas transmission pipelines to ensure safety during installation and operation. All gas pipeline projects delivering gas through a distribution system must be designed and constructed to meet or exceed the Federal safety standards established in Title 49 Code of Federal Regulations (CFR) Part 192. These regulations include specific standards for material selection and qualification; design requirements; protection from internal, external, and atmospheric corrosion; and worker training, safety, and qualifications. In accordance with the Pipeline Safety Improvement Act of 2002 (49 United States Code 60109), the OPS regulates the integrity of gas transmission pipelines in areas with high population density, with prescriptive requirements, including repairing or replacement of potentially unsafe transmission infrastructure, and safety inspections and re-inspections.

The OPS and the DOT have also identified specific locales and areas where inadvertent releases from pipelines could have the most significant adverse consequence. Such High Consequence Areas (HCA) include areas where the pipeline is within 300, 660, or 1,000 feet of a building or outside area where 20 or more persons congregate at least 50 days in any 12-month period; that contain 20 or more structures intended for human occupancy; buildings that house populations with limited mobility; or buildings that would be hard to evacuate. The proposed Project Area may be classified as an HCA following development facilitated by the Project. Operators are required to devote additional efforts and analysis in HCAs to ensure the integrity of pipelines.

¹California Department of Forestry and Fire Protection, Solano County Draft Fire Hazard Severity Zones in LRA, October 2007, http://frap.cdf.ca.gov/webdata/maps/solano/fhszl06_1_map.48.jpg, viewed February 3, 2010.

15.2.2 State

The California Environmental Protection Agency (Cal EPA) establishes regulations governing the use of hazardous materials in the state. The Office of Emergency Services (OES) coordinates state and local agencies and resources for educating, planning, and warning citizens of hazardous materials and hazardous materials emergencies, including organized response efforts in case of emergencies. The California Highway Patrol (CHP) and the California Department of Transportation (Caltrans) are the enforcement agencies for hazardous materials transportation regulations.

(a) Polanco Redevelopment Act. The Polanco Redevelopment Act (AB 3193, Chapter 1113, Statutes of 1990, Polanco), part of the Community Redevelopment Act, was enacted to assist redevelopment agencies in responding to brownfield properties (i.e., properties with real or perceived environmental contamination) in their redevelopment areas. It prescribes processes for redevelopment agencies to follow when cleaning up a hazardous substance release in a redevelopment project area. It also provides limited immunity from liability for redevelopment agencies and subsequent property purchasers for sites cleaned up under a clean-up plan approved by the DTSC or a RWQCB. The Polanco Redevelopment Act has become a widely used tool by redevelopment agencies to guide and pursue redevelopment of brownfields.¹

(b) California Occupational Safety and Health Administration. The California Occupational Safety and Health Administration (CalOSHA) is responsible for promulgating and enforcing state health and safety standards and implementing federal OSHA laws. CalOSHA's regulatory purview includes safe work practices to minimize the potential for release of asbestos and lead during construction and demolition activities.

- *Asbestos.* CalOSHA regulations prohibit emissions of asbestos from demolition and construction activities; require medical examinations and monitoring of employees engaged in activities that could disturb asbestos; specify precautions and safe work practices to minimize the potential for release of asbestos; and require notice to federal and local government agencies before beginning demolition or construction activities that could disturb asbestos.
- *Lead.* CalOSHA establishes a maximum safe exposure level for types of construction work where lead exposure may occur, including demolition activities where materials containing lead are present; removal or encapsulation of materials containing lead; and new construction, alteration, repair, or renovation of structures with materials containing lead. Inspection, testing, and removal of lead-containing building materials must be performed by state-certified contractors who comply with applicable health and safety, and hazardous materials regulations. Building materials with lead-based paint attached are not typically considered hazardous waste unless the paint is chemically or physically removed from the building debris.

(c) Regional Water Quality Control Board. One of nine regional boards, the Central Valley RWQCB protects surface and groundwater quality from pollutants discharged or threatened to be discharged to the waters of the state. The Central Valley RWQCB issues and enforces

¹California Environmental Protection Agency, www.calepa.ca.gov/Brownfields/PolancoAct.htm; accessed October 13, 2008.

National Pollutant Discharge Elimination System (NPDES) permits and regulates leaking underground storage tanks and other sources of groundwater contamination.

(d) California Department of Toxic Substances Control. The California EPA, Department of Toxic Substances Control (DTSC), regulates hazardous substances and wastes, oversees remedial investigations, protects drinking water from toxic contamination, and warns public exposed to listed carcinogens.

(e) California Highway Patrol/Caltrans. The California Highway Patrol (CHP) and California Department of Transportation (Caltrans) have primary regulatory responsibility for the transportation of hazardous wastes and materials.

(f) Yolo-Solano Air Pollution Control District. The Yolo-Solano Air Pollution Control District regulates asbestos as a hazardous air pollutant and prohibits emissions of asbestos from demolition and construction activities involving structures that contain asbestos containing building materials.

15.2.3 Solano County

(a) Solano County Department of Resource Management. The Solano County Department of Resource Management is the certified unified program agency (CUPA) for all cities and unincorporated areas in Solano County, and is responsible for the Hazardous Materials Business Plan program. In accordance with Chapter 6.95 of the California Health and Safety Code, development sites that store above the threshold quantities of a hazardous material or any amount of hazardous waste will submit a Hazardous Materials Business Plan to the Solano County Department of Resource Management. The Hazardous Materials Business Plan must include an inventory of hazardous materials stored at the facility, with specific physical and chemical descriptions of each material. The Hazardous Materials Business Plan is reviewed annually and updated if there are any changes in the quantity or location of hazardous materials.

For uses involving hazardous materials that may involve additional risks, the Hazardous Materials Business Plan may also include a Consolidated Contingency Plan that describes the emergency response procedures to be taken in case of hazardous material spill or fire, facility identification information, emergency contacts, response procedures, emergency equipment capabilities, emergency services, and employee training. Compliance with Title 40 of the Code of Federal Regulations--preparation of a Spill Prevention, Control and Countermeasures Plan may also be required, which contains information similar to the Consolidated Contingency Plan, but is more detailed in the description of spill response and prevention measures.

(b) Solano County Department of Agriculture. State law stipulates that aerial application of herbicides and pesticides shall not be conducted within 300 feet of residential areas, and ground application of these herbicides and pesticides shall not be conducted within 100 feet of residential areas. The primary method of reducing exposure and injury from herbicide or pesticide application in Solano County is the permitting process. This process requires that applicants use only approved pesticides and herbicides in the specified manner and ensures that sensitive receptors such as hospitals, schools, sensitive crops and sensitive habitats are avoided. In addition to the permitting process, the County Department of Agriculture ensures compliance through on-site inspections that include compliance with pesticide and herbicide drift restrictions, worker protection requirements, herbicide and pesticide label instructions, and any

other permit conditions. Annual training is also required for those applying pesticides or herbicides.

(c) Solano County Airport Land Use Commission. The Solano County Airport Land Use Commission (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. The Solano County ALUC prepares the airport land use compatibility plan (ALUCP) for airports in the county, including the Rio Vista Airport.

(d) Solano County Office of Emergency Services. The Solano County Office of Emergency Services (Solano OES) oversees programs to protect lives and property of county residents from the effects of natural or human-caused disasters, including floods, earthquakes, major fires, storms, hazardous material incidents, and any other emergency-related function. The Solano OES coordinates emergency response; assists cities with fire suppression, evacuations, hazardous materials incidents, disaster exercises, and planning; prepares the Operational Area Emergency Plan; and conducts emergency preparedness training and awareness.

15.2.4 City of Rio Vista

(a) Rio Vista General Plan. The following General Plan goal and policies are relevant to consideration of the hazards and hazardous materials impacts and the Project.

Policy 11.6C The City shall comply with the state law regarding the usage of toxic chemicals in parks.

Policy 11.6D The City shall ensure the proper use, storage, and disposal of toxic chemicals to the greatest extent feasible.

Policy 11.6E The City shall ensure that it maintains sufficient resources, contacts, and personnel to provide the public with emergency notification in the event of a hazardous materials spill or airborne release.

Policy 11.6F The City shall strive to achieve prompt emergency notification to the Rio Vista community in the event of a hazardous materials emergency.

(b) City of Rio Vista Hazardous Materials Oversight. The City's development review process includes the referral of any development proposal that may involve or may be affected by the storage, handling, or disposal of hazardous materials to the Fire Department, Police Department, Solano County Department of Resource Management and other agencies responsible for hazardous materials.

(c) Rio Vista Natural Gas Ordinance. The Rio Vista Gas Field is the largest gas field in California. Section 13.12 of the Rio Vista Municipal Code regulates natural gas operations in the city, including exploration, drilling, production, and transportation. The regulations are intended to promote the economic recovery of natural gas in a manner that is compatible with surrounding land uses and the protection of public health. Section 13.13.070 controls new and relocated natural gas pipelines.

(d) Rio Vista Comprehensive Emergency Management Plan. The City's Comprehensive Emergency Management Plan guides emergency response in Rio Vista, in coordination with Solano County's Standardized Emergency Management System (SEMS) Operations Area

Response. The plan is updated every two years. The plan defines the primary and support roles of City agencies and departments in after-incident damage assessment and reporting. The plan addresses interagency coordination, emergency functions, evacuation procedures, continuity of government responsibility, and public awareness, as well as operation of police, fire and health services, and transportation alternatives, in the event of a multi-hazard emergency.

15.3 IMPACTS AND MITIGATION MEASURES

15.3.1 Significance Criteria

Based on the CEQA Guidelines¹, the Project would have a significant impact related to hazards and hazardous materials if it would:

- (a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- (b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- (c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- (d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment;
- (e) Impact implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- (f) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

15.3.2 Impacts and Mitigations

Hazardous Materials Transport, Use or Disposal Impacts. Redevelopment facilitated development within the proposed Project Area could involve the storage, use and disposal of potentially hazardous materials, including building maintenance supplies, paints and solvents, pesticides and herbicides for landscaping and pest control, vehicle and boat maintenance products, and the like. A potential research station use may involve less commonly used hazardous materials specific to their operations. A new fuel dock is not expected to be included as part of the development of a potential research station; the adjacent Delta Marina could provide fuel for research station boats.

The Project may facilitate the development of recreation uses adjacent to a research station use, with its transport, storage and use of hazardous materials, and the risk of a release of hazardous materials due to upset or accidents. The location of such uses adjacent to one

¹CEQA Guidelines, Appendix G, items VII(a-d, g, and h).

another is not uncommon in urban areas and, with routine regulatory controls and oversight, would not pose a significant risk to public health and safety.

In addition, the required Standard Urban Storm Water Mitigation Plan, which controls post-construction stormwater runoff through source control and treatment control best management practices (BMPs), includes BMPs to minimize the possible release of hazardous materials into the environment.

With existing General Plan policies and federal, State and local regulation and oversight of hazardous materials, the potential threat to public health and safety or the environment from hazardous materials transport, use or disposal would be a ***less-than-significant impact***.

Mitigation. No significant impact has been identified; no mitigation is required.

Risk of Upset or Accidents. Development facilitated by the proposed Redevelopment Plan may involve the transport, storage, use or disposal of hazardous materials. With existing General Plan policies and federal, State and local regulation and oversight of hazardous materials, the risk to the public or the environment from upset and accident conditions involving the release of hazardous materials would be a ***less-than-significant impact***.

Mitigation. No significant impact has been identified; no mitigation is required.

Hazardous Materials Near Schools. Riverview Middle School is located at 525 South 2nd Street, within one-quarter mile of the proposed Project Area. Development facilitated by the proposed Redevelopment Plan could involve the transport, storage and use of hazardous materials within one-quarter mile of this school. With existing General Plan policies and federal, State and local regulation and oversight of hazardous materials, the potential threat to Riverview Middle School from hazardous materials transport, use or disposal or from the risk of upset and accident conditions involving the release of hazardous materials would be a ***less-than-significant impact***.

Mitigation. No significant impact has been identified; no mitigation is required.

Natural Gas Transmission Line Hazards. A regional high pressure natural gas transmission pipeline belonging to Pacific Gas & Electric Company, is located within an easement on the northern portion of the property. This area would be limited to parking, open storage, open recreation and similar uses without occupied structures. The occupants of development facilitated by the proposed Redevelopment Plan could be subject to the risk of injury or death from accidental releases from this gas pipeline, which could cause a leak fire, rupture fire or leak explosion. Gas pipelines are subject to regulations within Title 49, Part 192 of the CFR (49 CFR 192), Transportation of Natural and Other Gas by Pipeline, which covers construction materials, design, construction requirements, corrosion control, testing requirements, pipeline operations, and maintenance. Given these federal regulations and the regulatory oversight of the DOT OPS, the potential impact related to accidental releases from the natural gas transmission pipeline within the proposed Project Area would be ***less-than-significant***.

Mitigation. No significant impact has been identified; no mitigation is required.

Exposure to Residual Soil and Groundwater Contamination. Hazardous substances and petroleum products were stored, used and released into the environment within the proposed Project Area during its previous use by the Army. Various investigations were conducted by the Army of soil, groundwater and river sediments on and adjacent to the proposed Project Area to determine the nature and extent of contamination and necessary removal actions. The investigations revealed soil contamination exceeding regulatory standards in several areas. The investigations also revealed no significant impacts to groundwater or river surface water quality. The contaminated soils were removed and properly disposed off-site.

As explained more fully in 15.1.1(a) above, a risk assessment was performed to evaluate the potential risks to human health and the environment from residual concentrations of contaminants remaining after contaminated soils were removed. A residential exposure scenario was used as a conservative approach to evaluating human health risks, since residential receptors would be expected to have the highest potential exposure to residual contamination. The results of the risk assessment indicated that the residual contaminants remaining in the soil do not pose a significant human health or ecological risk. Therefore, the potential impact from exposure to residual soil and groundwater contamination remaining from the former military use would be ***less than significant***.

Mitigation. No significant impact has been identified; no mitigation is required.

Asbestos and Lead-Based Paint Exposure. The existing buildings remaining on the site from the former military use contain asbestos siding and other asbestos-containing building materials, and, given the period when they were constructed, are likely to contain lead-based paint. The substantial added cost of properly removing and disposing these hazardous materials could continue to deter private sector investment. A basic objective of the Project is to clean up remaining asbestos and lead-based paint contamination within the proposed Project Area. The Project would enable the City to remediate these blighting conditions or to assist with the cost of remediation, and thereby attract private investment. Asbestos or lead-based paint present within these structures could be released into the environment during demolition or construction activities, which could result in soil contamination or pose a health risk to construction workers or future occupants if not managed in accordance with existing laws and regulations.

Demolition or rehabilitation activities within the proposed Project Area would be required to first comply with regulations pertaining to the removal and proper disposal of asbestos and lead-based paint. A CalOSHA certified asbestos and lead-based paint contractor would prepare a site-specific asbestos and lead hazard control plan with recommendations for the containment of asbestos or lead-based paint materials during demolition activities, for appropriate disposal methods and locations, and for protective clothing and gear for abatement personnel. Given the common occurrence of asbestos and lead-based paint contamination, the proven and routine methods of abatement, and applicable laws, regulations, standards and oversight, the potential impact related to asbestos and lead-based paint exposure would be ***less than significant***.

Mitigation. No significant impact has been identified; no mitigation is required.

Hazardous Materials Use and Contamination in the Vicinity. The only hazardous materials release site mapped by the DTSC within ½-mile of the proposed Project Area is at the Delta

Marina property on the north side of the inlet to Marina Creek, where three underground storage tanks were removed and groundwater monitoring is ongoing, under the oversight of the DTSC and the Solano County Department of Resource Management. The proposed Project Area is not down-gradient from this site. There are no Hazardous Waste and Substances Sites (Cortese) List sites within Rio Vista. The potential impact to the proposed Project Area from known hazardous materials release sites in the vicinity would be ***less than significant***.

Mitigation. No significant impact has been identified; no mitigation is required.

Agricultural Chemicals Exposure Hazards. The use of agricultural chemicals on the adjacent agricultural land to the west could potentially be injurious to users of the proposed park and recreation facilities and other future occupants of the proposed Project Area. However, State laws and regulations regarding setbacks and the Solano County Department of Agriculture permitting process and on-site inspections would ensure the use of only approved chemicals in the specified manner and that sensitive receptors would be avoided. Therefore, the potential impact of the Project related to agricultural chemicals exposure hazards would be ***less than significant***.

Airport Safety Hazards. The Rio Vista Airport, the nearest public use airport, is located more than two miles northeast of the proposed Project Area. There are no private airstrips in the vicinity. Given the distance from the nearest public use airport, there would be no safety hazard for people working in or using the proposed Project Area. Thus, there would be ***no impact*** related to airport safety hazards.

Mitigation. No significant impact has been identified; no mitigation is required.

Impact 15-1: Emergency Response Impacts. Beach Drive and 2nd Street provide the only direct access between the proposed Project Area and central Rio Vista. The Rio Vista Fire Department (RVFD) fire station is located at 350 Main Street in downtown Rio Vista. The response time goal for RVFD is four minutes.¹ The Rio Vista Police Department (RVPD) operates out of 50 Poppy House Road in the downtown. RVPD has a response time goal of three minutes or less for 911 emergency calls and 10 minutes or less for non-emergency calls. Second Street is subject to occasional flooding where it crosses Marina Creek just north of Beach Drive. If flood waters are deep enough and not passable, emergency vehicles would need to travel an indirect route via Highway 12, Amerada Road, Emigh Road, and Montezuma Road, which would substantially increase emergency response times to and from the proposed Project Area. Development facilitated by the proposed Redevelopment Plan would therefore place additional people and property at risk due to longer response times associated with occasional flooding of 2nd Street at the Marina Creek crossing. The contribution of the Project to this existing emergency response condition would be cumulatively considerable and thus a **potentially significant impact** (see criterion [e] under subsection 15.3, "Significance Criteria," above).

Mitigation 15-1. The Project shall fund its fair share contribution of improvements to 2nd Street at the Marina Creek crossing to provide uninterrupted access by emergency vehicles during flooding conditions and thus maintain adequate emergency response times to the proposed Project Area. This mitigation measure would reduce this impact to a less than significant level; however, no such improvements are currently planned, and the timing of improvements is uncertain. Thus, this impact would remain **significant and unavoidable**.

