# San Luis Reservoir State Recreation Area

## Draft Resource Management Plan / General Plan and Draft Environmental Impact Statement / Revised Draft Environmental Impact Report

August 2012

**United States Department of the Interior**
**Bureau of Reclamation**
Mid-Pacific Region
South-Central California Area Office

RECLAMATION
*Managing Water in the West*

**California Department of Parks & Recreation**
Central Valley District

CALIFORNIA STATE PARKS SINCE 1864

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# San Luis Reservoir State Recreation Area

## Draft Resource Management Plan / General Plan and Draft Environmental Impact Statement / Revised Draft Environmental Impact Report

This document contains a joint Draft Resource Management Plan (RMP)/General Plan (GP) and Draft Environmental Impact Statement/Revised Draft Environmental Impact Report (Draft EIS/EIR) for the San Luis Reservoir State Recreation Area (SRA) and adjacent lands owned by the Bureau of Reclamation (Reclamation) and managed by the California Department of Parks and Recreation (also known as California State Parks, or CSP), California Department of Water Resources (DWR), and California Department of Fish and Game (DFG). This document also contains policies, in the form of goals and guidelines, that relate to the project area and a description of the desired future condition of project area lands and waters for recreation and resource use and management.

The purpose of the Draft EIS/EIR is to help Reclamation and CSP select a preferred alternative for implementing the RMP/GP. This document evaluates three action alternatives that provide different options for resource management and visitor use and education programs, ranging from limited new access and development (Alternative 2) to maximum new access and development (Alternative 4). Alternative 1, the No Action/No Project Alternative, is also evaluated.

This document was jointly prepared by Reclamation as the lead federal agency and CSP as the lead state agency to satisfy the requirements of both the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA).

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Public comments must be received by October 5, 2012.

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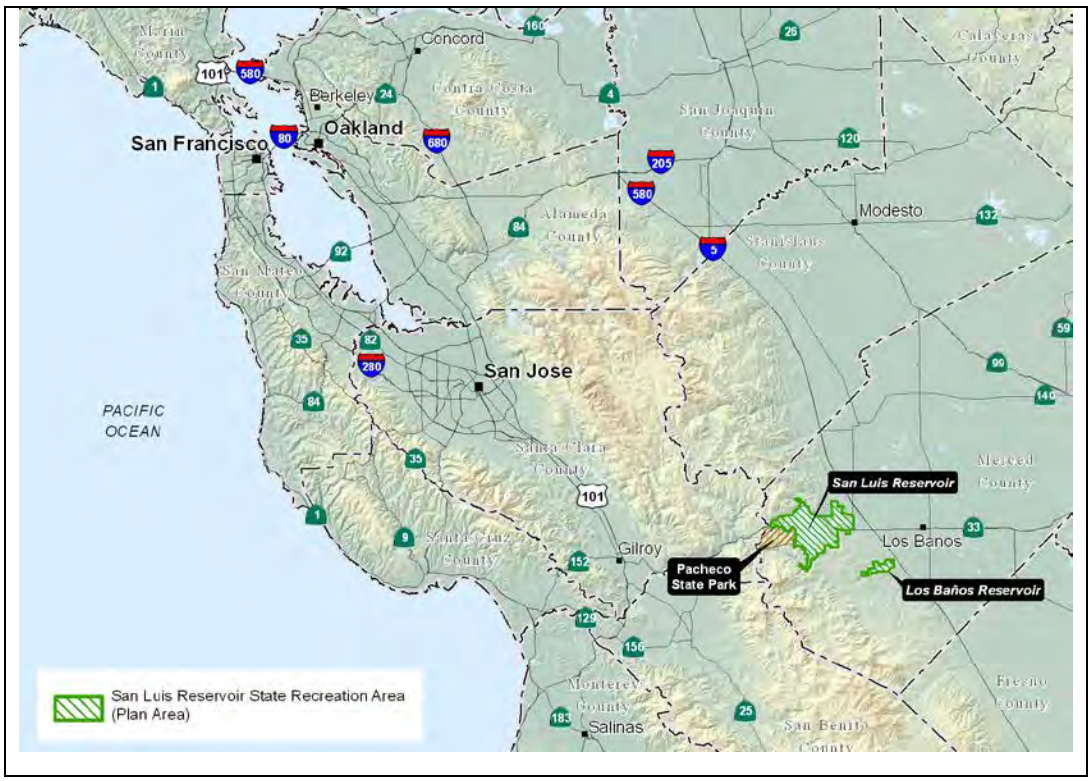
# Executive Summary