Wildland Fire Impacts. Given that the proposed Project Area and adjacent areas are not within a Fire Hazard Severity Zone mapped by the California Department of Forestry and Fire Protection (CAL FIRE) Fire and Resource Assessment Program (FRAP),² as well as building code requirements, Rio Vista Fire Department review of development proposals, the terrain, the character of the vegetation, and the availability of fire suppression services, the potential impact related to wildland fire would be **less than significant**.

Mitigation. No significant impact has been identified; no mitigation is required.

¹City of Rio Vista, Del Rio Hills Planned Unit Development Draft Environmental Impact Report, December 2008, p. 13-3.

²California Department of Forestry and Fire Protection, Solano County Draft Fire Hazard Severity Zones in LRA, October 2007, http://frap.cdf.ca.gov/webdata/maps/solano/fhszl06_1_map.48.jpg, viewed February 3, 2010.

Cumulative Hazardous Materials Impacts. Development facilitated by the proposed Redevelopment Plan, together with other reasonably foreseeable development in the city, would result in an estimated total of approximately 6,726 new housing units and approximately 1.1 million square feet of new non-residential development. This cumulative development would involve the storage, use and disposal of potentially hazardous materials, such as common household cleaners, paints and solvents, pesticides and herbicides for landscaping and pest control, automobile maintenance products, and the like. These materials would not be of a type or in sufficient quantities to pose a significant hazard to public health and safety or the environment. Construction activities could potentially reveal as-yet undiscovered contamination or could potentially occur on properties with known contamination that could pose a potential threat to public health and safety or the environment. However, as with the proposed Redevelopment Plan, with applicable federal and State laws, regulations, standards and oversight, and local policies and programs, the cumulative impact to the public or the environment from hazardous materials would be ***less-than-significant***.

Mitigation. No significant cumulative impact has been identified; no mitigation is required.

16. GEOLOGY AND SOILS

This section describes the regulatory framework and existing conditions related to geology, seismicity, soils and mineral resources in and around the proposed Project Area, and the potential seismic, soils and mineral resources impacts of the Project.

16.1 SETTING

16.1.1 Topography

The proposed Project Area is located on the west bank of the Sacramento River at the edge of the Montezuma Hills and the Sacramento-San Joaquin Delta. The Montezuma Hills border the site on the west. The Rio Vista Fault fault scarp extends along this site boundary approximately 2.5 miles parallel to the Sacramento River. The estimated height of the scarp was 100 feet before the placement of dredge fill in the area.¹

The property is composed of two flat terraces separated by a small slope: a lower terrace lying a few feet above the level of the river at an average elevation of approximately 18 feet above mean sea level (msl) and an upper terrace, which is an average of 33 feet above msl. The property is underlain by dredge spoils from the Sacramento River, composed primarily of fine sands and silty sands uniformly across the site. A levee crossed the property before the placement of dredged material. In 1923, the levee was approximately 50 to 100 feet to the west of Building T-7.²

16.1.2 Geology³

The dominant geologic feature relevant to the proposed Project Area is the Great Valley (Central Valley), a northwest to southeast trending depression formed by a fold in the earth's crust containing up to 10 miles of sediment. It extends from near Red Bluff in the north to Bakersfield in the south. The Central Valley is interrupted by two east-west trending ridges formed by a fold in the earth's crust, the Stockton Arch and the Bakersfield Arch, associated with the Stockton and White Wolf faults, respectively. The Sacramento Valley sedimentary basin is to the north of the Stockton Arch.

The proposed Project Area, located on the eastern flank of the Montezuma Hills and the west bank of the Sacramento River, is on the west side of the Central Valley. Sediments in the

¹U.S. Army Corps of Engineers, Environmental Baseline Survey U.S. Army Reserve Center Rio Vista, California, April 2002.

²U.S. Army Corps of Engineers Sacramento District, Environmental Assessment for the Disposal and Reuse of the Rio Vista Army Reserve Center, October 2000, page 4-7.

³U.S. Army Corps of Engineers Sacramento District 2000, page 4-6.

Sacramento River Valley area range in age from Jurassic to Holocene and are of both continental and marine origin. Pre-Tertiary marine rocks crop out in the western portion of the Central Valley, and post-Eocene continental rocks and deposits also are found in this area and throughout the Central Valley.

The proposed Project Area is underlain by Quaternary deposits and rocks. Deposits on the eastern side of the property along the Sacramento River consist of intertidal deposits of soft mud and peat, associated with the river. The western portion of the property is underlain by the Montezuma Formation, a poorly stratified, slightly consolidated clayey sand. These deposits extend to a depth of approximately 2,000 feet to pre-Tertiary to Eocene continental and marine rocks and deposits.

The proposed Project Area is underlain by the Montezuma Formation, which consists of poorly consolidated deposits of gravels, sands, and clays. The formation was formerly a larger alluvial terrace deposit that has been eroded away by the Sacramento and San Joaquin rivers. The Montezuma Formation rests atop the older Tehama formation. The Tehama formation consists of poorly consolidated sandstone, gravels, and silty, expansive clays up to 1,000 feet thick.

16.1.3 Seismicity¹

(a) Earthquake Faults. The Rio Vista Fault is immediately west of the proposed Project Area where the Montezuma Hills begin. The fault extends for 2.5 miles from the property toward the south. The Rio Vista fault is estimated to be a potentially active fault², which has displayed no movement over the last 200 years, nor has there been any recent evidence of surface faulting or tectonic creep.³

Earthquake faults in the region are presented in Figure 16.1. The Green Valley Fault is the only fault in Solano County zoned as potentially and recently active. The Montezuma Hills Fault is a late Quaternary fault located to the west of the Montezuma Hills, and the Midland Fault Zone is a pre-Quaternary fault (older than 1.6 million years) located approximately four miles east of the proposed Project Area. Neither the Montezuma Hills Fault nor the Midland Fault Zone are identified as active or potentially active.

(b) Seismic Hazards. Potential earthquake hazards can include ground rupture, ground shaking, liquefaction and landslides.

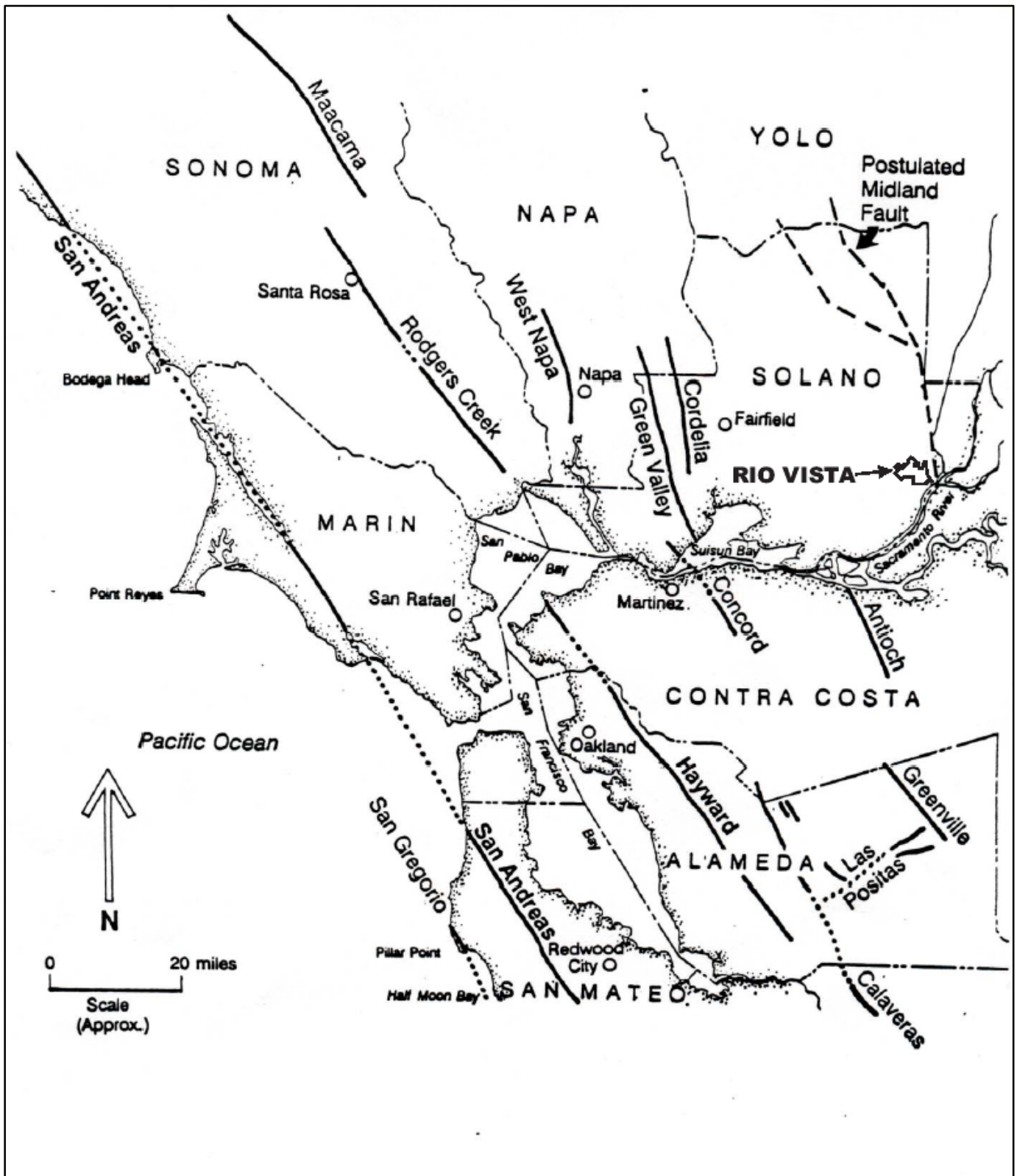
(1) Ground Rupture. Ground rupture is the actual breaking apart of the ground during an earthquake and generally occurs in the area directly above a fault. The Alquist-Priolo Earthquake Fault Zoning Act⁴ addresses the hazard of surface fault rupture by preventing the construction of buildings used for human occupancy over active faults. The Rio Vista Fault is not an active fault and is not within an Alquist-Priolo Earthquake Fault Zone. The Antioch Fault,

¹U.S. Army Corps of Engineers Sacramento District 2000, pages 4-6 and 4-7.

²An active fault is one that has experienced surface displacement within the last 11,000 years. A potentially active fault shows evidence of displacement within the last 1.6 million years.

³City of Rio Vista 2002, Rio Vista General Plan 2001, page 11-7.

⁴Originally entitled the Alquist-Priolo Special Studies Zones Act until its 1993 renaming.



SOURCE: Rio Vista General Plan 2001

Figure 16.1

EARTHQUAKE FAULTS MAP

approximately 12 miles southwest of Rio Vista, is the nearest Alquist-Priolo Earthquake Fault Zone. Since no known active faults pass through Rio Vista, the potential for ground rupture within the proposed Project Area is considered very low.

(2) *Ground Shaking.* Ground shaking is the most widespread cause of earthquake damage. Most loss of life and injuries during an earthquake are related to the collapse of buildings and structures, with older buildings constructed of unreinforced masonry being among the most vulnerable. The intensity of the ground shaking at a particular site depends on characteristics of the earthquake source (magnitude, location and area of causative fault surface), distance from the fault, and amplification effects of local geologic deposits. The proposed Project Area is within an area of moderate groundshaking intensity, as mapped by the Association of Bay Area Governments.¹

(3) *Soil Liquefaction.* Soil liquefaction is a process that occurs in water-saturated, unconsolidated sediment due to ground shaking. During liquefaction, soils lose strength and ground failure may occur, affecting structures. Soils most susceptible to liquefaction are loose to medium dense, saturated granular soils with poor drainage. The fine sands and silty sands underlying the site, and the presence of the river and shallow groundwater, make the proposed Project Area subject to liquefaction during an earthquake. The proposed Project Area is within an area of very high liquefaction susceptibility, based on soil characteristics and the likely severity of groundshaking during an earthquake, as mapped by the Association of Bay Area Governments.²

(4) *Landslide Hazards.* The proposed Project Area is flat, and the hillside to the west is not near, high or steep enough to pose a landslide risk. The landslide risk for the site during an earthquake or weather-related event is low.

16.1.4 Soils

(a) Soil Types. The U.S. Department of Agriculture Soil Conservation Service (SCS), now known as Natural Resources Conservation Service (NRCS), mapped soils within Solano County in 1977. Soils in the vicinity of the proposed Project Area are in the Altamont-Diablo Association, which is characterized by gently sloping to steep, well-drained clays formed from weakly consolidated sediments on dissected terraces, at elevations of 25 to 500 feet and on slopes of two to 50 percent. About 40 percent of the association is made up of Altamont soils, 35 percent of Diablo soils, and the remaining 25 percent is Ayar, Pescadero, San Benito and San Ysidro soils.

The NRCS mapped two soil units within the proposed Project Area:

- *Tujungang Fine Sand.* Most of the property is on Tujungang fine sand. Tujungang series soils are nearly level, excessively drained soils in dredge spoil areas. Tujungang fine sand is made up

¹Association of Bay Area Governments, Geographic Information Systems, Hazards Maps, Earthquake Shaking Potential, viewed on February 7, 2010, <http://gis.abag.ca.gov/website/liq/viewer.htm>. The earthquake shaking potential hazard maps show composite shaking hazard based on all earthquake scenarios and probability information.

²Association of Bay Area Governments, Geographic Information Systems, Hazards Maps, Liquefaction Susceptibility, viewed on February 7, 2010, <http://gis.abag.ca.gov/website/liq/viewer.htm>. Liquefaction hazard maps show areas where the ground is susceptible to liquefaction and that are likely to be shaken hard enough in a particular earthquake to trigger liquefaction.

of mixed dredge alluvium, in which the rate of runoff is slow and the erosion hazard is slight to moderate.

- *Diablo-Ayar Clay 2 to 9 Percent Slopes.* The western edge of the property is on Diablo-Ayar Clay 2 to 9 Percent Slopes. Diablo series soils are well-drained soils on dissected terraces, with a dark gray to dark grayish brown surface layer underlain by grayish brown silty loam. These soils typically are used for dryfarmed small grain, pasture, wildlife habitat, and recreation. Diablo clay, which makes up approximately 60 percent of the Diablo-Ayar complex, is found on hillsides, and Ayar clay, which makes up about 40 percent of the complex, is found on hilltops. The rate of runoff is medium and erosion hazard is moderate.

(b) Soil Constraints. Soil characteristics affect suitability for buildings, structures, infrastructure, paving and landscaping. Soil-related limitations can include expansive soils, erosion, liquefaction, subsidence, lurch and lateral spreading.

(1) *Expansive Soils.* Expansive soils are composed largely of clays, and can undergo significant volume change with changes in moisture content. They shrink and harden when dried, and expand and soften when wetted. If not properly engineered, this expansive nature can damage building foundations and other construction, such as sidewalks and concrete flatwork. The clayey soils underlying the site have a moderate to high expansion potential. Soils with high shrink-swell potential are also highly corrosive to steel and concrete and can damage utilities, paving and structural supports.

(2) *Erosion.* Soil erosion is the process by which soil particles are removed from a land surface by wind, water, or gravity. Most natural erosion occurs at slow rates; however, excavation or grading may increase the rate of erosion during construction activities, even where buildings and pavement previously existed at the construction site, because bare soils are exposed and could be eroded by wind or water. The Tujunga soil series underlies the majority of the site, and has a slight to moderate erosion hazard. The Diablo-Ayar Clays, 2 to 9 percent slopes soil unit underlies the northern portion of the site, and has a moderate erosion hazard.

(3) *Liquefaction.* Liquefaction is a phenomenon in which saturated cohesionless soils are subject to a temporary but essentially total loss of shear strength because of pore pressure build-up under the reversing cyclic shear stresses associated with earthquakes. For liquefaction to occur, saturated sandy soils must be present and significant ground shaking must occur. As previously noted, the proposed Project Area is within an area of very high liquefaction susceptibility.

(4) *Subsidence.* Subsidence is a gradual settling or sinking of the earth's surface with little or no horizontal motion caused by the compaction or loss of unconsolidated soils by earthquake shaking; compaction by heavy structures; the erosion or oxidation of peat (organic) soils; or the extraction of groundwater, gas, oil, or geothermal energy resources. Subsidence is most likely to be a problem in areas underlain by soft, compressible, clay-bearing soils that exhibit the potential to subside because of their high shrink-swell potential and low strength.

(5) *Lateral Spreading.* Lateral spreading of soil typically occurs as a form of horizontal displacement of relatively flat-lying alluvial soil material toward an open or "free" face, such as an open body of water, channel or excavation. The river bank along the eastern boundary of the proposed Project Area is subject to lateral spreading.

(6) *Septic Systems*. The City requires new development to connect to the municipal wastewater treatment system. Therefore, the capacity of local soils to effectively accommodate septic systems is not an issue.

16.1.5 Groundwater

Groundwater is present near the river elevation in the dredge fill and is at a higher elevation to the west. During hazardous materials investigations of the property in May 2000, groundwater was encountered at depths between 15 and 21 feet below ground surface on the upper terrace and between seven and 11 feet below ground on the lower terrace. Groundwater flow across the site is to the northwest at an average gradient of 0.011 foot per foot.

16.1.6 Mineral Resources

Mineral resources found within Solano County include mercury, sand and gravel, clay, stone products, calcium, and sulfur. Mineral Resource Zones within the county are located northeast of Vallejo, south and southeast of Green Valley, south and east of Travis Air Force Base, and within Vacaville and Fairfield. Rio Vista is not located within or near a Mineral Resources Zone.¹

Although this portion of the county does not contain designated Mineral Resource Zones, it does contain significant natural gas deposits, including the Rio Vista Gas Field, the largest natural gas field in California. Natural gas production is active throughout the Rio Vista and the surrounding area.

16.2 PERTINENT PLANS AND POLICIES

Important State laws that pertain to seismic hazards and hazardous soil conditions are outlined below, including the Alquist-Priolo Earthquake Fault Zoning Act, the Seismic Hazards Mapping Act and the California Building Code. The mineral resources provisions of the Surface Mining and Reclamation Act are also described.

(a) Alquist-Priolo Earthquake Fault Zoning Act. The Alquist-Priolo Earthquake Fault Zoning Act was passed in 1972 to mitigate the potential hazard of surface faults to structures for human occupancy. The main purpose of the Act is to prevent the construction of buildings used for human occupancy over active faults. The Act only addresses the hazard of surface fault rupture and is not directed toward other earthquake hazards.

The Act requires the State Geologist to establish regulatory zones (known as Earthquake Fault Zones or Alquist-Priolo Zones) around the surface traces of active faults and to issue maps to all affected Cities, Counties and State agencies for their use in planning and controlling development. Local agencies must regulate most development projects within the zones and there can generally be no construction within 50 feet of an active fault zone.²

¹City of Rio Vista, Del Rio Hills Planned Unit Development Draft Environmental Impact Report, December 2008, p. 4.5-6.

²California Geological Survey, Alquist-Priolo Earthquake Fault Zones, <http://www.consrv.ca.gov/CGS/rghm/ap/>, retrieved August 31, 2006.

(b) Seismic Hazards Mapping Act. The Seismic Hazards Mapping Act addresses earthquake hazards other than fault rupture, including liquefaction and seismically-induced landslides. Seismic hazard zones are mapped by the State Geologist to assist local governments in land use planning. The Act states that “It is necessary to identify and map seismic hazard zones in order for cities and counties to adequately prepare the safety element of their general plans and to encourage land use management policies and regulations to reduce and mitigate those hazards to protect public health and safety.”

(c) California Building Code. Development in Rio Vista is subject to the California Building Code (CBC), which provides a minimum standard for building design and construction. Codified in Title 24 of the California Code of Regulations, the CBC incorporates the Uniform Building Code, a widely adopted model building code in the United States. The CBC contains specific requirements for seismic safety, excavation, foundations, retaining walls and site demolition. It also regulates grading activities, including drainage and erosion control.

(d) Surface Mining and Reclamation Act. The California Surface Mining and Reclamation Act of 1975 (SMARA) was enacted in response to land use conflicts between urban growth and essential mineral production. SMARA requires the State Geologist to classify land according to the presence or absence of significant mineral deposits. SMARA provides for the evaluation of an area’s mineral resources using a system of Mineral Resource Zone (MRZ) classifications that reflect the known or inferred presence and significance of a given mineral resource. Local governments must consider this information before land with important mineral deposits is committed to land uses incompatible with mining.

(e) Rio Vista General Plan. The Resource Conservation and Management, and Safety and Noise Elements of the General Plan contain the following relevant goals, policies and actions.

GOAL 10.7 TO PROTECT AND PRESERVE SOILS AS A NATURAL RESOURCE.

Policy 10.7.A The City shall minimize soil erosion and sedimentation by maintaining compatible land uses, suitable building designs, and appropriate construction techniques.

*GOAL 10.11 TO PROTECT THE VISUAL AND SCENIC RESOURCES OF RIO VISTA—
RECOGNIZING THEIR IMPORTANCE IN THE QUALITY OF LIFE FOR CITY RESIDENTS
AND IN PROMOTING RECREATION AND TOURISM.*

Policy 10.11.F The City shall require new development to incorporate sound soil conservation practices and minimize land alterations. Land alterations shall comply with the following guidelines....

- *Minimize cuts and fills.*
- *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.*

GOAL 11.1 TO MINIMIZE INJURY AND PROPERTY DAMAGE DUE TO SEISMIC ACTIVITY AND GEOLOGIC HAZARDS.

Policy 11.1.B 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 materials storage facilities, bridges, and large public assembly halls.

Policy 11.1.E The City shall require contour grading, where feasible, and revegetation to mitigate the appearance of engineered slopes and to control erosion.

*Action RCM-4 Natural and Cultural resources Inventory
Action RCM-6 Sensitive Local Resource Areas Map
Action RCM-7 Environmental/Visual Constraints Map
Action RCM-8 Development Review
Action RCM-9 Best Management Practices
Action RCM-19 Grading and Erosion Control Ordinance
Action SN-3 Uniform Building Code
Action SN-6 Grading and Drainage Ordinance*

16.3 IMPACTS AND MITIGATIONS

16.3.1 Significance Criteria

Based on the CEQA Guidelines, the Project would have a significant impact related to geology and soils if it would:

- (a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
 - (1) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault (refer to Division of Mines and Geology Special Publication 42);
 - (2) Strong seismic ground shaking;
 - (3) Seismic-related ground failure, including liquefaction; or
 - (4) Landslides;
- (b) Result in substantial soil erosion or the loss of topsoil;

- (c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse;
- (d) Be located on expansive soil as defined in Table 18-1-B of the International (formerly Uniform) Building Code, creating substantial risks to life or property;
- (e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater;
- (f) 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
- (g) 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.

16.3.2 Impacts and Mitigations

Seismic Hazards Impacts. New development and its occupants within the proposed Project Area could be exposed to seismic hazards, including risk of loss, injury or death. The potential for ground rupture, earthquake-induced landslides or mudslides, and seiche within the proposed Project Area are considered low. However, the proposed Project Area is subject to moderate ground shaking and has a very high susceptibility to liquefaction. However, potential risks to life and property from these seismic hazards would be adequately mitigated by existing laws, regulations and policies, including the CBC and the City's development review procedures. Therefore, the impact of the proposed Redevelopment Plan related to seismic hazards would be ***less-than-significant***.

Mitigation. No significant impact has been identified; no mitigation is required.

Soil-Related Hazards Impacts. Soils in the proposed Project Area have a low potential for landslide or lateral spreading. Soils in the eastern portion of the proposed Project Area have a high liquefaction susceptibility and moderate erosion and shrink-swell potential. These soil conditions could create risks to life or property. However, review and permitting of specific development projects, including environmental review in accordance with CEQA, would involve characterization and consideration of site-specific geologic and soils conditions, and implementation of individual project mitigations, where needed. State and local planning, building and engineering regulations address structures, excavation, foundations, retaining walls and grading activities. With these existing State and local laws, regulations, standards and practices, the potential impact to life and property from local soil conditions within the proposed Project Area would be a ***less-than-significant***.

Mitigation. No significant impact has been identified; no mitigation is required.

Septic System Suitability Impacts. Since the City requires all new development to connect to the municipal wastewater system, there would be ***no impact*** associated with the capacity of local soils to support septic systems.

Mitigation. No significant impact has been identified; no mitigation is required.

Mineral Resources Impacts. The proposed Project Area is not within or near a designated Mineral Resource Zone and does not contain mineral resources of significant value. Although the proposed Redevelopment Plan would not preclude future use of the site for natural gas extraction, natural gas extraction is not among the uses allowed under the conditions of conveyance of the property from the Army to the City. The proposed Redevelopment Plan would have **no impact** on mineral resources.

Mitigation. No significant impact has been identified; no mitigation is required.

Cumulative Seismic and Soils-Related Hazards Impacts. Development in Rio Vista, Solano County and the San Francisco Bay Area region will continue to expose people and property to seismic hazards and adverse soil conditions. The policies contained in the Rio Vista General Plan, along with compliance with federal, State and local regulations addressing building construction, would reduce the project-level impacts associated with geology and soils to a less-than-significant level. Other development projects in Rio Vista and in other communities would also be subject to County and State laws and regulations, local general plan policies and planning, building and engineering regulations. Review and permitting of specific development projects, including environmental review in accordance with CEQA, would be expected to involve characterization and consideration of site-specific geologic and soils conditions, and implementation of individual project mitigations where needed. As a result, cumulative impacts related to seismic and soils hazards would be **less-than-significant**.

Mitigation. No significant impact has been identified; no mitigation is required.

17. CEQA-REQUIRED ASSESSMENT CONSIDERATIONS

This chapter summarizes the EIR findings in terms of the assessment categories required by Section 21100 of the California Environmental Quality Act (CEQA). The findings of this EIR are summarized below in terms of Redevelopment Plan-related "growth inducement," "unavoidable significant adverse impacts," "irreversible environmental changes," "cumulative impacts," and "effects found not to be significant."

17.1 GROWTH-INDUCING IMPACTS

Section 21100(b)(5) of CEQA requires that an EIR include information regarding the growth-inducing impacts of the proposed project. CEQA Guidelines section 15126.2(d) states that an EIR shall: "*Discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing either directly or indirectly, in the surrounding environment...It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.*" The proposed Redevelopment Plan would foster economic growth, result in population growth, and indirectly result in the construction of additional housing within Rio Vista and Solano County.

(a) Removal of Obstacles of Growth. The Project would provide tax increment funding for activities such as site preparation, asbestos and lead-based paint clean-up, infrastructure improvements and economic development assistance, which would eliminate blight and encourage development and rehabilitation consistent with the City's General Plan and zoning. The basic objectives of the Project are to remove existing impediments to growth within the proposed Project Area; to stimulate investment, development and job creation within the proposed Project Area and indirectly throughout the city; and to increase the supply of low and moderate income housing throughout the city.

The type, intensity and character of anticipated new uses and development facilitated by the Project within the proposed Project Area would be in accordance with the land use designations and policies of the Rio Vista General Plan 2001, as well as the zoning designations and standards, and other City policies, codes and standards that implement the General Plan. This EIR assumes that the proposed Redevelopment Plan would facilitate the development of a total of 244,500 square feet within the proposed Project Area, comprising the following uses, for a floor area ratio (FAR) of 0.2:

- 110,000 square foot research station
- 150-room lodge with meeting and retail space (104,000 square feet)
- 9,000 square foot restaurant
- 21,000 square foot multi-purpose community center
- 12.3 acres of recreation space

These uses and this amount of development is consistent with the General Plan, which limits development intensity on any individual parcel within the proposed Project Area to a 0.5 FAR and within the overall proposed Project Area to a 0.2 FAR.

(b) Increased Economic Activity. The 2001 Base Reuse Plan Supplemental Economic Analysis¹ estimated the jobs, city revenue and economic multiplier effects of a proposed research station, lodge and restaurant within the proposed Project Area, which are presented in Table 17.1. These employment and economic benefits are in 2001 dollars and are based on a less intensive development scenario than the development assumptions used in this EIR, which include a 34 percent larger research station and twice the number of lodge rooms. As shown in Table 17.1, the 2001 Supplemental Analysis estimated that a research station, lodge and restaurant within the proposed Project Area would generate approximately 230 direct jobs, \$2.2 million in annual payroll and \$281,000 in annual revenue to the City.

Redevelopment Plan-facilitated growth within the proposed Project Area would induce additional growth within Rio Vista and Solano County through an economic “multiplier effect”. A multiplier effect describes the indirect and induced employment and income generated by a project. For every new job, other jobs are created in the local economy to support that job. Higher paying more professional jobs tend to create more additional jobs in the local economy. An estimated 75 percent of research station employees would be expected to relocate to Rio Vista within 10 to 15 years. Additionally, the new uses developed within the proposed Project Area would buy goods and services locally. This economic multiplier effect would generate an additional 262 indirect jobs throughout Solano County and an additional \$11.9 million in personal income in the Solano County economy. A portion of this indirect economic activity would occur in Rio Vista.²

Additional direct and indirect increases in employment and income would be generated by affordable housing programs outside the proposed Project Area funded by the Project.

These new residents and this new economic activity may increase traffic, air quality and noise and generate demand for housing, public services and utilities, the expansion or new construction of which could cause environmental impacts. The location, nature, extent and severity of any potential environmental impacts is too speculative to predict or evaluate.

(c) Increased Development Potential on Adjacent Land. The proposed Project Area is located at the southern edge of the city limits. Lands to the west that are currently in agricultural use are located within unincorporated Solano County territory and within the City’s Sphere of Influence. Properties to the south along Beach Drive include the U.S. Coast Guard Station, the Beach Drive Wastewater Treatment Plant and Sandy Beach Regional Park. No change in use is anticipated for the federal U.S. Coast Guard Station property or the Regional park. The wastewater treatment plant is expected to be decommissioned in 2010 and would thereafter be available for new uses.

¹Brion & Associates, Rio Vista Army Reserve Center Reuse Plan Supplemental Economic Analysis, July 2001.

²Brion & Associates 2001.

Table 17.1
2001 BASE REUSE PLAN JOBS, CITY REVENUE AND ECONOMIC MULTIPLIER EFFECTS

	<u>Research Station (87,000 sq. ft.)</u>	<u>Lodge/Restaurant (75 rooms/12,000 sq.ft.)</u>	<u>Total</u>
<i>Direct Economic Activity</i>			
Direct Jobs	197	33	230
Average Annual Salary	\$48,000	\$23,000	--
Annual Payroll	\$7.4 million	\$775,000	\$2.2 million
City Revenue	\$93,000 ¹	\$188,000	\$281,000
<i>Indirect Economic Activity (multiplier effect)</i>			
Indirect Jobs	262	33	295
Indirect Personal Income	\$11.9 million	\$1.1 million	\$13 million

SOURCE: Brion & Associates, Rio Vista Army Reserve Center Reuse Plan Supplemental Economic Analysis, July 2001, and Wagstaff/MIG.

¹ Includes \$35,000 in sales tax from new residents, assuming 75 percent of research station employees would relocate to Rio Vista within 10 to 15 years.

Redevelopment Plan activities would include providing roads, water, sewer and storm drainage facilities, which are currently lacking within the proposed Project Area. Off-site road and infrastructure improvements may be designed to accommodate growth outside the proposed Project Area. Also, redevelopment-facilitated growth within the proposed Project Area may increase the development potential of adjacent land.

Lands within unincorporated Solano County territory to the west are planned to remain in agricultural use through 2025 under existing County and City policies. The Solano County General Plan designation for these properties is UPA Urban Project Area, reflecting a city-designated plan for the area. The Solano County General Plan also identifies these lands as agricultural areas within a Municipal Service Area (MSA), i.e., an area within a city sphere of influence. Unincorporated lands within MSAs that are designated Agriculture are planned to continue in agricultural use until annexed to a city for urban development.¹ Although no land use designation is identified for these parcels in the City's General Plan, Land Use Element Policy 4.2.F establishes that these lands shall remain in non-urban, predominantly agricultural and open space uses through the 2025 time frame of the General Plan.

The Beach Drive Wastewater Treatment Plant property is outside the city limits but within the Sphere of Influence. No land use designation is identified for this parcel in the City's General Plan and no specific future uses are currently contemplated. The Solano County General Plan designation for this property is.

(d) Affordable Housing Programs. As required by Section 33334.2 of the California Community Redevelopment Law (CRL), 20 percent of the proposed Project Area tax increment revenue is deposited into a housing fund for the purposes of increasing, improving and preserving the community's supply of low and moderate income housing, both inside and

¹Solano County General Plan Land Use Element Figure LU-4 Municipal Service Areas and Figure LU-5 Interim Agricultural Areas within Unincorporated MSAs.

outside the city's redevelopment areas. This Housing Set-Aside Fund may be used to develop new affordable housing. These potential new affordable housing projects would be expected to be consistent with adopted plans and zoning, and would require their own environmental review in accordance with CEQA.

(e) Growth Inducement Conclusions. In summary, redevelopment activities and development within the proposed Project Area under the proposed Redevelopment Plan may induce growth outside the proposed Project Area due to the removal of obstacles to growth, increased economic activity, increased development potential on adjacent land, and affordable housing programs. The location, nature, extent and severity of any potential environmental impacts is too speculative to predict or evaluate. This growth would generally be already contemplated in and consistent with existing adopted plans and the environmental documents prepared for those plans, and would be addressed by existing policies and codes, public services and utilities plans and funding programs. Projects would be subject to their own environmental review to evaluate their specific characteristics and changes in the environmental setting over time.

17.2 UNAVOIDABLE SIGNIFICANT ADVERSE IMPACTS

CEQA Guidelines section 15126.2(b) requires that the EIR discuss "significant environmental effects which cannot be avoided if the proposed project is implemented." Unavoidable significant impacts are those that could not be reduced to less-than-significant levels by mitigation measures, as part of the project, or other mitigation measures that could be implemented. The Project would result in the following unavoidable significant impacts:

IMPACT 6-2: *Loss of Historic Resources.* The Project could damage, alter, obscure or eliminate character-defining elements of the proposed U.S. Engineer Storehouse Historic District so as to cause a loss of integrity and loss of continued eligibility to the California Register of Historic Resources. Adhering to the Secretary of the Interior's Standards for the Rehabilitation of Historic Properties in all work within and adjacent to the proposed historic district would avoid this impact. The feasibility of this mitigation measure cannot be determined until the specific character-defining elements of the proposed historic district are determined. However, the cost, delay and limitations on development associated with this mitigation measure may make it ultimately infeasible. Thus, this impact may remain ***significant and unavoidable.***

IMPACT 8-1: *SR 12 – SR 84 to SR 160.* The addition of Project traffic to existing conditions would exacerbate existing LOS F conditions on the two-lane section of SR 12 between SR 84 and SR 160. Widening the section of SR 12 between SR 84 and SR 160 from one to two lanes in each direction would provide LOS A operations. The Project fair share would be 6 percent. However, this improvement is not funding-assured. Additionally, SR 12 is a Caltrans facility and so this improvement exceeds the City's authority to implement. Thus, this impact would remain ***significant and unavoidable.***

IMPACT 8-2: *Main Street – SR 12 to 5th Street.* The addition of Project traffic to existing conditions would change the LOS from LOS C to LOS E on the section of Main Street between SR 12 and 5th Street. Widening the section of Main Street between SR 12 and 5th Street to a two-lane arterial by adding a center two-way left-turn lane would provide LOS A operations. The Project fair share would be 13 percent. However, this improvement would require the acquisition of right-of-way from fronting properties and is considered infeasible. Thus, this impact would remain ***significant and unavoidable.***

IMPACT 8-3: SR 12/Front Street Intersection. The addition of Project traffic to existing conditions would change the LOS from LOS D to LOS F through the SR 12/Front Street intersection. Widening the section of SR 12 between SR 84 and SR 160 from one to two lanes in each direction would provide LOS B and C operations in the AM and PM peak hours, respectively. The Project fair share would be 8 percent. However, this improvement is not funding-assured. Additionally, SR 12 is a Caltrans facility and so this mitigation measure exceeds the City's authority to implement. Thus, this impact would remain **significant and unavoidable**.