## Introduction

This Resource Management Plan (RMP)/General Plan (GP) has been prepared to set forth goals and guidelines for management of the San Luis Reservoir State Recreation Area (SRA) and adjacent lands (known as the Plan Area) for the next 25 years. The Plan Area consists of two geographically separate areas totaling over 27,000 acres in the vicinity of Los Banos, California. The Plan Area includes the water surfaces of San Luis Reservoir, O'Neill Forebay, and Los Banos Creek Reservoir, as well as adjacent recreation lands. The California Department of Parks and Recreation (also known as California State Parks, or CSP), California Department of Water Resources (DWR), and California Department of Fish and Game (DFG) manage the Plan Area lands, which are owned by the Bureau of Reclamation (Reclamation). Map ES-1 illustrates the location of the Plan Area, which is adjacent to Pacheco State Park and straddles State Route (SR) 152 between U.S. Highway 101 (U.S. 101) and Interstate 5 (I-5).




**Map ES-1 Vicinity Map: San Luis Reservoir State Recreation Area**

San Luis Reservoir, O'Neill Forebay, and Los Banos Creek Reservoir are part of the system of reservoirs, aqueducts, power plants, and pumping stations operated

under the California State Water Project (SWP) and Central Valley Project (CVP). Reclamation constructed the facilities and DWR operates the water storage and delivery components. CSP was given the responsibility to plan, design, construct, maintain, and operate the recreation areas surrounding the reservoirs.

This RMP/GP (hereafter the Plan) has been developed through an agreement between Reclamation and CSP to provide coordinated direction for recreation and resource management of the Plan Area lands while continuing to serve the primary purpose of water storage and distribution and power generation. To comply with the requirements of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA), this document also contains a Draft Environmental Impact Statement/Revised Draft Environmental Impact Report (Draft EIS/EIR) to analyze the potential effects of implementing the Plan.

## Background

Los Banos Creek Reservoir was completed in 1965, and San Luis Reservoir was completed in 1967. Planning for San Luis Reservoir, O'Neill Forebay, and Los Banos Creek Reservoir was developed in a series of documents dating from 1962 to 1985 (DWR 1962, 1965, 1971; CSP 1966, 1971, 1985; Department of Navigation and Ocean Development 1972). The Plan will supersede the management direction provided in these earlier documents.

The Plan was initially released with a Draft EIR on April 27, 2005. This Plan is being reissued with a Draft EIS/Revised Draft EIR for NEPA and CEQA compliance. Reclamation is the NEPA lead federal agency and CSP is the CEQA lead state agency for implementation of the Plan. Baseline data and existing conditions for the Plan Area have been updated, and the analysis of potential environmental impacts resulting from Plan implementation has been updated and revised in accordance with NEPA as well as CEQA.

Lands managed by CSP for recreation are part of the State Park system and comprise the San Luis Reservoir SRA. Additional lands in the Plan Area were set aside by Reclamation for DFG to manage for wildlife preservation and mitigation. These lands, known as the O'Neill Forebay Wildlife Area and San Luis Wildlife Area, are on Reclamation land but are not part of the SRA. To the north of San Luis Reservoir and west of O'Neill Forebay are the Upper and Lower Cottonwood wildlife areas, owned by DFG and therefore not part of the Plan Area.

The SRA and wildlife areas within the Plan Area receive thousands of visitors each year who participate in a variety of land- and water-based recreational activities, including hiking, biking, nature study, picnicking, windsurfing, fishing, boating, personal watercraft use, and camping.