IMPACT 8-4: Transit System Operations. The addition of Project traffic to existing conditions would increase congestion on SR 12 and thereby interfere with transit operations. Widening the section of SR 12 between SR 84 and SR 160 from one to two lanes in each direction would provide LOS A operations. The Project fair share would be 6 percent. However, this improvement is not funding-assured. Additionally, SR 12 is a Caltrans facility and so this improvement exceeds the City's authority to implement. Thus, this impact would remain **significant and unavoidable**.

IMPACT 8-5: SR 12 – SR 84 to SR 160. The addition of Project traffic to cumulative conditions in 2025 would exacerbate LOS F conditions on the two-lane section of SR 12 between SR 84 and SR 160. Widening the section of SR 12 between SR 84 and SR 160 from one to two lanes in each direction would provide LOS A operations. The Project fair share would be 2 percent. However, even with this improvement, SR 12 between SR 84 and SR 160 would continue to operate at LOS F. Additionally, this improvement is not funding-assured. Also, SR 12 is a Caltrans facility and so this improvement exceeds the City's authority to implement. Thus, this impact would remain **significant and unavoidable**.

IMPACT 8-6: Main Street – SR 12 to 5th Street. The addition of Project traffic to cumulative conditions in 2025 would exacerbate LOS F conditions on the section of Main Street between SR 12 and 5th Street. Widening the section of Main Street between SR 12 and 5th Street to a two-lane arterial by adding a center two-way left-turn lane would provide LOS B operations. The Project fair share is 8 percent. However, this improvement would require the acquisition of right-of-way from fronting properties and is considered infeasible. Thus, this impact would remain **significant and unavoidable**.

IMPACT 8-7: Main Street – 5th Street to 2nd Street. The addition of Project traffic to cumulative conditions in 2025 would change the LOS from LOS D to LOS E on the section of Main Street between 5th Street and 2nd Street. Widening the section of Main Street between 5th Street and 2nd Street to a two-lane arterial by adding a center two-way left-turn lane would provide LOS A operations. The Project fair share is 11 percent. However, this improvement would require the acquisition of right-of-way from fronting properties and is considered infeasible. Thus, this impact would remain **significant and unavoidable**.

IMPACT 8-12: Transit System Operations. The addition of Project traffic to cumulative conditions in 2025 would increase congestion on SR 12 and interfere with transit operations. Mitigation Measures 8-1, 8-8, 8-9, 8-10 and 8-11 would avoid this impact. However, the identified improvements are not funding-assured. Additionally, SR 12 is a Caltrans facility and so the improvements exceeds the City's authority to implement. Thus, this impact would remain **significant and unavoidable**.

Impact 10-4: Aquatic Invasive Species Impacts. Project-related activities occurring in the Sacramento River adjoining the proposed Project Area could increase the spread of aquatic invasive species (AIS). The effectiveness of best management practices in reducing the spread of AIS cannot be accurately determined at this time. Therefore, the Project contribution to this cumulative impact may remain considerable and thus **significant and unavoidable**.

Impact 12-2: Traffic Noise. Residences on Beach Drive and 2nd Street, and Riverview Middle School and the Rio Vista Branch Library, would be exposed to a substantial increase in traffic noise levels possibly exceeding City noise standards. Without the details of future projects to know the actual amount of reduction necessary and the number of affected properties, the feasibility of mitigation measures cannot be determined. Therefore, traffic noise impacts would remain **significant and unavoidable**.

Impact 13-2: CO Concentrations Impacts. Project traffic would cause or would exacerbate already unacceptable traffic congestion at four intersections on Highway 12, which could cause a violation of a State ambient air quality standard for CO. Identified traffic mitigation measures are either infeasible or these intersections would still continue to operate at an unacceptable LOS, and so the incremental contribution of Project traffic could still cause a violation of a State ambient air quality standard for CO. Therefore, this impact would remain **significant and unavoidable**.

Impact 14-2: Greenhouse Gas Emissions from Operations. The net increase in greenhouse gas (GHG) emissions from ongoing occupancy and operation of redevelopment-facilitated development would be a cumulatively considerable. The effectiveness of GHG emissions reduction measures cannot be determined. Therefore, the incremental contribution of the Project to global climate change would remain cumulatively considerable and thus **significant and unavoidable**.

17.3 IRREVERSIBLE ENVIRONMENTAL CHANGES

CEQA Guidelines section 15126.2(c) requires that an EIR also discuss "*significant irreversible environmental changes which would be caused by the proposed project should it be implemented.*"

The proposed Redevelopment Plan would commit future generations to an increase in development intensity and changes in land use and visual character within the proposed Project Area. Given the significant public and private investments in buildings and other improvements associated with these changes, and the anticipated lifetime of these improvements, these changes would not be likely to be reversed or significantly changed for many years to come.

The proposed Redevelopment Plan would also likely result in the unavoidable irreversible loss of significant historic resources.

Development under the proposed Redevelopment Plan would not be expected to involve significant quantities of hazardous materials, nor other potential for environmental accidents. While the Project would involve the use, transport, storage and disposal of hazardous materials, such activities would comply with existing federal, State and County regulations and standards, and the routine practices of regulatory and oversight agencies, which would reduce the likelihood and severity of environmental accidents which could result in irreversible environmental damage.

Redevelopment activities and development under the proposed Redevelopment Plan would irreversibly commit construction materials and non-renewable energy resources to the purposes of the projects. These energy resource demands would be used for demolition, construction, transportation of people and goods, heating, ventilation and air conditioning, lighting, and other associated energy needs. Because development facilitated by the Project would be required to comply with California Code of Regulations Title 24 energy regulations, the Project would not be expected to use energy in a wasteful, inefficient, or unnecessary manner.

Non-renewable and slowly renewable resources used by projects that implement the proposed Redevelopment Plan would include, but are not limited to, lumber and other forest products; sand and gravel; asphalt; petrochemical construction materials; steel; copper; lead and other metals; water; etc. Project impacts related to consumption of non-renewable and slowly renewable resources are considered to be less than significant because these projects would not use unusual amounts of energy or construction materials.

17.4 CUMULATIVE IMPACTS

The cumulative impact development assumptions used throughout this EIR are described in chapter 4, Land Use and Planning. Cumulative Impacts are evaluated for each environmental topic in chapters 4 through 16 of this EIR. The Project would result in a cumulatively considerable contribution and thus a significant impact related to the following:

- Historic resources
- Traffic
- Biological resources
- Air quality
- Climate change

17.5 EFFECTS FOUND NOT TO BE SIGNIFICANT

CEQA allows environmental issues for which there is no likelihood of an impact to be “scoped out” during an EIR scoping process and not covered in the EIR. No topics were “scoped out”; all environmental topics suggested by Appendix G of the CEQA Guidelines or raised by responsible agencies or trustee agencies, or interested members of the public during the EIR scoping process were addressed in this EIR.

18. ALTERNATIVES TO THE PROPOSED PROJECT

Section 15126.6 of the CEQA Guidelines requires an EIR to "...describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives....The 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 those alternatives would impede to some degree the attainment of the project objectives, or would be more costly."

Pursuant to Section 15126.6, this chapter describes five alternatives to the proposed Redevelopment Plan and compares the impacts of the alternatives to those of the Plan. The comparative ability of the alternatives to meet the basic project objectives is also described. The environmentally superior alternative among the five is also identified, as well as the reasons none of the five alternatives were chosen over the proposed Redevelopment Plan.

Several significant impacts of the proposed Redevelopment Plan were identified in Chapters 4 through 16 herein, including impacts related to Land Use and Planning, Population, Housing and Employment, Cultural Resources, Aesthetics, Transportation, Public Services and Utilities, Biological Resources, Hydrology, Noise, Air Quality, Climate Change, Hazards and Hazardous Materials, and Geology and Soils. The alternatives were developed with the purpose of avoiding or substantially reducing these identified Project impacts.

In accordance with Section 15126.6(a) of the CEQA Guidelines, this EIR does not evaluate every conceivable alternative. Only a feasible range of alternatives that would allow decision-makers to make a reasoned choice, and only alternatives that meet most of the basic objectives of the proposed Redevelopment Plan, as identified in Chapter 3, Project Description, have been evaluated. Alternative Project Area locations or boundaries were not evaluated because they would not meet the basic purpose of the proposed Redevelopment Plan, which is to facilitate the elimination of blight and the revitalization and reuse of the former Rio Vista Army Reserve Center.

The following five alternatives have been evaluated in comparison to the Project:

- Alternative 1: No Build,
- Alternative 2: No Project,
- Alternative 3: Redevelopment Plan with Reuse of Historic District,
- Alternative 4: Redevelopment Plan without Parks and Recreation, and
- Alternative 5: Redevelopment Plan with Delta Interpretive Center.

Table 18.1
 ALTERNATIVES COMPARISON TO THE PROJECT: DEVELOPMENT
 ASSUMPTIONS¹

Project	110,000 square foot research station 150-room lodge 9,000 square foot restaurant 21,000 square foot community center 12.3 acres of park/sports fields
Alternative 1: No Build	None
Alternative 2: No Project ²	55,000 square foot research station 75-room lodge 4,500 square foot restaurant 10,500 square foot community center 6 acres of park/sports fields
Alternative 3: Redevelopment Plan with Reuse of Historic District	110,000 square foot research station 130-room lodge ³ 9,000 square foot restaurant 21,000 square foot community center 12.3 acres of park/sports fields
Alternative 4: Redevelopment Plan without Parks and Recreation	110,000 square foot research station 150-room lodge 9,000 square foot restaurant
Alternative 5: Redevelopment Plan with Delta Interpretive Center ⁴	110,000 square foot research station 150-room lodge 9,000 square foot restaurant 11,000 square foot community center 9,000 square foot interpretive center 12.3 acres of park/sports fields
SOURCE: Wagstaff/MIG 2010.	
<p>¹These development assumptions do not include tax increment revenue that would accrue to the Housing Set-Aside Fund for affordable housing programs, potentially including the development of new housing in the city outside the Project Area, with the Project and Alternatives 3, 4 and 5.</p> <p>²This alternative may ultimately result in the same development but, without a Redevelopment Plan, it is assumed only half would occur within the 2030 time frame analyzed in this EIR.</p> <p>³In order to reduce the number of vehicle trips and avoid significant traffic impacts, this alternative would also slightly reduce the size of the lodge to 130 rooms.</p> <p>⁴This alternative assumes the near term initial development of only the interpretive center.</p>	

In accordance with Section 15126.6(d) of the CEQA Guidelines, the discussion of the impacts of the alternatives is intended to be less detailed than the discussion of the impacts of the proposed Redevelopment Plan. Table 18.1 compares the buildout assumptions for the proposed Redevelopment Plan and the alternatives and Table 18.2 provides a summary comparison of the impacts of the alternatives to those of the proposed Redevelopment Plan.

Table 18.2
ALTERNATIVES COMPARISON TO THE PROJECT¹

Impact	Alternatives			
	Alternative 1: No Build	Alternative 2: No Project	Alternative 3: Redevelopment with Reuse of Historic District	Alternative 4: Redevelopment without Parks and Recreation
(a) Land Use and Planning	No impacts. No benefits.	Similar less than significant impacts. Reduced benefits.	Similar less than significant impacts. Similar benefits.	Reduced less than significant impacts. Reduced benefits.
(b) Population, Housing, and Employment	No impacts. No benefits.	Similar no impacts. Reduced benefits.	Similar no impacts. Similar benefits.	Similar no impacts. Reduced benefits.
(c) Cultural Resources	No impacts.	Similar significant unavoidable impact.	No significant unavoidable impact. Greater benefits.	Similar significant unavoidable impact.
(d) Aesthetics and Community Design	No impacts. No benefits.	Reduced significant impacts. Reduced benefits.	No significant unavoidable impact. Greater benefits.	Reduced significant impacts. Reduced benefits.
(e) Transportation	No impacts. No benefits.	No significant unavoidable impacts. Similar significant impacts. Similar benefits.	Similar significant unavoidable impacts and significant impacts. Similar benefits.	No significant unavoidable impacts. Reduced significant impacts. No benefits.
(f) Public Services and Utilities	No impacts. No benefits.	Reduced less than significant impacts. No benefits.	Similar less than significant impacts. Similar benefits.	Reduced less than significant impacts. Reduced benefits.
(g) Biological Resources	No impacts.	Reduced significant impacts.	Similar significant impacts.	Similar significant impacts.
(h) Drainage and Water Quality	No impacts.	Reduced significant impacts. Reduced benefits.	Similar significant impacts. Similar benefits.	Similar significant impacts. Similar benefits.
(i) Noise	No impacts.	No significant unavoidable impact. Reduced significant impacts.	Similar significant unavoidable impact. Similar significant impacts.	Similar significant unavoidable impact. Reduced significant impacts.
(j) Air Quality	No impacts.	Reduced significant impacts.	Similar significant impacts.	Reduced significant impacts.
(k) Climate Change	No impacts.	No significant unavoidable impact.	Similar significant unavoidable impact.	Similar significant unavoidable impact.
(l) Hazards and Hazardous Materials	No impacts. No benefits.	Similar less than significant impacts.	Similar less than significant impacts.	Similar less than significant impacts.
(m) Geology and Soils	No impacts.	Similar less than significant impacts.	Similar less than significant impacts.	Similar less than significant impacts.
Attainment of Project Objectives	No attainment.	No attainment.	Substantial attainment.	Substantial attainment.

SOURCE: Wagstaff/MIG 2010.

¹Alternative 5: Redevelopment Plan with Delta Interpretive Center would in general have the same benefits, significant impacts and mitigation needs, and significant and unavoidable impacts as the Project. The analysis in Section 18.5 below, evaluates the near-term impacts of initial development of only the interpretive center, parking lot and nature trail.

18.1 ALTERNATIVE 1: NO BUILD

18.1.1 Principal Characteristics

CEQA Guidelines section 15126.6(e)(1) requires the specific alternative of No Project to "be evaluated along with its impact...to allow decision-makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project." CEQA Guidelines section 15126.6(e)(2) requires the No Project analysis to "discuss the existing conditions at the time the (EIR) notice of preparation is published...as well as what would reasonably be expected to occur in the foreseeable future if the project were not approved, based on current plans." Accordingly, Alternative 1: No Build compares the effects of the Project to existing conditions and Alternative 2: No Project compares the effects of the Project to future conditions without the Project.

Alternative 1 would maintain the existing conditions as described in the "Setting" sections of each environmental topic chapter in this EIR. There would be no development within the proposed Project Area and existing blighting conditions would remain.

18.1.2 Alternative 1 Evaluation: Comparative Impacts and Mitigating Effects

(a) Land Use and Planning. No impacts. The existing land use characteristics within the proposed Project Area would remain unchanged. The property would remain in its present blighted, vacant and underutilized condition, isolated from the remainder of the city, and separating the community from the riverfront. This alternative would avoid potential land use compatibility issues between active recreation uses and adjacent residential properties. The No Build Alternative would not realize the General Plan and Base Reuse Plan vision and objectives for the former Army base.

(b) Population, Housing, and Employment. No impacts. There would be no increases in employment and income, and no increased revenue accruing to the City. There would be no additional tax increment revenues accruing to the Agency and the Housing Set-Aside Fund for use in helping to meet the community's need for housing affordable to low- and moderate-income households. Without the new jobs stimulated by the Project, the city's jobs/housing balance would be worse.

(c) Cultural Resources. No impacts. The existing significant historical resources within the proposed Project Area would remain undisturbed for potential future rehabilitation, documentation and interpretation. There would also be no opportunity for rehabilitation or interpretation through redevelopment assistance or as part of development stimulated by the proposed Redevelopment Plan.

(d) Aesthetics and Community Design. No impacts. The existing visual character and views of the proposed Project Area would remain unchanged. There would be no opportunity to enhance visual access to the river and to create a unique and memorable place on this prominent site that would make a positive contribution to community character and identity. The historic complex of buildings and structures, the mature trees and the riverfront that define the visual character of the site would be unchanged, but they would also continue to deteriorate under the existing blighting conditions. The potential spill light, glare and night sky glow impacts caused by nighttime sports field lighting would be avoided.

(e) Transportation. No impacts. There would be no development and thus no vehicle trips generated from within the proposed Project Area and no impact on area roadways, intersections, and transit operations. The No Build Alternative would avoid the Project's significant and unavoidable traffic impacts on Highway 12 between SR 84 and SR 160, on Main Street between 2nd Street and Highway 12, at the Highway 12/Front Street intersection, and on transit system operations along Highway 12. There would be no opportunity to realize a segment of the city's multi-use pedestrian and bicycle Primary Trail System within the proposed Project Area.

(f) Public Services and Utilities. No impacts. There would be no development and thus no additional water demand, sewage generation, calls for police or fire service, student generation, demand for library space, need for park and recreation facilities, or solid waste generation associated with the proposed Project Area. There would also be no new infrastructure installed to support and stimulate development of the property. Without the redevelopment expenditures for park and recreation facilities, the multi-purpose community center, outdoor sports fields and courts, children's park, picnic area and public restrooms would not be provided and the Parks Master Plan objectives and projects involving the former Army base would not be realized.

(g) Biological Resources. No impacts. There would be no disturbance of existing vegetation and wildlife habitat within the proposed Project Area or the adjacent river, no fill of wetlands or other waters, no loss of riparian habitat, no substantial effects on special status species or their habitat, and no disturbance of nesting birds or bats during construction. The existing mature trees on the site would be preserved.

(h) Drainage and Water Quality. No impacts. Potential degradation of water quality from construction period erosion and sedimentation would be avoided. There would be no change in the existing impervious surface area, the amount or rate of surface water runoff, or potential impacts to surface water quality from new development. There would be no potential exposure of people or structures to potential increases in flooding related to sea level rise. There would be no drainage infrastructure installed to stimulate development of the property.

(i) Noise. No impacts. There would be no development and thus no noise generated from within the proposed Project Area, such as noise from construction activities or from sports fields. Potential significant and unavoidable traffic noise impacts affecting homes and other uses along Beach Drive and 2nd Street would also be avoided.

(j) Air Quality. No impacts. There would be no development and thus no air pollutant emissions, including no construction nuisance dust and no diesel particulate matter from boat engines. The significant and unavoidable impacts of the Project related to carbon monoxide (CO) concentrations would be avoided.

(k) Climate Change. No impacts. There would be no development and thus no greenhouse gas emissions and no impact on climate change.

(l) Hazards and Hazardous Materials. No impacts. Existing asbestos and lead paint contamination within the proposed Project Area would remain.

(m) Geology and Soils. No impacts. There would be new public improvements, development or occupants on the site exposed to potential groundshaking, liquefaction, or soils-related hazards associated with seismic and soils conditions within the proposed Project Area.

18.1.3 Attainment of Project Objectives

Existing conditions would remain within the proposed Project Area. This alternative would not achieve the Project objectives of removing blighting conditions, stimulating development and economic activity, providing community recreational amenities, integrating the vacant and underutilized site into the fabric of the community, and recovering from the closure of the former Army base.

18.2 ALTERNATIVE 2: NO PROJECT

18.2.1 Principal Characteristics

Under this alternative, the Redevelopment Plan would not be adopted. The proposed redevelopment Project Area would not be established, tax increment revenue would not accrue, redevelopment activities would not be undertaken within the proposed Project Area, and affordable housing projects and programs funded by the portion of tax increment revenue that would go to the Housing Set-Aside Fund would not occur. Asbestos and lead abatement, site preparation, the installation of needed roads and infrastructure, and development and revitalization of the proposed Project Area in accordance with the General Plan may eventually occur, but would be very substantially delayed. This alternative would ultimately, over the very long term, result in the same mixture and intensity of development within the proposed Project Area as the Project, but only half as much development would occur within the 2030 time frame analyzed in this EIR.

18.2.2 Alternative 2 Evaluation: Comparative Impacts and Mitigating Effects

(a) Land Use and Planning. This alternative would have similar but less immediately realized impacts to the Project with respect to community cohesion, changes in land use, and internal and external land use compatibility.

(b) Population, Housing, and Employment. This alternative would result in only half the increases in employment and income, and revenue accruing to the City, and less jobs/housing balance benefits, as compared to the Project, and these benefits would be much longer term.

(c) Cultural Resources. This alternative would have similar impacts to the Project with respect to the probable loss of the proposed historic district. The slower pace of development could afford greater opportunities to accommodate rehabilitation that would avoid a loss of integrity but there would also be less opportunity for redevelopment assistance for, and less financial feasibility of development involving, rehabilitation of historic resources.

(d) Aesthetics and Community Design. This alternative would have less substantial but still significant impacts similar to the Project with respect to aesthetics and community design, including potential impacts related to visual character, visual access to the river and spill light, glare and sky glow.

(e) Transportation. Trip generation would be reduced by half to 1,303 trips per day with this alternative. The No Project Alternative would avoid the significant and unavoidable traffic impacts on Highway 12 between SR 84 and SR 160, on Main Street between 2nd Street and

Highway 12, at the Highway 12/Front Street intersection, and on transit system operations along Highway 12. Although these facilities would still operate at an unacceptable traffic level of service (LOS), the additional increment of Project traffic between now and 2030 would not be a cumulatively considerable contribution and would thus be less than significant.

(f) Public Services and Utilities. The No Project Alternative would result in half the water demand and sewage generation, as compared to the Project. Sewage generation would be an estimated 7,500 gallons per day. Redevelopment assistance would not be available for on-site water and sewer infrastructure. This alternative would also result in a corresponding reduction in calls for police and fire service, student generation, demand for library space, need for park and recreation facilities, and solid waste generation, relative to the Project, as well as a reduction in development impact and connection fees received by the City.

(g) Biological Resources. This alternative would have similar impacts to the Project with respect to biological resources, including removal and disturbance of vegetation and wildlife habitat on the site and in the river, fill of wetlands or other waters, loss of riparian habitat, potentially substantial effects on special status species and their habitat, disturbance of nesting birds and bats, and loss of mature trees.

(h) Drainage and Water Quality. This alternative would have similar impacts to the Project with respect to impacts on drainage and water quality, although less intensive development of the property would result in a corresponding reduction in impervious surface area, stormwater runoff, and pollutant loading, and more opportunity for passive on-site stormwater management measures. However, the estimated \$100,000 in tax increment expenditures to provide on-site drainage facilities would also not occur.

(i) Noise. Between now and 2030, this alternative would result in less noise than the Project due to a 50 percent reduction in the number of vehicle trips added to local roadways, and only half as many sports fields and outdoor courts developed on the site. The significant and unavoidable traffic noise impact of the Project on sensitive receptors along Beach Drive and 2nd Street would be avoided.

(j) Air Quality. Between now and 2030, this alternative would result in an approximately 50 percent reduction in air pollutant emissions. Modeled emissions estimates using URBEMIS 2007 were 1.49 tons per year of ROG and 2.02 tons per year of NO_x, and 23.63 pounds per day of PM₁₀.

(k) Climate Change. Between now and 2030, this alternative would result in an approximately 50 percent reduction in greenhouse gas (GHG) emissions, for total GHG emissions of 2,589 metric tons per year and 21.6 metric tons per year per service population.

(l) Hazards and Hazardous Materials. Without redevelopment assistance, this alternative would have reduced benefits in comparison to the Project with respect to the removal of remaining asbestos and lead paint contamination, and similar impacts as well.

(m) Geology and Soils. Between now and 2030, this alternative would expose half as much property and half the number of occupants to potential groundshaking and liquefaction hazards and soils-related hazards associated with seismic and soils conditions within the proposed Project Area.

18.2.3 Attainment of Project Objectives

This alternative would not achieve the basic project objectives of enabling blight elimination and public-private revitalization within the proposed Project Area.

18.3 ALTERNATIVE 3: REDEVELOPMENT PLAN WITH REUSE OF HISTORIC DISTRICT

18.3.1 Principal Characteristics

This alternative would consist of the adoption and implementation of the Redevelopment Plan, with the rehabilitation and reuse of the existing buildings and facilities within the proposed Project Area that are contributing elements to the proposed U.S. Engineer Storehouse Historic District, in a manner that fully adheres to the Secretary of the Interior's Standards for the Rehabilitation of Historic Properties, so that the integrity of the proposed historic district and its continued eligibility to the California Register of Historic Resources is preserved. This alternative is intended to avoid the significant and unavoidable impact on historic resources identified in Chapter 6 (Impact 6-2). A portion of redevelopment resources would be committed toward the additional costs of rehabilitation. The development assumptions and other aspects of this alternative would be the same as with the Project.

18.3.2 Alternative 3 Evaluation: Comparative Impacts and Mitigating Effects

(a) Land Use and Planning. This alternative would have similar impacts to the Project with respect to community cohesion, changes in land use, and internal and external land use compatibility.

(b) Population, Housing, and Employment. This alternative would have similar impacts to the Project with respect to population, housing and employment. The added cost, delay and limitations involved in rehabilitation could slow revitalization but these unique assets could also serve to catalyze economic development.

(c) Cultural Resources. This alternative would avoid the significant and unavoidable impact on historic resources identified in Impact 6-2, i.e., the loss of integrity and loss of continued eligibility to the California Register of Historic Resources. This alternative would have similar impacts to the Project with respect to archaeological and paleontological resources.

(d) Aesthetics and Community Design. This alternative would avoid the loss of unique and irreplaceable historic resources and would take advantage of the opportunity that they present to create a unique and memorable place, to interpret and celebrate Rio Vista's river and Delta heritage, and to enhance community character, identity and regional visibility.

(e) Climate Change. This alternative would reduce greenhouse gas emissions by reusing the existing buildings on the site, avoiding the energy use involved in building demolition and disposal, and new building materials and work required for new construction.

(f) Hazards and Hazardous Materials. This alternative would have similar impacts to the Project with respect to the removal of remaining asbestos and lead paint contamination, and exposure to other hazards and hazardous materials.

This alternative would also have similar impacts to the Project with respect to transportation, public services and utilities, biological resources, drainage and water quality, noise, air quality, and geology and soils.

18.3.3 Attainment of Project Objectives

This alternative would involve unique opportunities and constraints. On the one hand, it would recognize and make use of this irreplaceable opportunity to create a unique and memorable place, to interpret and celebrate Rio Vista's river and Delta heritage, and to enhance community character, identity and regional visibility. These unique assets could serve to catalyze economic development within the proposed Project Area and more widely. On the other hand, the cost, delay and limitations on development involved in the rehabilitation and reuse of these historic properties in a way that fully adheres to the Standards of Rehabilitation could hinder Project Area revitalization as compared to the Project. Overall, considering both the opportunities and constraints, the ability of this alternative to attain the basic project objectives of enabling blight elimination and public-private revitalization within the proposed Project Area would be similar to the Project.

18.4 ALTERNATIVE 4: REDEVELOPMENT PLAN WITHOUT PARKS AND RECREATION

18.4.1 Principal Characteristics

This alternative would involve the adoption and implementation of the Redevelopment Plan, but without the expenditures for park and recreation facilities identified as part of the Project. Specifically, the multi-purpose community center, outdoor sports fields and courts, children's park, picnic area and public restrooms would not be provided. The estimated \$5.5 million in tax increment funds anticipated to be used for these facilities under the Project would instead be used for other redevelopment activities within the proposed Project Area, such as infrastructure improvements, site preparation, asbestos and lead clean-up, rehabilitation of buildings and structures, and economic development incentives. This alternative is intended to provide additional funding to more directly stimulate economic development within the proposed Project Area, to reflect the emerging possibility of the use of the proposed Project Area solely for a research station, and to reduce the significant traffic impacts identified in Chapter 8. In order to reduce the number of vehicle trips and avoid significant traffic impacts, this alternative would also slightly reduce the size of the lodge to 130 rooms. The total building floor area would be reduced by 9 percent. The remaining development assumptions and other aspects of the Redevelopment Plan would be the same as with the Project.

18.4.2 Alternative 4 Evaluation: Comparative Impacts and Mitigating Effects

(a) Land Use and Planning. This alternative would have similar impacts to the Project with respect to community cohesion, changes in land use, and internal and external land use compatibility. Without the park, recreation and trail facilities, however, there would be less integration of the site with the community and of the community with the riverfront. There would also be fewer internal land use compatibility impacts but also fewer opportunities for synergies and joint use opportunities among the land uses on the site. This alternative would have less potential incompatibilities between sports fields and adjacent residential uses associated with night time sports field lighting and noise. Redevelopment with parks and recreation would not

achieve the General Plan vision and Parks Master Plan recommendations for the former Army base.

(b) Population, Housing, and Employment. This alternative would have slightly reduced employment and jobs/housing balance compared to the Project.

(c) Cultural Resources. This alternative would have generally the same impacts as the Project on historic, archaeological and paleontological resources. There would be less opportunity for public access to the historic resources on the site for public enjoyment and education. This alternative may provide more opportunity to locate development away from the historic buildings and structures, potentially avoiding impacts on their possibly character-defining setting, enabling rehabilitation adhering to the Standards for Rehabilitation, and avoiding the significant and unavoidable impact of the Project.

(d) Aesthetics and Community Design. This alternative would avoid potential spill light, glare and night sky glow impacts from nighttime sports field lighting. There would be less opportunity for public physical and visual access and public views to the Sacramento River within the proposed Project Area, and for public enjoyment and education involving the on-site historic resources. The site may be redeveloped with a more developed character and less open space, parkland and landscaped areas, particularly along Beach Drive and the riverfront.

(e) Transportation. Development of the proposed Project Area without the community park and community center, and with fewer lodge rooms, would result in approximately 604 fewer trips, a 23 percent reduction in the number of vehicle trips as compared to the Project. This reduction in trips would be enough to avoid the significant and unavoidable traffic impacts on Highway 12 between SR 84 and SR 160, on Main Street between 2nd Street and Highway 12, at the Highway 12/Front Street intersection, and on transit system operations along Highway 12.

Although these facilities would still operate at an unacceptable traffic level of service (LOS), the additional increment of Project traffic would not be cumulatively considerable and would thus be less than significant. The segment of the city's multi-use pedestrian and bicycle Primary Trail System within the proposed Project Area would not be realized.

(f) Public Services and Utilities. Unlike the Project, this alternative would not provide the park, recreation and trail facilities, including the multi-purpose community center, outdoor sports fields and courts, children's park, picnic area and public restrooms, and the Parks Master Plan recommendations for the former Army base would not be realized. Redevelopment without parks and recreation would result in a reduction in water demand and sewage generation, as compared to the Project, and a corresponding reduction in calls for police and fire service, student generation, demand for library space, need for park and recreation facilities, and solid waste generation, relative to the Project. More tax increment revenue would be available for on-site infrastructure improvements.

(g) Biological Resources. This alternative would generally result in similar impacts to the Project with respect to biological resources. There may be less opportunity to provide limited wildlife habitat and integration of existing vegetation and habitat into parkland.

(h) Hydrology. Total building floor area and, in turn, impervious areas and runoff, would be slightly reduced. There may be less opportunity for passive approaches to storm water quality management incorporated into the design of parkland.

(i) Noise. The approximately 23 percent reduction in traffic would correspondingly reduce traffic noise impacts on Beach Drive and 2nd Street but redevelopment-facilitated development would still result in a doubling of traffic volumes on 2nd Street, and therefore traffic noise impacts could remain significant and unavoidable. Noise from construction activities would also be reduced. Potential nuisance impacts on adjacent residential sensitive receptors from sports field noise would not occur.

(j) Air Quality. This alternative would have an approximately 9 percent reduction in building space and a 23 percent reduction in the number of vehicle trips, and a corresponding reduction in air pollutant emissions, as compared to the Project. Modeled emissions estimates for this alternative using URBEMIS 2007 were 2.31 tons per year of ROG, 3.16 tons per year of NO_x, and 40.92 pounds per day of PM₁₀. These estimated emissions represent approximately a 22 percent reduction in ozone precursors and a 13 percent reduction in PM₁₀, as compared to the Project. Construction nuisance dust would be slightly reduced and there would be no exposure of active recreation sensitive receptors to diesel particulate matter from boat engines.

(k) Climate Change. This alternative would have an approximately 9 percent reduction in building space and a 23 percent reduction in the number of vehicle trips, and a corresponding reduction in GHG emissions, as compared to the Project.

(l) Hazards and Hazardous Materials. The hazards and hazardous materials impacts of this alternative would be similar to the project.

(m) Geology and Soils. The geology and soils impacts of this alternative would be similar to the project.

18.4.3 Attainment of Project Objectives

This alternative would not achieve the basic project objective of providing city-wide recreational amenities to meet the unmet recreational needs of the community and to attract visitors and stimulate economic investment and activity. However, the estimated \$5 million in tax increment funds that would have been used to construct park and recreation facilities with the Project, would be available for other redevelopment activities within the proposed Project Area. This alternative would achieve the other Project objectives. With more funding available for other redevelopment activities instead of recreation amenities, it could be possible to more effectively and readily stimulate economic development, although this is not certain, since recreation amenities could also serve to catalyze development.

18.5 ALTERNATIVE 5: REDEVELOPMENT PLAN WITH DELTA INTERPRETIVE CENTER

18.3.1 Principal Characteristics

This alternative reflects the emerging possibility of the near-term development within the proposed Project Area of an approximately 10,000-square foot Sacramento-San Joaquin Delta interpretive center, and associated parking lot and nature trail. The interpretive center would feature interactive exhibits that teach visitors about the River and Delta environment. The City has been in discussions with resources agencies wishing to partner with the City in this Project and is currently pursuing grant assistance in funding its development.

This alternative would still involve the adoption and implementation of the Redevelopment Plan, and ultimately the same intensity of development within the proposed Project Area by 2030 as the Project. It is assumed that the mix of land uses developed by 2030 would be the same, except that the community center would be reduced in size by 10,000 square feet and the 10,000 square foot interpretive center would be included in its place. The 10,000 square foot interpretive center, and associated parking lot and nature trail, would be developed first.

Because this alternative would ultimately include the same intensity of development and a very similar mix of land uses as the Project, the long-term impacts of this alternative within the 2030 time frame analyzed in this EIR would be generally the same as the Project.

The interpretive center and parking lot would be located on the upper terrace portion of the proposed Project Area just to the west of the water tower. The nature trail would extend from the interpretive center down to the waterfront and along a portion of the waterfront, with educational displays along the trail. It is assumed for purposes of this analysis that development of the interpretive center, parking lot and nature trail would occur within previously developed and disturbed areas, and would not involve the demolition or alteration of the historic buildings and facilities. An educational "habitat restoration area," consisting of a small wetland located by the river on the south side of the former marine railway, may be developed in a separate, later development phase.

The following analysis provides an additional evaluation of the near-term impacts of initial development of only the 10,000 square foot interpretive center, parking lot and nature trail.

18.5.2 Alternative 5 Evaluation: Comparative Impacts and Mitigating Effects

(a) Land Use and Planning. The long-term land use and planning impacts of this alternative within the 2030 time frame analyzed in this EIR would be generally the same as the Project.

In the near term, the development initially of the interpretive center, parking lot and nature trail would have a beneficial effect on the physical arrangement of the community by helping to integrate this key waterfront parcel into the fabric of the community, reconnect the city with its waterfront, and integrate Sandy Beach County Park. With only the interpretive center, there would be no internal land use incompatibility impacts, while still allowing for synergies and joint use opportunities with additional land uses on the site over the long term. The interpretive center, due to the nature of the activity and its location at the center of the site away from adjacent homes, would be generally compatible with adjacent residential uses. The interpretive center would also be consistent with the General Plan land use designation, would further the General Plan vision and goals for the former Army base and the policies of the Delta Protection Commission Land Use and Resource Management Plan, and would not preclude or be incompatible with other uses envisioned by the General Plan, the Base Reuse Plan or the Parks Master Plan.