## Purpose and Need

Planning for San Luis Reservoir, O'Neill Forebay, and Los Banos Creek Reservoir was developed in a series of documents that are now several decades old. An updated Plan is needed to account for changes in the physical and regulatory environment as well as projected population growth in the state that may affect the level of recreational services and facilities that are needed. Additionally, a Plan for managing resources based on currently available information for natural and cultural resources and the associated regulatory framework is necessary for the long-term stewardship of these resources. Upon approval, this Plan will supersede the previous plans. The new Plan will have a planning horizon of 25 years.

The purposes of the Plan are as follows:

- Provide for the orderly use, development, and management of Plan Area lands and waters for recreation and other uses;
- Provide for the protection and management of natural, recreational, aesthetic, and cultural resources and for safety and security measures for the protection of visitors and resources;
- Ensure that management of quality recreational facilities and opportunities is compatible with other environmental resources and that management planning is based on expressed public need and the ability of the land and water resources to accommodate improved facilities and increased visitor use; and
- Propose uses that are compatible with Reclamation's core mission of delivering water and generating power.

The purpose of the Draft EIS/EIR is to assist Reclamation and CSP in finalizing a decision on a preferred alternative to implement the Plan.

## Approach to the Plan

This Plan provides an overview of existing conditions, a summary of opportunities and constraints, a plan for the future use and management of the Plan Area, and the associated environmental analysis pursuant to NEPA and CEQA. The Plan has been prepared in accordance with Reclamation's *Resource Management Plan Guidebook, Planning for the Future (2003)* and CSP's *California State Parks Planning Handbook (2010)*.

The analysis of existing conditions was undertaken as part of the planning process using the collective knowledge of Reclamation, CSP, DWR, and DFG staff research of the physical and operational conditions and visitor activity. These agencies and other interested agencies, along with landowners, recreational users, and other individuals, all provided information about the history and conditions at the Plan Area.

Agency staff participated in several meetings and workshops to identify and develop strategies that address the specific issues for management at the Plan Area.

Management policies in the form of goals and guidelines, management zones for land and water areas, and Plan alternatives were developed based on the collected information and stakeholder input.

## Public Involvement

A public workshop, scoping meetings, and a visitor survey were used to inform the public about the planning process and solicit ideas for Plan Area enhancements and visions for its future. Public agencies in the region also provided feedback through the scoping process and attendance at workshops.

A complete list of the issues brought up at the public meetings and the comments received from the public are located in Chapter 6. The meeting summaries, stakeholder comments, and other public outreach materials are provided in Appendix C.

## Summary of the Plan

The Plan sets forth Plan Area-wide management goals and guidelines that will be used to implement Plan Area use and future actions and to measure Plan success. The following goals and guidelines, which fall under five broad planning areas with relevant issue areas for each category, are discussed in Section 4.2:

### Resource Management

- Scenic/Aesthetic
- Cultural/Historic
- Climate
- Hydrology/Water Quality
- Vegetation
- Wildlife
- Aquatic Invasive Species

### Visitor Experience, Interpretation and Education

- Visitor Uses/Opportunities and Facilities
- Trails
- Interpretation and Education
- Concession Opportunities

### Local and Regional Planning

- Interagency Cooperation
- Regional Plans

- Population and Demographics
- Linkages

### Infrastructure and Operations

- Plan Area Access and Circulation
- Management Agreements
- Staffing and Facilities
- Utilities
- Sustainability and Renewable Energy

### Water Operations

- Water Elevation Fluctuations
- Restriction of Access to Dams and Power Facilities

This Plan also sets forth management zones that provide an overall direction for managing different lands and waters within the Plan Area while recognizing the uniqueness and diversity of the landscape and surface waters. The zones are based on existing conditions and resources, recreation uses, and landscape character. Section 4.3 presents a summary of existing features, purpose and intent, resource goals, and land use for each zone. Six basic management zones are used to characterize the waters and lands of the Plan Area:

### Water-Based Management Zones

- Rural Natural (RN)
- Rural Developed (RD)
- Suburban (S)

### Land-Based Management Zones

- Administration and Operations (AO)
- Frontcountry (FC)
- Backcountry (BC)

### Alternatives

Based on the Plan policies and the management zones, three action alternatives were developed to implement the Plan, all reflecting the need to protect and preserve natural and cultural resources throughout the Plan Area. The following alternatives are described in Section 4.4:

- Alternative 1, the No Action/No Project Alternative, would continue the management direction set by previous planning documents as well as ongoing programs initiated under existing legislation and regulations. Alternative 1 is intended to reflect current and expected future conditions in the Plan Area should the proposed Plan not be implemented.
- Alternative 2: Limited new access and development. Alternative 2 would include the fewest physical additions and visitor use modifications among the action alternatives but would implement an array of resource

management actions. Visitor access would remain the same as under Alternative 1.

- Alternative 3: Moderate new access and development. Alternative 3 balances the need for future visitor facilities with resource management. This alternative anticipates increased future visitation by providing for physical additions and visitor use modifications but concentrates them in and around existing developed areas. Compared to Alternative 2, Alternative 3 would provide for the same level of resource management and a higher level of visitor access.
- Alternative 4: Maximum new access and development. Alternative 4 would provide for the most physical additions and visitor use modifications among the action alternatives, some in areas that are currently undeveloped. Compared to the other action alternatives, Alternative 4 would provide for the same level of resource management and the highest level of visitor access.

Reclamation and CSP will select a preferred alternative that best reflects the stated purpose and vision, public interests, agencies' relevant rules and regulations, and environmental resource protection in all planning areas. The preferred alternative will provide Plan Area-wide goals and guidelines while balancing current and future needs to ensure Plan longevity.

Recognizing that the Plan Area's carrying capacity is based on many factors (including data collection, Plan Area purpose, and desired future conditions) a summary of the existing visitor use and facilities is provided in Section 4.5. Additionally, a series of quality indicators were developed to formulate a framework for monitoring carrying capacity for the planning areas outlined in the Plan. From these, managers can use adaptive management strategies to determine when alternative management actions are needed to meet the desired conditions.

## Environmental Analysis

One of the primary differences between NEPA and CEQA is the way significance is determined and discussed in environmental documents. Under NEPA, significance is used to determine whether an EIS or some lower level of documentation will be required. NEPA requires preparation of an EIS when the proposed federal action (project) as a whole has the potential to "significantly affect the quality of the human environment." The determination of significance is based on context and intensity (40 CFR §1508.27). Some impacts determined to be significant under CEQA may not be of sufficient magnitude to be determined significant under NEPA. Under NEPA, once a decision to prepare an EIS is made, it is the magnitude of the impact that is evaluated, and no judgment of its significance is deemed important for the text. NEPA does not require that a determination of significance for individual resources be stated in an environmental document. Once the proposal itself is considered as a whole to have significant effects, all of its specific effects on the environment (whether or

not "significant") must be considered, and mitigation measures must be developed where it is feasible to do so (40 CFR §1502.14(f), 1502.16(h), 1508.14, and the Council on Environmental Quality's 40 Most Asked Questions #19a[1]).

CEQA, on the other hand, does require an identification of each "significant effect on the environment" resulting from the project and ways to mitigate each significant effect. A significant effect on any environmental resource triggers the preparation of an EIR. Each significant effect on the environment must be disclosed in the EIR and mitigated, if feasible. In addition, the CEQA Guidelines list a number of mandatory findings of significance that also require the preparation of an EIR. There are no types of actions under NEPA that parallel the findings of mandatory significance in CEQA.

Chapter 5 describes the impacts of each action alternative as well as the No Action/No Project Alternative. Implementation of specified goals and guidelines from Section 4.2 as well as additional avoidance, minimization, and mitigation measures, where appropriate, would serve to reduce the severity of each impact.

For the purposes of this document only, impact magnitude (NEPA) and thresholds of significance (CEQA) are expressed in the following categories:

- Beneficial Impact: This impact would occur when an activity could result in the elimination, reduction, or resolution of a conflict.
- No Impact: This impact would occur if an activity would result in no change compared to the existing condition.
- Minor Adverse Impact: This impact would occur if an activity would result in a detectable impact that would lead to deterioration or a conflict. It is equivalent to a less-than-significant impact under CEQA.
- Major Adverse Impact: This impact would occur if an activity would result in a dramatic deterioration or a severe conflict. A major adverse impact can be long-term and substantial. It is equivalent to a significant impact under CEQA.