(b) Population, Housing, and Employment. The long-term population, housing and employment impacts of this alternative within the 2030 time frame analyzed in this EIR would be generally the same as the Project.

The near-term initial development of only the interpretive center, parking lot and nature trail may serve to catalyze economic development within the proposed Project Area and more widely, but would not induce growth for which adequate planning has not occurred. The interpretive center would not displace any existing housing or people. The interpretive center would directly and

indirectly result in new temporary construction jobs and permanent employment opportunities, and would result in a slight improvement in the city's jobs/housing balance.

(c) Cultural Resources. The long-term cultural resources impacts of this alternative within the 2030 time frame analyzed in this EIR would be generally the same as the Project.

Development of the interpretive center, parking lot and nature trail would not involve the demolition or reuse of the historic buildings and facilities, and they would remain in place for potential future rehabilitation, documentation and interpretation. However, if abatement of asbestos, lead-based paint or creosote contained in the historic buildings and facilities were necessary to avoid potential exposure of employees or visitors; if trail or other improvements were to require alteration of historic facilities; or if the interpretive center, parking lot or trail were to alter the potentially character-defining context of the potential historic district; such changes could cause a loss of integrity and loss of continued eligibility to the California Register and a significant and unavoidable impact on historic resources. The interpretive center, parking lot and nature trail would have similar impacts and mitigation needs as the Project with respect to archaeological and paleontological resources.

(d) Aesthetics and Community Design. The long-term aesthetics and community design impacts of this alternative within the 2030 time frame analyzed in this EIR would be generally the same as the Project.

The near-term initial development of only the interpretive center, parking lot and nature trail would have similar impacts and mitigation needs as the Project with respect to visual character and quality, but would avoid the potentially significant impacts of the Project related to public access to the river; light, glare and sky glow; and obtrusive sports field lighting.

(e) Transportation. The long-term transportation impacts of this alternative within the 2030 time frame analyzed in this EIR would be generally the same as the Project.

Assuming similar trip generation characteristics as the community center included in the development assumptions for the Project, the interpretive center alone would generate an estimated 229 daily trips, 16 AM peak hour trips and 14 PM peak hour trips. This number of trips would avoid the significant and unavoidable traffic impacts on Highway 12 between SR 84 and SR 160, on Main Street between 2nd Street and Highway 12, at the Highway 12/Front Street intersection, and on transit system operations along Highway 12 that were identified for the Project. Although these facilities would still operate at an unacceptable traffic level of service (LOS), the additional increment of traffic from the interpretive center would not be cumulatively considerable and would thus be less than significant.

(f) Public Services and Utilities. The long-term impacts of this alternative within the 2030 time frame analyzed in this EIR would be generally the same as the Project with respect to calls for police and fire service, student generation, demand for library space, need for park and recreation facilities, and solid waste generation.

The near-term initial development of the interpretive center, parking lot and nature trail would have less-than-significant impacts related to the need for additional police, fire and emergency medical service, school, and library facilities and associated potential environmental impacts. The interpretive center would represent a unique and beneficial contribution to Rio Vista's park and recreation facilities, and would not preclude future development of the Parks Master Plan's

specific proposals for the proposed Project Area. Receiving landfills have sufficient permitted capacity to accept the added solid waste that would be generated by the interpretive center.

(g) Biological Resources. The long-term biological resources impacts of this alternative within the 2030 time frame analyzed in this EIR would be generally the same as the Project.

It is assumed for purposes of this analysis that development of the interpretive center, parking lot and nature trail would occur within previously developed and disturbed areas and thus would have no direct impacts on wetland, riparian, shaded riverine, or aquatic habitats on the site and in the adjacent river, or on special-status species. Similar construction period and operational water quality mitigations as the Project would be required to avoid indirect hydrology and water quality impacts on wetland, riparian, riverine and aquatic habitats and other biological resources. The interpretive center would have similar impacts and mitigation needs as the Project with respect to potential disturbance of nesting birds and bats.

If elements of the interpretive center project, including but not limited to the nature trail, were to extend beyond existing on-site paved areas, wharves and heavily disturbed areas previously occupied by buildings and facilities, then consultation with the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG) may be necessary to determine if the proposed development could result in a "take" of a federal or State protected species or loss of sensitive natural communities, whether additional focused surveys may be required to determine if any protected species are present on the site and, if any special-status plant or animal species are determined to be on the property, to develop an appropriate mitigation plan.

The educational wetland "habitat restoration area," which may be developed in a separate, later development phase, would affect existing wetlands and special-status plant species located near the former marine railway. This would involve impacts and mitigation needs similar to the Project, including the need to obtain all required permits and approvals from the U.S. Army Corps of Engineers (Corps), the CDFG and the Regional Water Quality Control Board (RWQCB), and to incorporate any project design modifications and mitigation measures required by the Corps, CDFG and RWQCB, as well as consultation with the USFWS and CDFG to determine the potential for a "take" of a protected species and mitigation needs.

(h) Drainage and Water Quality. The long-term drainage and water quality impacts of this alternative within the 2030 time frame analyzed in this EIR would be generally the same as the Project.

The near-term impacts of initial development of only the interpretive center, parking lot and nature trail would have similar impacts and mitigation needs as the Project with respect to drainage and water quality, although with a substantial reduction in impervious surface area, stormwater runoff, and pollutant loading, and more opportunity for passive on-site stormwater management measures. The interpretive center and parking lot would be located on a portion of the site that would not be subject to flooding related to sea level rise, although portions of the nature trail along the river may be subject to flooding.

(i) Noise. The long-term noise impacts of this alternative within the 2030 time frame analyzed in this EIR would be generally the same as the Project.

The near-term initial development of only the interpretive center, parking lot and nature trail would result in less-than-significant traffic noise due to the comparatively small number of vehicle trips (229 trips per day) added to local roadways. The significant and unavoidable traffic

noise impact of the Project on sensitive receptors along Beach Drive and 2nd Street would be avoided. Due to its location toward the center of the site and near the water, the interpretive center would have less-than-significant construction and operational noise impacts on residential sensitive receptors located adjacent to the northwest and southwest corners of the proposed Project Area.

(j) Air Quality. The long-term air quality impacts of this alternative within the 2030 time frame analyzed in this EIR would be generally the same as the Project.

The 10,000 square foot interpretive center, based on its size and type of use, would be below the Yolo-Solano Air Quality Management District screening criteria for operational ozone (ROG and NO_x), particulate matter (PM₁₀), and carbon monoxide (CO), and thus would have a less-than-significant impact with respect to these criteria air pollutants. The interpretive center would not represent a new source of toxic air contaminants. Employees and visitors would not be considered sensitive receptors subject to prolonged exposure and the interpretive center would not be located near enough (i.e., within 300 feet) of diesel particulate emissions at the nearby Delta Marina to be at an elevated health risk. The interpretive center would not generate or be exposed to substantial odors. The interpretive center would have similar significant though proportionally less construction dust impacts and mitigation needs as the Project.

(k) Climate Change. The long-term climate change impacts of this alternative within the 2030 time frame analyzed in this EIR would be generally the same as the Project.

The Yolo-Solano Air Quality Management District does not recommend any particular threshold of significance for greenhouse gas emissions¹ and, under Section 15064.4 of the CEQA Guidelines, a lead agency has the discretion to determine what approach and standard to apply in the context of a particular project. Applying the Bay Area Air Quality Management District (BAAQMD) CEQA Air Quality Guidelines thresholds of significance and screening criteria, as was done for the Project, the 10,000 square foot interpretive center would be below the BAAQMD screening level size for, and thus would have a less-than-significant impact related to, operational greenhouse gas emissions.²

(l) Hazards and Hazardous Materials. The long-term hazards and hazardous materials impacts of this alternative within the 2030 time frame analyzed in this EIR would be generally the same as the Project.

The initial development of the interpretive center, parking lot and nature trail would have similar less-than-significant impacts as the Project with respect to hazardous materials transport, use or disposal; risk of upset or accidents; hazardous materials near schools; natural gas transmission line hazards; exposure to residual soil and groundwater contamination; asbestos and lead-based paint exposure; hazardous materials use and contamination in the vicinity; agricultural chemicals exposure; airport safety hazards; and wildfire impacts. The interpretive center would have a similar significant and unavoidable impact as the Project with respect to placing additional people and property at risk due to longer response times associated with occasional

¹ Yolo-Solano Air Quality Management District, Handbook for Assessing and Mitigation Air Quality Impacts, July 11, 2007, Davis, California, Page 9.

² Bay Area Air Quality Management District, California Environmental Quality Act Air Quality Guidelines, June 2010.

flooding of 2nd Street at the Marina Creek crossing, although the small size and fewer employees and visitors as compared to the Project would mean less exposure to this infrequent risk.

(m) Geology and Soils. The long-term geology and soils impacts of this alternative within the 2030 time frame analyzed in this EIR would be generally the same as the Project.

The proposed Project Area is subject to moderate ground shaking in an earthquake, has very high liquefaction susceptibility, and moderate erosion and shrink-swell potential. Similar to the Project, the seismic and soils-related impacts of the interpretive center, parking lot and nature trail, would be adequately addressed by existing laws, regulations and policies, including the California Building Code and the City's development review procedures.

18.5.3 Attainment of Project Objectives

This alternative would be similar to the Project in its ability to achieve the Project objectives of removing blighting conditions, stimulating development and economic activity, providing community recreational amenities, integrating the vacant and underutilized site into the fabric of the community, and recovering from the closure of the former Army base. The initial development of an interpretive center and nature trail in the near term would create a unique visitor attraction that celebrates Rio Vista's river and Delta heritage, enhances community identity and regional visibility, and catalyzes economic development within the proposed Project Area and more widely.

18.6 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The CEQA Guidelines (section 15126[e][2]) stipulate, "If the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives." Other than the No Build and No Project alternatives, Alternative 4: Redevelopment without Park and Recreation Facilities would result in the least adverse environmental impacts, and would therefore be the "environmentally superior alternative." This conclusion is based on the comparative impact conclusions in Table 18-2 and, in particular, on the avoidance of significant and unavoidable traffic impacts (Impacts 8-1, 8-2, 8-3, 8-4, 8-5, 8-6, 8-7, and 8-12). This alternative would also avoid significant impacts (Impacts 7-4 and 13-3) or reduce significant impacts (Impacts 7-3, 13-1, 13-2, 14-1 and 14-2) for which feasible mitigation measures have been identified.

19. MITIGATION MONITORING

19.1 MITIGATION MONITORING REQUIREMENTS

CEQA Section 21081.6 of the Public Resources Code requires a lead agency to adopt a mitigation monitoring program when it approves a project for which an EIR or mitigated negative declaration has been prepared. A mitigation monitoring program would therefore be required to verify the implementation of those mitigation measures identified in this EIR that are adopted by the Agency. Monitoring of the implementation of most of the mitigation measures would occur through the City's development review procedures, including plan check and field inspection procedures. However, to satisfy CEQA statute Section 21081.6 and CEQA Guidelines Section 15097 (Mitigation Monitoring and Reporting), a documented record of implementation will be necessary.

19.2 MITIGATION MONITORING CHECKLIST FORMAT

A Mitigation Monitoring Program will be prepared after the Agency certifies the Final EIR and adopts the Redevelopment Plan, and makes findings as to which mitigation measures are feasible and within its jurisdiction, and will be implemented. The following Mitigation Monitoring Checklist (Table 19.1) template contains the following information, pursuant to CEQA Guidelines Section 15097:

- *Impact.* This column identifies each significant impact, as presented in the EIR summary table (Table 2.1 in Chapter 2).
- *Related Mitigation Measure.* This column identifies the corresponding mitigation measures as presented in the EIR summary table, and may be supplemented by the performance criteria by which the success of the mitigation will be gauged.
- *Monitoring.* This column identifies (1) the "implementing entity" responsible for carrying out each mitigation measure (e.g., City, applicant); (2) the "type of monitoring action" (e.g., condition of future project approval, plan check, specialized monitoring study); (3) timing (e.g., upon completion of a particular construction phase, before issuance of an occupancy permit); and (4) the "monitoring and verification entity" responsible for verifying compliance (e.g., City department).
- *Verification.* This column provides a space for the signature and date of the "monitoring and verification" entity when a monitoring milestone is reached.

Table 19.1

MITIGATION MONITORING CHECKLIST--RIO VISTA ARMY RESERVE CENTER REDEVELOPMENT PLAN

The environmental mitigation measures listed below have been adopted for the Rio Vista Army Reserve Center Redevelopment Plan in order to mitigate the environmental impacts of Plan implementation. A completed and signed checklist will indicate that each mitigation requirement has been implemented, and that mitigation monitoring requirements have been fulfilled with respect to Public Resources Code Section 21081.6.							
IMPACT	MITIGATION MEASURE	MONITORING				VERIFICATION	
		Implementing Entity ¹	Type of Monitoring Action ²	Timing ³	Monitoring and Verification Entity ⁴	Signature	Date
<i>LAND USE AND PLANNING</i>							
Impact 4-1.							
<i>TRANSPORTATION</i>							
Impact 7-1.							
Impact 7-2.							
Impact 7-3.							
<i>PUBLIC SERVICES AND UTILITIES</i>							
Impact 8-1.							
Impact 8-2.							
Impact 8-3.							

¹ Appl. = Applicant; City = City of Rio Vista; RVRA = Rio Vista Redevelopment Agency

² CPI = Construction-Period Inspection, OTC = One Time Confirmation Action; PC = Plan Check; POC = Post-Occupancy Inspection; SMS = Specialized Monitoring; SSR = Subsequent Standard Review

³ DPC = During Future Individual Project Construction; PBP = Prior to Issuance of Building Permit; PPO = Prior to Project Occupancy; STR = Specialized Timing Requirement

⁴ RVRA = Rio Vista Redevelopment Agency; RVCDD = Rio Vista Community Development Department; RVPW = Rio Vista Public Works Department.

20. APPENDICES

- 20.1 Program EIR Authority
- 20.2 Notice of Preparation and Responses
- 20.3 CEQA Standards for EIR Adequacy
- 20.4 CEQA Definition of "Mitigation"
- 20.5 EIR Authors
- 20.6 Army and SHPO Correspondence Regarding Historic Resources

APPENDIX 20.1: PROGRAM EIR AUTHORITY (CEQA GUIDELINES SECTION 15168)

This EIR for the proposed Rio Vista Army Reserve Center Redevelopment Plan has been prepared as a program EIR under authority of section 15168 of the CEQA Guidelines. Section 15168 explains that a program EIR may be prepared on a series of actions that can be characterized as one large project and are related either (1) geographically; (2) as logical parts in the chain of contemplated actions; (3) in connection with issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program; or (4) as individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects which can be mitigated in similar ways.

The proposed redevelopment plan and the series of actions required for its implementation are characterized by all four of these relationships. One, they are geographically related because the project, including all of its implementing actions, would occur in the same general area within the City of Rio Vista. Two, the various local, state, and federal governmental approvals, entitlements, and permits that may be required for development of the project are all logical parts in the chain of actions contemplated by the redevelopment plan amendment program. Three, the redevelopment project would be undertaken in connection with the issuance of rules, regulations, plans, and other general criteria set forth as part of the redevelopment program. Four, activities under the Redevelopment implementation program would be comprised of various individual activities carried out under the statutory authority of the City of Rio Vista that would generally have similar environmental effects that could be mitigated in similar ways.

Subsequent development activities must be examined in the light of the program EIR to determine whether an additional environmental document must be prepared. If a later activity would have effects that were not examined in the program EIR, a new Initial Study would need to be prepared leading to either an EIR or a Negative Declaration. If the lead agency finds that, pursuant to CEQA Guidelines section 15162, no new effects could occur or no new mitigation measures would be required, the lead agency can approve the activity as being within the scope of the project covered by the program EIR, and no new environmental document would be required. Under CEQA Guidelines section 15168, a lead agency shall incorporate feasible mitigation measures and alternatives developed in the program EIR into subsequent actions in the program. Where the subsequent activities involve site-specific operations, the lead agency should use a written checklist or similar device to document the evaluation of the site and the activity to determine whether the environmental effects of the operation were covered in the program EIR.

A program EIR will be most helpful in dealing with subsequent activities if it deals with the effects of the program as specifically and comprehensively as possible. With a good and detailed analysis of the program, many subsequent activities can be found to be within the scope of the project described in the program EIR, and no further environmental document would be required.

A program EIR can be used to simplify the task of preparing environmental documents on later parts of the program. The program EIR can (1) provide the basis in an Initial Study for

determining whether the later activity may have any significant effects; (2) be incorporated by reference to deal with regional influences, secondary effects, cumulative impacts, broad alternatives, and other factors that apply to the program as a whole; and (3) focus an EIR on a subsequent project to permit discussion solely of new effects that had not been considered before.

APPENDIX 20.2
**NOTICE OF PREPARATION
AND RESPONSES**

NOTICE OF EIR PREPARATION NOTICE OF EIR SCOPING MEETING

To: Responsible Agencies, Trustee Agencies, Affected Taxing Agencies, and Other Interested Parties

Subject: **Notice of Preparation of a Draft Environmental Impact Report¹**

From: City of Rio Vista Redevelopment Agency

Street Address: One Main Street

City/State/Zip: Rio Vista, California 94571

Contact: Emi Theriault, Community Development Director

The City of Rio Vista (City) Redevelopment Agency will be the Lead Agency and will prepare an Environmental Impact Report (EIR) for the proposed project identified below. We are interested in comments from your agency as to the appropriate scope and content of the EIR's environmental information pertaining to your agency's statutory responsibilities in connection with the proposed project.

The proposed project is described, and the environmental topics that the City expects to address in the EIR, are listed below.

Due to the time limits mandated by state law, your response to this notice must be sent at the earliest possible date but **not later than 30 days** after receipt of this notice.

Please send your response to the Rio Vista Redevelopment Agency, Attention: Emi Theriault, Community Development Director, One Main Street, Rio Vista, California 94571. Please provide a contact name for your agency with your comments.