The Draft EIS/EIR prepared for the Plan is programmatic in scope and does not contain project-specific analysis for facilities proposed in the Plan. Specific projects would undergo subsequent NEPA/CEQA review in the future as appropriate. Project-specific mitigation measures may be implemented where necessary based on further review.

Environmental effects to agricultural and forest resources, geology and soils, hazards and hazardous materials, land use and planning, Indian Trust Assets and Indian Sacred Sites, energy and mineral resources, noise, socioeconomics, and environmental justice were found not to be significant, as discussed further in Section 5.2.4.

[1] http://ceq.hss.doe.gov/NEPA/regs/40/40p3.htm

The potential impacts of each alternative are summarized below and listed in Table ES-1. Section 5.4 provides a detailed description of potential impacts and mitigation measures.

- **Alternative 1**, the No Action/No Project Alternative, would not provide for future increases or changes in visitation or implement any of the focused management plans that are part of the action alternatives. Impacts to biological resources, cultural resources, recreation resources, and utilities and emergency services could range from minor to major. Under Alternative 1, minor impacts could occur to hydrology and floodplain/water quality and air quality. This alternative would have no impacts on scenic/aesthetic resources or circulation.
- **Alternative 2**, the limited new access and development alternative, would provide the least overall new visitor access and recreation facilities of the action alternatives, but would also result in the least impacts of the action alternatives. Alternative 2 could result in minor to major impacts to hydrology and floodplain/water quality, biological resources, and cultural resources; and minor impacts or no impacts to air quality, scenic/aesthetic resources, recreation resources, circulation, and utilities and emergency services. All major adverse impacts would be reduced to minor levels after mitigation.
- **Alternative 3**, the moderate new access and development alternative, would result in greater impacts than Alternative 2 but less than Alternative 4. Alternative 3 could result in minor to major impacts to hydrology and floodplain/water quality, biological resources, cultural resources, circulation, and utilities and emergency services. Minor impacts or no impacts are anticipated to occur to air quality, scenic/aesthetic resources, and recreation resources. The addition of new activities and facilities with Alternative 3 would be a beneficial impact to recreation resources. All major adverse impacts would be reduced to minor levels after mitigation.
- **Alternative 4**, the maximum new access and development alternative, would result in the greatest impacts of the four alternatives. Alternative 4 could result in minor to major impacts to hydrology and floodplain/water quality, air quality, biological resources, cultural resources, circulation, and utilities and emergency services; and minor impacts to scenic/aesthetic resources and recreation resources. All major adverse impacts would be reduced to minor levels after mitigation.

**Table ES-1**
**Impacts Summary**

| Impact | Alternative 1 | Alternative 2 | | Alternative 3 | | Alternative 4 | |
|---|---|---|---|---|---|---|---|
| | Impact Magnitude | Impact Magnitude | Impact After Mit. | Impact Magnitude | Impact After Mit. | Impact Magnitude | Impact After Mit. |
| **HYDROLOGY AND FLOODPLAIN/WATER QUALITY (Section 5.4.1)** | | | | | | | |
| Erosion, siltation, turbidity, pollutant release, or additional runoff from facilities maintenance and construction | Minor | Minor to Major | Minor | Minor to Major | Minor | Minor to Major | Minor |
| Erosion, siltation, turbidity, pollutant release, or additional runoff from trail and road use, maintenance, and construction | Minor | Minor | Minor | Minor | Minor | Minor to Major | Minor |
| Motorized vessel emissions of fuel or other pollutants | Minor | Minor | NA | Minor | NA | Minor | NA |
| Contaminants from human use (including body contact with reservoir water) and waste disposal | Minor | Minor | Minor | Minor | Minor | Minor | Minor |
| Reservoir fluctuations from climate change | No Impact | No Impact | NA | No Impact | NA | No Impact | NA |
| **AIR QUALITY (Section 5.4.2)** | | | | | | | |
| Criteria pollutant emissions from motorized vehicles and vessels | Minor | Minor | NA | Minor | NA | Minor | NA |
| Dust emissions from motorized vehicles, construction, and recreation | Minor | Minor | Minor | Minor | Minor | Minor to Major | Minor |
| Short-term combustion emissions from prescribed burning or wildland fires | Minor | Minor | NA | Minor | NA | Minor | NA |
| Greenhouse gas emissions from maintenance and construction equipment and motorized vehicle and watercraft use | Minor | Minor | NA | Minor | NA | Minor | NA |

**Table ES-1**
**Impacts Summary**

| Impact | Alternative 1 | Alternative 2 | | Alternative 3 | | Alternative 4 | |
|---|---|---|---|---|---|---|---|
| | Impact Magnitude | Impact Magnitude | Impact After Mit. | Impact Magnitude | Impact After Mit. | Impact Magnitude | Impact After Mit. |
| **BIOLOGICAL RESOURCES (Section 5.4.3)** | | | | | | | |
| Loss of or disturbance to trees, sensitive habitat, or special-status species; introduction of invasive species; reduction in habitat quality; or habitat fragmentation related to facility maintenance, expansion, and development | | | | | | | |
| Vegetation and Natural Communities | Minor | Minor | Minor | Minor to Major | Minor | Minor to Major | Minor |
| Wildlife | Minor | Minor | Minor | Minor | Minor | Minor to Major | Minor |
| Reduction in habitat quality caused by human disturbance, including increased presence, noise, and light; disturbance to vegetation that provides habitat for special-status species; or introduction of invasive species, including invasive mussels, related to camping, boat use, and day use | Minor | Minor to Major | Minor | Minor to Major | Minor | Minor to Major | Minor |
| Disturbance of habitat, wildlife, or movement corridors; injury or mortality to individuals by vehicle strikes; or disturbance of native vegetation and potential introduction of non-native or invasive species from trail and road use and construction | | | | | | | |
| Vegetation and Natural Communities | Minor | Minor to Major | Minor | Minor to Major | Minor | Minor to Major | Minor |
| Wildlife | Minor | Minor to Major | Minor | Minor to Major | Minor | Minor to Major | Minor |

**Table ES-1**
**Impacts Summary**

| Impact | Alternative 1 | Alternative 2 | | Alternative 3 | | Alternative 4 | |
|---|---|---|---|---|---|---|---|
| | Impact Magnitude | Impact Magnitude | Impact After Mit. | Impact Magnitude | Impact After Mit. | Impact Magnitude | Impact After Mit. |
| Disturbance to plant or wildlife species from resource management, including prescribed burns | Minor to Major | Minor to Major | Minor | Minor to Major | Minor | Minor to Major | Minor |
| Reduced wetland and species habitat, increased stress on fisheries, and increased potential for invasive species infestations from climate change | No Impact | No Impact | NA | No Impact | NA | No Impact | NA |
| **CULTURAL RESOURCES (Section 5.4.4)** | | | | | | | |
| Unauthorized collection and vandalism at cultural resource sites from visitor access and use | Minor to Major | Minor to Major | Minor | Minor to Major | Minor | Minor to Major | Minor |
| Exposure or inadvertent disturbance/destruction of cultural resources from ground-disturbing activities associated with facility construction or improvements | No Impact | Minor to Major | Minor | Minor to Major | Minor | Minor to Major | Minor |
| Exposure or inadvertent disturbance/destruction of cultural resources from prescribed burns and vegetation management | Minor to Major | Minor to Major | Minor | Minor to Major | Minor | Minor to Major | Minor |
| Exposure or inadvertent disturbance/destruction of cultural resources from climate change | No Impact | No Impact | NA | No Impact | NA | No Impact | NA |
| **SCENIC/AESTHETIC RESOURCES (Section 5.4.5)** | | | | | | | |
| Reduction of scenic vistas, damage to scenic resources, or light or glare from facilities expansion and construction | No Impact | Minor | Minor | Minor | Minor | Minor | Minor |
| Reduction in scenic quality from climate change related loss of vegetation or decrease in reservoir levels | No Impact | No Impact | NA | No Impact | NA | No Impact | NA |