Project Title: Rio Vista Army Reserve Center Redevelopment Plan

Project Applicant: Rio Vista Redevelopment Agency

Project Location: Rio Vista, Solano County, California. The portion of Assessor's Parcel Number 0049-320-060 above the mean low water line. East of Beach Drive, west of the Sacramento River, south of the Delta Marina, north of the U.S. Coast Guard Station.

Project Background: California Community Redevelopment Law (CRL) (California Health and Safety Code Section 33000 et seq.) authorizes the local establishment of redevelopment agencies and redevelopment projects to facilitate economic revitalization and alleviate adverse conditions. Chapter 4.5 of the CRL provides redevelopment agencies with special legislative authority to create redevelopment project areas on the site of former military facilities.

The proposed redevelopment Project Area encompasses the approximately 28.16-acre site of the former Rio Vista Army Reserve Center. The base was used for maintenance, repair and storage of shallow-draft river and harbor craft from 1913 until 1989. The base was formally closed in 1995 and later conveyed to the City, subject to the condition that the property be used for recreational purposes, including limited supporting commercial activities, such as research facilities, lodging, restaurants and small retail shops.

A 1998 Rio Vista Army Base Reuse Plan proposed a public-private redevelopment with citywide-serving recreation uses and visitor-serving uses oriented toward the river and delta. The Interagency Ecological Program (IEP), a

¹Reference: California Code of Regulations, Title 14, and (CEQA Guidelines) Sections 15082(a), 15103 and 15375.

consortium of the Department of Water Resources (DWR), the U.S. Bureau of Reclamation, and seven other State and Federal agencies, is interested in the proposed Project Area as an ideal location for a Rio Vista Estuarine Research Station, which would consolidate into one location all member agency personnel, boats and other equipment needed to implement the IEP's Bay-Delta monitoring and research activities.

**Project Area
Characteristics:**

The proposed Project Area is an approximately 28.16-acre portion of a larger approximately 61-acre parcel (Assessor's Parcel Number 0049-320-060), comprising the portion of the larger parcel that lies above the mean low water line. The proposed Project Area extends 2,052 feet along Beach Drive, approximately 1,600 feet along the Sacramento River, and is approximately 680 feet wide (Figure 2).

There are 14 buildings, with a total floor area of 56,415 square feet, and 10 other facilities remaining from the former military use. The buildings include a ship repair shop and two warehouses, each over 10,000 square feet in size, one larger and two smaller administration buildings, seven shops and storage buildings, and a guardhouse. The facilities include a well, an elevated water storage tank, water, sewer and storm drainage pump stations, a marine railway where boats were drawn out of the water for repair, four docks and 14 moorings in the river.

The proposed Project Area is characterized by physical and economic blighting conditions. All existing structures were built before 1960, have not been maintained for 20 years, and have been unsecured and subject to vandalism. Blighting characteristics of the existing buildings include faulty weather protection, broken windows and doors, sagging roofs, holes in walls, exposed wiring, deteriorated eaves or overhangs, and deteriorated or damaged exterior building and roofing materials.

Project Objectives:

The Project is intended to enable blight elimination and public-private revitalization within the proposed Project Area. Realization of the uses intended for the proposed Project Area will require financial assistance for asbestos clean-up, blight removal and infrastructure improvements. The City has identified the following primary objectives of the Project.

- **Develop new citywide-serving recreational amenities.** Intended public recreational uses for the proposed Project Area include a community center, outdoor sports fields and courts, an interactive children's park, a picnic area, a riverfront promenade, a small public marina/cove, and a dry boat storage facility.
- **Clean up remaining hazardous materials contamination.** The buildings and structures remaining in the proposed Project Area contain asbestos-containing building materials and lead-based paint. The Project would enable the City to remediate these conditions or to assist with the cost of remediation, and thereby attract private investment.
- **Provide needed infrastructure.** Costly road, water, sewer and storm drainage improvements are needed to attract private investment. Without proper facilities, the proposed Project Area may remain stagnant and improperly utilized.
- **Stimulate economic development and recovery from the base closure.** The Project would generate revenue to secure funding, eliminate blight, stimulate economic development, provide employment and speed up the community's stalled recovery from the base closure.

- **Attract the Rio Vista Estuarine Research Station.** The City has been working with the DWR to locate the Rio Vista Estuarine Research Station within the proposed Project Area.
- **Help meet the City's need for affordable housing.** Twenty percent of tax increment revenue would go toward increasing, improving and preserving low and moderate income housing.

Anticipated Project Actions:

The City would use various approaches to financing Project costs, most notably tax increment revenue, but also grants and loans from the County, State and Federal governments, and issuing bonds, proceeds from lease or sale of City-owned property, revenue from participation in development, or loans from private financial institutions.

The Redevelopment Agency would receive tax increment revenue over the approximately 45-year duration of the Redevelopment Plan. As required by law, 20 percent of the tax increment revenue would go to affordable housing and an estimated 47 percent to statutory payments to other taxing entities. The remaining tax increment revenue would be available for projects and debt repayment.

Anticipated Project actions include the development of community and recreational facilities, infrastructure improvements, site preparation, toxics clean-up, rehabilitation and economic development incentives, and affordable housing. The Redevelopment Agency anticipates the following specific redevelopment activities:

- Community and recreational facilities projects, including a multi-purpose community center, outdoor sports fields, children's park, and picnic area;
- Site and infrastructure improvements, including demolition, hazardous materials clean-up, marina docks and berths, walkways, a plaza and riverfront promenade, streets and parking, landscaping, and water, sewer and storm drainage facilities; and
- Affordable housing projects or programs outside the proposed Project Area.

Development Assumptions and Time Frame:

The EIR assumes that the Project would facilitate the maximum intensity of development allowed by the City's General Plan within the proposed Project Area—i.e., a 0.2 FAR (floor area ratio-land area), for a total of 244,000 square feet of development, composed of the following uses:

- 21,000 square foot multi-purpose community center
- 12.3 acres of outdoor recreation space
- 104,000 square foot, 150-room lodge with meeting and retail space
- 9,000 square foot restaurant
- 110,000 square foot estuarine research station

The EIR assumes the community center and sports fields would be located generally on the western portion of the site and remaining uses oriented toward the river on the eastern portion of the site. The EIR assumes that all of the existing buildings on the site would be demolished.

The development assumptions listed above are for EIR analysis purposes only and may be conservatively high. They include related capital improvements

identified in the Preliminary Report and represent a mix of uses considered feasible and desirable by the City based on the 1998 Rio Vista Army Base Reuse Plan and its discussions with the DWR regarding a Rio Vista Estuarine Research Station, consistent with the conditions of the transfer of the former base and the General Plan. However, no specific development program or site layout is proposed as part of the Project. The precise mix and layout of uses that is ultimately developed may be different due to changing opportunities and needs over time.

Although the Redevelopment Plan would be effective for approximately 45 years, to 2044, the EIR conservatively assumes full buildout of the proposed Project Area would occur within approximately 20 years, or by 2030.

EIR Scope:

Under CEQA, the environmental consequences of the redevelopment activity made possible by the proposed project must be evaluated. The City has determined that preparation of a program environmental impact report (EIR) is required pursuant to CEQA (Public Resources Code) section 21090(a) and CEQA Guidelines section 15180. The following environmental topics (from the CEQA Guidelines Appendix G list of environmental factors, with the addition of greenhouse gas emissions, will be evaluated in the EIR:

- aesthetics,
- agricultural resources,
- air quality,
- biological resources,
- cultural resources,
- geology and soils,
- greenhouse gas emissions,
- hazards and hazardous materials,
- hydrology and water quality,
- land use and planning,
- mineral resources,
- noise,
- population and housing,
- public services,
- recreation,
- transportation/traffic, and
- utilities and service systems.

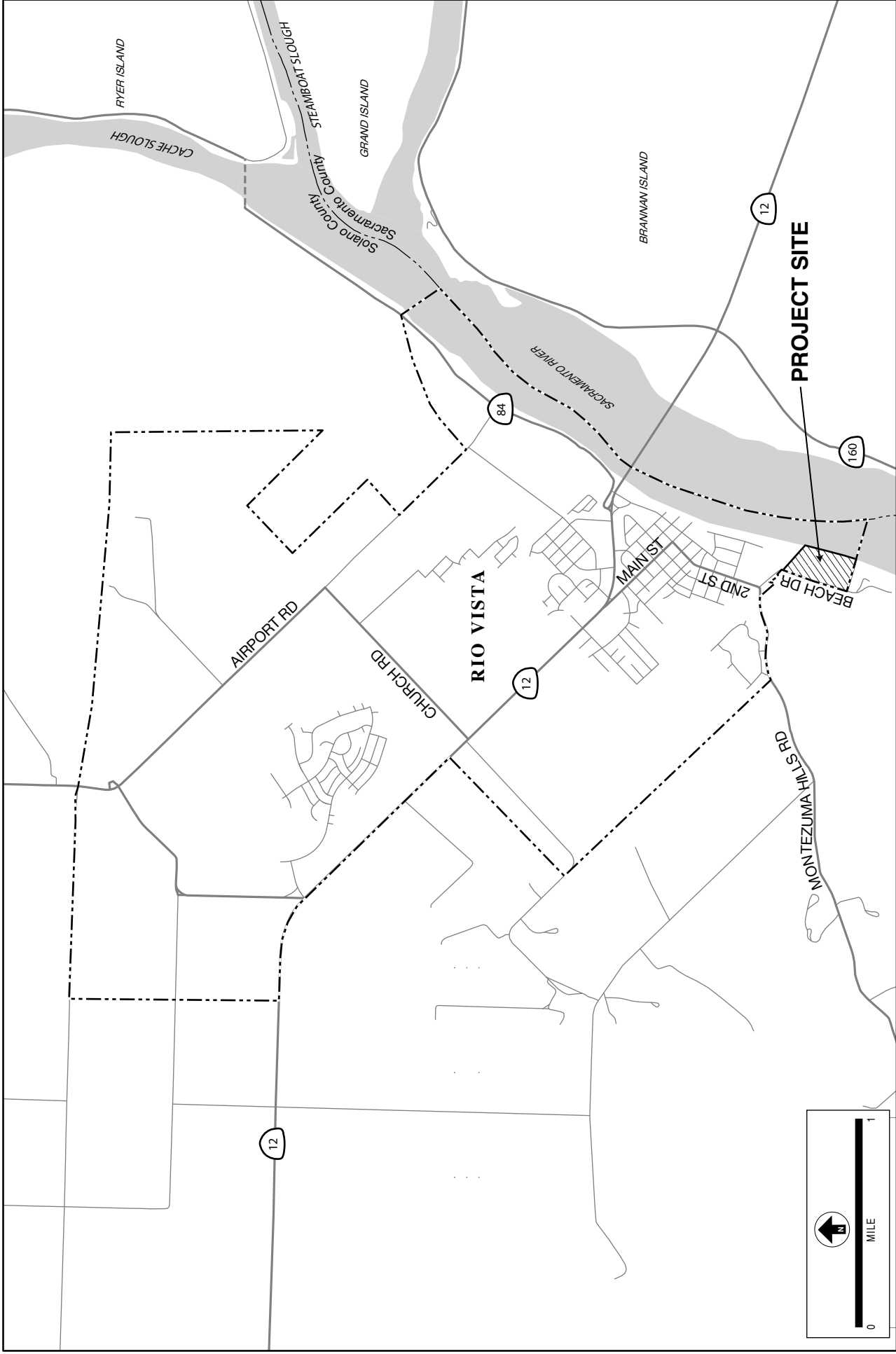
Notice of Scoping Meeting:

Pursuant to CEQA Guidelines section 15082, the Rio Vista Planning Commission will conduct a scoping meeting for the purpose of soliciting views of Solano County, responsible agencies, agencies with jurisdiction by law, trustee agencies, and interested parties requesting notice, as to the appropriate scope and content of the EIR. The scoping meeting will be held during the following regular meeting of the Planning Commission:

**Wednesday, February 10, 2010, 7:00 PM
City Council Chambers, One Main Street, Rio Vista, California**

Emi Theriault, Community Development Director
Telephone: (707) 374-2205
FAX: (707) 374-6763
E-mail: etheriault@ci.rio-vista.ca.us

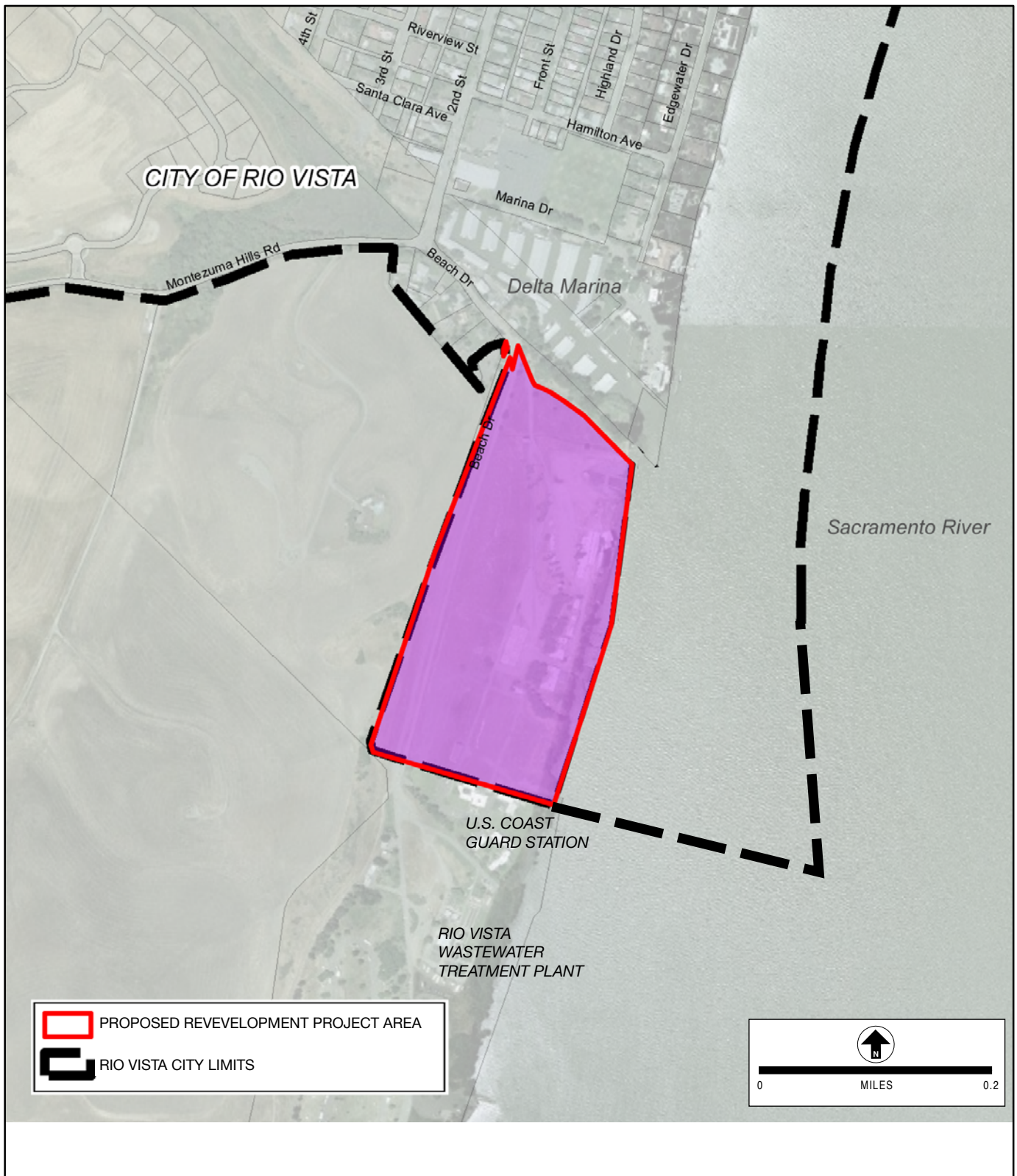
_____ Date



SOURCE: Wagstaff/MIG

Figure 1

PROJECT LOCATION



SOURCE: Rosenow Spevacek Group, Inc.

Figure 2

PROPOSED REDEVELOPMENT PROJECT AREA



February 11, 2010

Ms. Emi Theriault
City of Rio Vista
One Main Street
Rio Vista, CA 94571

Dear Ms. Theriault:

Subject: Rio Vista Army Reserve Center Redevelopment Plan, Notice of Preparation of an Environmental Impact Report, SCH #2010012028, Sacramento River, Solano County

The Department of Fish and Game (DFG) has reviewed the Notice of Preparation of an Environmental Impact Report (EIR) for the Rio Vista Army Reserve Center Redevelopment Plan (Plan). The proposed Plan is located on the west side of the Sacramento River and east of Beach Drive within the City of Rio Vista in Solano County. The 28.16-acre Plan area occupies a portion of the former Rio Vista Army Reserve Center and extends along approximately 1,600 feet of the Sacramento River. The former Army Base was used for maintenance, repair, and storage of shallow-draft river and harbor crafts from 1913 until 1989. It was formally closed in 1995 and later conveyed to the City of Rio Vista. The Rio Vista Army Base Reuse Plan was prepared in 1998 and proposed public-private redevelopment projects such as community and recreational facilities, low and moderate cost housing, and the establishment of the Rio Vista Estuarine Research Station. The proposed Plan will be effective for approximately 45 years; however, the EIR will assume full build-out within 20 years.

DFG is providing comments on the EIR as a Trustee Agency and Responsible Agency. As Trustee for the State's fish and wildlife resources, DFG has jurisdiction over the conservation, protection, and management of the fish, wildlife, native plants, and the habitat necessary for biologically sustainable populations of such species for the benefit and use by the people of California.

The EIR should provide a complete assessment (including but not limited to type, quantity and locations) of the habitats, flora and fauna within and adjacent to the project area, including endangered, threatened, and locally unique species and sensitive habitats. Sources should include, but not be limited to, positive occurrence databases, such as the California Natural Diversity Data Base (CNDDDB). Sources should be predictive in nature, discussing occurrence on the basis of habitat type and geographic area.

Several special-status fish, wildlife and plant species may occur within the proposed Plan area and/or surrounding areas. The Sacramento River supports the Delta smelt (*Hypomesus transpacificus*), which is designated as threatened under both the Federal Endangered Species Act (FESA) and California Endangered Species Act (CESA). The Plan applicant should consult the National Marine Fisheries Service to discuss take avoidance measures for federally-listed species. If suitable habitat is present within or adjacent to the proposed Plan area for special-status wildlife species, protocol-level wildlife surveys should be conducted. The EIR should state that protocol-level surveys will also be conducted prior to each future site-specific project. Two special-status raptor species occur within three miles of the proposed Plan area: the

Swainson's hawk (*Buteo swainsoni*), which is listed as threatened under CESA; and the western burrowing owl (*Athene cunicularia*), which is a State Species of Special Concern. DFG-recommended wildlife survey and monitoring protocols and guidelines are available at http://www.dfg.ca.gov/wildlife/nongame/survey_monitor.html. The San Joaquin spearscale (*Atriplex joaquiniana*) is a sensitive plant species listed as 1B by the California Native Plant Society, and is found in the vicinity of the proposed Plan area. Botanical surveys should be conducted throughout the blooming period for plants. Please refer to the recently revised DFG protocols for surveying and evaluating impacts to rare plants available at http://www.dfg.ca.gov/bioceodata/cnddb/pdfs/Protocols_for_Surveying_and_Evaluating_Impacts.pdf

The EIR should provide an assessment which includes the reasonably foreseeable direct and indirect changes (temporary and permanent) that may occur with implementation of the project. Rare, threatened and endangered species to be addressed should include all those which meet the California Environmental Quality Act (CEQA) definition (see CEQA Guidelines, Section 15380).

Please be advised that a CESA Permit must be obtained if the project has the potential to result in take of species of plants or animals listed under CESA, either during construction or over the life of the project. Issuance of a CESA Permit is subject to CEQA documentation; therefore, the CEQA document must specify impacts, mitigation measures, and a mitigation monitoring and reporting program. If the project will impact CESA-listed species, early consultation is encouraged, as significant modification to the project and mitigation measures may be required in order to obtain a CESA Permit.

For any activity that will divert or obstruct the natural flow, or change the bed, channel, or bank (which may include associated riparian resources) of a river or stream, or use material from a streambed, DFG may require a Lake and Streambed Alteration Agreement (LSAA), pursuant to Section 1600 et seq. of the Fish and Game Code, with the applicant. Issuance of an LSAA is subject to CEQA. DFG, as a responsible agency under CEQA, will consider the CEQA document for the project. The CEQA document should fully identify the potential impacts to the stream or riparian resources and provide adequate avoidance, mitigation, monitoring and reporting commitments for completion of the agreement. To obtain information about the LSAA notification process, please access our website at <http://www.dfg.ca.gov/habcon/1600/>; or to request a notification package, contact the Lake and Streambed Alteration Program at (707) 944-5520.

If you have any questions, please contact Ms. Brenda Blinn, Environmental Scientist, at (707) 944-5541; or Mr. Liam Davis, Habitat Conservation Supervisor, at (707) 944-5529.

Sincerely,



Charles Armor
Regional Manager
Bay Delta Region

cc: State Clearinghouse

Mr. Gary Stern – gary.stern@noaa.gov
National Marine Fisheries Service

February 18, 2010

Emi Theriault
Community Development Director
City of Rio Vista
One Main Street
Rio Vista, CA 94571-1842

The Solano Transportation Authority (STA) has received the NOTICE OF EIR PREPERATION – NOTICE OF EIR SCOPING MEETING for the Rio Vista Army Reserve Center Redevelopment Plan (the Notice). The Notice was dated January 15, 2010, and received by STA on January 19, 2010.

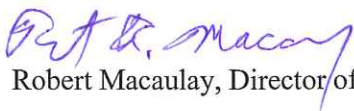
The Notice describes the project as development of 244,000 square feet of development on the 28-acre site, including a multi-purpose community center, a 150-room lodge with meeting and retail space, up to 9,000 square feet of restaurant space and an 110,000 square foot research center, as well as supporting capital improvements.

As the Congestion Management Agency for Solano County, STA offers the following comments on the Notice:

- The project site is not located on or adjacent to any Routes of Regional Significance identified in the STA's Comprehensive Transportation Plan (CTP). The anticipated maximum development of 244,000 square feet of building floor area on the project site could impact traffic on State Route (SR) 12, a Route of Regional Significance, which is located approximately 1 mile north of the project site. The STA therefore requests that the Draft Environmental Impact Report (EIR) for the project include an analysis of the project's impacts on SR 12.
- The STA has prepared a draft report on the potential relocation of the Rio Vista Bridge across the Sacramento River. The Draft EIR should acknowledge the existence of the bridge study and address how a relocation of the bridge might impact the project.
- The Draft EIR should include an analysis of the impact of transit and ride share facilities on the reduction of overall project trip generation. In addition, the project analysis should address the impact of the inclusion of facilities designed to attract bicycle commuters, such as adequate bicycle lockers and locker room facilities.

I look forward to reviewing the Draft EIR when it is released. Please contact me at (707) 424-6006 if you have any questions or need clarification regarding these comments.

Sincerely,



Robert Macaulay, Director of Planning

cc: STA Board Members
Daryl Halls, STA Executive Director
Mike Reagan, Solano County Supervisor
Jan Vick, Mayor, City of Rio Vista

APPENDIX 20.3:

CEQA STANDARDS FOR EIR ADEQUACY

According to section 15151 of the CEQA Guidelines, the standards for Adequacy of an EIR are as follows:

An EIR should be prepared with a sufficient degree of analysis to provide decision-makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection but for adequacy, completeness, and a good faith effort at full disclosure.

APPENDIX 20.4:

CEQA DEFINITION OF "MITIGATION"

According to section 15370 of the CEQA Guidelines, the term "mitigation" includes:

- (a) Avoiding the impact altogether by not taking a certain action or parts of an action.
- (b) Minimizing impacts by limiting the degree of magnitude of the action and its implementation.
- (c) Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment.
- (d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- (e) Compensating for the impacts by replacing or providing substitute resources or environments.

APPENDIX 20.5 EIR AUTHORS

CITY OF RIO VISTA

Hector De La Rosa, City Manager
Emi Theriault, AICP, Community Development Director

CONSULTANTS TO THE CITY OF RIO VISTA

ROSENOW, SPEVACEK GROUP, INC.
Redevelopment Consultants

Jim Simon
Tara Howard

WAGSTAFF/MIG
Urban and Environmental Planners/CEQA Consultants

John Wagstaff, Principal-in-Charge
Ricardo Bressanutti, AICP, LEED AP, Senior Contract Planner
Ray Pendro, Senior Planner
Nicole Lewis, Planner
Steve Ridone, Project Associate

RT DESIGN
Graphics

Ron Teitel, Graphic Designer

APPENDIX 20.6

**ARMY AND SHPO CORRESPONDENCE
REGARDING HISTORIC RESOURCES**



DEPARTMENT OF THE ARMY
HEADQUARTERS, I CORPS AND FORT LEWIS
BOX 339600
FORT LEWIS, WASHINGTON 98433-9600

July 9, 1997

REPLY TO
ATTENTION OF:

Public Works

RECEIVED

JUL 14 1997

OHP

Ms. Cheryl Widell
State Historic Preservation Officer
P.O. Box 942896
Sacramento, California 94296-0001

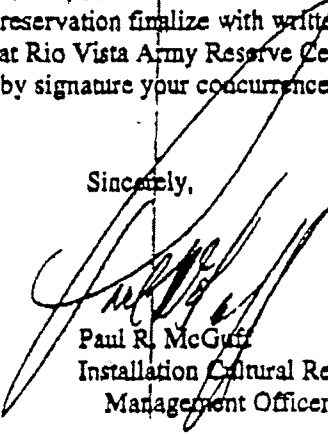
Reference: Rio Vista Army Reserve Center, National Register Determination
Log Number: USA940325A

Dear Ms. Widell:

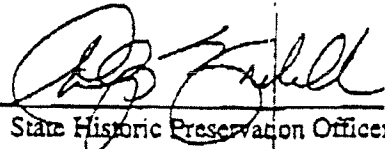
On April 14, I wrote you with an agency determination that there are no buildings at Rio Vista Army Reserve Center that individually or collectively meet the eligibility requirements for the National Register of Historic Places. This determination was contrary to the recommendation of JRP Historical Services, a firm that studied the facility for us under contract with the Sacramento District Army Corps of Engineers.

On Monday, June 16, you visited the Rio Vista Army Reserve Center with me to examine buildings. At the conclusion of the visit you indicated that you concurred with the Army's determination of no properties for the Rio Vista Army Reserve Center. On June 20, I faxed a note to Hans Kreuzberg in which I made a request that the California Office of Historic Preservation finalize with written comment the National Register of Historic Places status of buildings at Rio Vista Army Reserve Center. I have prepared this letter to assist with that goal. Please indicate below by signature your concurrence with the Agency determination of no properties.

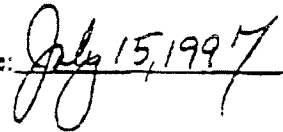
Sincerely,


Paul R. McGuff
Installation Cultural Resources
Management Officer

I have examined the evidence made available to me by the Army that pertains to the determination of National Register of Historic Places status of buildings and landscapes at the Rio Vista Army Reserve Center. Based upon review of these materials and a visit to that location I find that I concur with the Army's determination of no properties.

Signed: 
State Historic Preservation Officer

Date:





DEPARTMENT OF THE ARMY
HEADQUARTERS, I CORPS AND FORT LEWIS
BOX 339500
FORT LEWIS, WASHINGTON 98433-9500

RECEIVED
APR 16 1997
OHP

REPLY TO
ATTENTION OF:

April 14, 1997

Public Works

Ms. Cheryl Widell
California State Historic Preservation Officer
Office of Historic Preservation
Department of Parks and Recreation
P.O. Box 942896
Sacramento, California 94296-0001

Reference: USA940325A

Dear Ms. Widell:

On February 29, 1996, I wrote to you to indicate we would reevaluate government buildings at Rio Vista Army Reserve Center, Rio Vista, Solano County, California. We contracted through the Sacramento District, Army Corps of Engineers for that work. Enclosed you will find for review a draft report prepared by JRP Historical Consulting Services. While the JRP report has a professional appearance and contains valuable historical information, from Fort Lewis' perspective it did not successfully resolve several critical issues. I brought up these concerns with the Corps in a review of an earlier administrative draft. The Corps passed on the comments to JRP, and JRP made minor changes.

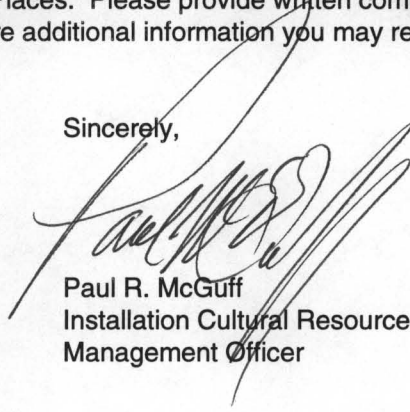
My unresolved concerns revolve around two principal issues: justification for the period of significance, and documentation of changes to buildings.

- The report identifies the period of significance as from 1919 to 1944. An end date of 1941 seems better justified because of changes in operations connected with the war. Another alternative is ca. 1919 to 1944, but with two distinct phases: construction of the Sacramento River Flood Control Project and Army operations related to the war effort.
- The period between 1923 and 1929 is central to either analysis. We needed to know how much of this building complex is still present.
- The building-by-building physical description is generally weak, with little or no analysis based on construction features and characteristics. Our minimal expectations for a description of each building included a discussion of overall size and proportion; roof line--height, angle, eaves treatment; siding--type, orientation, width; windows--size, sash, proportion, placement, trim; and, foundation.
- The report lacks a careful assessment of integrity. How much change and when? If changes date to a later period, then they may more nearly represent that period than the original. Is a later period relevant to the historic significance suggested?

JRP has provided no convincing argument for a high level of integrity. In fact there is evidence of changes which the report glosses over or omits. Nor has JRP argued successfully for significance of the built environment at Rio Vista. There is no question that something of historical note did occur at this place in the 1920s and 30s, yet the remaining 1940s and post-1940 altered building stock cannot reasonably be interpreted as strongly evocative of the pre-World War II events. Alternatively, we see no acceptable argument that there are any post-1940 events significant enough to evoke National Register of Historic Places consideration.

Based on a consideration of all available information, the Army determination is that there are no buildings at Rio Vista Army Reserve Center that individually or collectively meet the eligibility requirements for listing on the National Register of Historic Places. Please provide written comment to me within 30-days. Should you have any questions or desire additional information you may reach me by telephone at 206/967-5337.

Sincerely,

A handwritten signature in black ink, appearing to read "Paul R. McGuff", is written over the typed name and title.

Paul R. McGuff
Installation Cultural Resource
Management Officer

Enclosure

Copy Furnished: Sacramento District



DEPARTMENT OF THE ARMY
HEADQUARTERS, I CORPS AND FORT LEWIS
BOX 339500
FORT LEWIS, WASHINGTON 98433-9500

SECRET
MAR 5 1996

REPLY TO
ATTENTION OF:

February 29, 1996

USA 9403 25A

Public Works

Ms. Cheryl Widell
California State Historic Preservation Officer
Office of Historic Preservation
Department of Parks and Recreation
P.O. Box 942896
Sacramento, California 94296-0001

cc

See
our attached
letter in
back.

Dear Ms. Widell:

In previous coordination with Fort Lewis your office concurred with our determination that no building at Rio Vista meets the criteria for nomination to the National Register of Historic Places. I enclose correspondence from my files related to this determination. The original agency determination was based in large part upon information in our real property records that indicated all of the buildings at Rio Vista had original construction dates after 1950. Now I have map and text information available that will cause us to reevaluate our original determination. The purpose of this letter is to inform you of this new information and put forth our plans to resolve conflict brought about by the discovery of new information on the possible age of buildings at our Rio Vista facility.

Here is the new information. There was a military presence at Rio Vista by 1913. A report of that year on the dredge tender Rio Vista and construction for it indicates the Army Engineers built a 120 foot by 44 foot wharf and placed a 56 foot by 26 foot storehouse on that wharf at the town of Rio Vista. A history of the Sacramento District between 1929 and 1973 also mentions this 1913 construction. In 1910, a commission recommended a comprehensive plan prepared by the Sacramento District that suggested measures for improved navigation and flood control on the Sacramento and San Joaquin rivers. Congress didn't approve the whole plan at once but one of the earliest parts approved was the facility at Rio Vista to service work boats operating throughout the area. These work boats had removed more than 24,000,000 cubic yards of fill and debris from the Sacramento river by the end of June 1917. Frank E. Frey of the Sacramento District was in charge of the sub-district at Rio Vista from 1919 to 1935. He transferred in February 1936 to take charge of the job to create Treasure Island in San Francisco Bay for use as the site of the Golden Gate International Exposition.

A 1923 map indicates the 1913 buildings are gone by that date. This map shows two buildings and a wharf present on the site. The wharf of that date was only 50 foot long. The buildings are separate from the wharf. One of them is a 75 foot by 28 foot shop. The other is a lumber shed 95 foot long by 15 foot wide.

A later map, 1940 or 1941, indicates 11 buildings on site along with two wharves. Buildings on this map are not to scale, though from orientation and general massing it seems likely that the buildings present in 1923 are still there relatively unchanged at the start of World War II. Nine new buildings and an additional wharf were built on the site sometime between 1923 and 1940 or 1941.

A map from 1944 shows eight of the 11 buildings remain from the 1940 or 1941 period. It indicates that the 1923 buildings, if present are buried within changed buildings because the footprints of buildings at similar locations and with similar orientations to the 1923 buildings are much larger. It seems possible that the lumber shed has been split in half and moved to the south as two parallel wings attached to a larger building.

By 1953, only six of the 11 buildings remain from the 1940 or 1941 period. There are still buildings present at the correct location and with similar orientations to the 1923 buildings. However, buildings at these locations are again changed in their footprint.

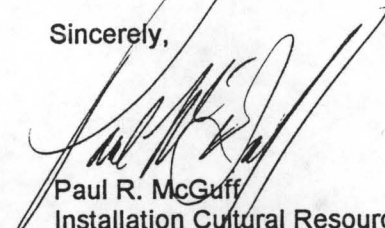
In 1962, six of the 11 buildings remain from those shown on the 1940 or 1941 period map. Two buildings are at the correct location and with similar orientations to the 1923 buildings.

From the map and text information available to me today, it seems possible that two buildings constructed between 1913 and 1923, and shown on a 1923 map, may still exist at the Rio Vista facility. Four other buildings constructed between 1923 and 1940 or 1941 may still exist at the Rio Vista facility. All other buildings seem to date to the World War II period or afterwards. If the two early buildings exist they are camouflaged within the larger buildings that are present on the site today, and thus are considerably altered from their original condition. Building S-7, at the site of the 1923 shop, has dimensions of 75 foot by 45 foot: the 1923 building measured 75 foot by 28 foot. Building S-11, at the site of the 1923 lumber shed has dimensions of 190 feet by 60 feet: the 1923 building measured 95 feet by 15 feet. The four post-1923 and pre World War II buildings may be relatively intact since their footprints remain approximately the same through time.

I regret I could not provide you this information when, on March 22, 1994, we made an agency determination of no properties at Rio Vista. However, with new information, the results of my analysis are in question. The time of construction of the pre-World War II buildings that may remain at Rio Vista coincides with a period of delta reclamation important to the history of California and the west. Therefore, despite changes over the last 50 years and apparent loss of integrity in the two oldest buildings, we have advised the Sacramento district Army Corps of Engineers to delay any actions that would affect the buildings until we secure the services of a qualified architectural historian to further evaluate the government buildings at Rio Vista.

I would like you to reconsider your original concurrence with our determination of no properties based on the information I provide with this letter. I request that you withhold your final opinion until that time we make a new agency eligibility determination on the buildings. Please provide comment within 30-days. Should you have any questions or desire additional information, feel free to contact me. You may reach me by telephone at 206/967-5337.

Sincerely,



Paul R. McGuff
Installation Cultural Resource
Management Officer

Enclosures