**Table ES-1**
**Impacts Summary**

| Impact | Alternative 1 | Alternative 2 | | Alternative 3 | | Alternative 4 | |
|---|---|---|---|---|---|---|---|
| | Impact Magnitude | Impact Magnitude | Impact After Mit. | Impact Magnitude | Impact After Mit. | Impact Magnitude | Impact After Mit. |
| **RECREATION RESOURCES (Section 5.4.6)** | | | | | | | |
| Fugitive dust and noise, disruption to visitor circulation, and restriction to visitor areas from temporary construction activities at camping and recreation facilities | Minor | Minor | NA | Minor | NA | Minor | NA |
| Addition of new activities and facilities | Minor | No Impact | NA | Beneficial | NA | Minor | NA |
| Reduced recreation quality from management of boat density levels | Minor to Major | Minor | NA | Minor | NA | Minor | NA |
| Recreation access restrictions due to climate change related low reservoir levels or invasive species infestation | No Impact | No Impact | NA | No Impact | NA | No Impact | NA |
| **CIRCULATION (Section 5.4.7)** | | | | | | | |
| Increased traffic to, from, and within the Plan Area | No Impact | Minor | NA | Minor | NA | Minor | NA |
| Vehicle turning conflicts and other access issues at Plan Area access points | No Impact | Minor | NA | Minor | NA | Minor to Major | NA |
| Increased parking demand | No Impact | Minor | NA | Minor to Major | Minor | Minor to Major | Minor |
| **UTILITIES AND EMERGENCY SERVICES (Section 5.4.8)** | | | | | | | |
| Disruption to utility service or emergency services from facilities expansion and construction | No Impact | Minor | Minor | Minor to Major | Minor | Minor to Major | Minor |
| Increased demand for emergency services resulting from increased visitation | Minor to Major | Minor | Minor | Minor to Major | Minor | Minor to Major | Minor |

**Table ES-1**
**Impacts Summary**

| Impact | Alternative 1 | Alternative 2 | | Alternative 3 | | Alternative 4 | |
|---|---|---|---|---|---|---|---|
| | Impact Magnitude | Impact Magnitude | Impact After Mit. | Impact Magnitude | Impact After Mit. | Impact Magnitude | Impact After Mit. |
| GHG emissions from generation of water supply and electricity for Plan Area use | Minor | Minor | Minor | Minor | Minor | Minor | Minor |

Notes:

NA = Not applicable

Impact magnitudes are based on the impact criteria defined for each resource area in Section 5.4.

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## List of Abbreviations and Acronyms

| | |
|---|---|
| AADT | Average Annual Daily Trips |
| ABAG | Association of Bay Area Governments |
| ACH | Advisory Council on Historic Preservation |
| ADA | Americans with Disabilities Act |
| AO | Administration and Operations Zone |
| AQMD | Air Quality Management District |
| ASC | Agricultural Services Center |
| Authority | California High-Speed Rail Authority |
| BAAQMD | Bay Area Air Quality Management District |
| Basin Plan | Central Valley Region Water Quality Control Plan |
| BC | Backcountry Zone |
| BMP | Best Management Practice(s) |
| BP | Before Present |
| BRM | bedrock mortar |
| CAFE | Corporate Average Fuel Economy |
| CALFED | CALFED Bay-Delta Program |
| Cal Fire | California Department of Forestry and Fire Protection |
| Caltrans | California Department of Transportation |
| CAS | California Climate Adaptation Strategy |
| CCR | California Code of Regulations |
| CDEC | California Data Exchange |
| CEQ | Council on Environmental Quality |
| CEQA | California Environmental Quality Act |
| CESA | California Endangered Species Act |
| CFP | California Floristic Province |
| CFR | Code of Federal Regulations |
| CHRIS | California Historical Resources Information System |
| CNDDB | California Natural Diversity Database |
| CNPS | California Native Plant Society |
| COLD | Cold Freshwater Habitat |
| Commission | State Park and Recreation Commission |

| | |
|---|---|
| CORP | California Outdoor Recreation Plan |
| CRHR | California Register of Historical Resources |
| CSP | California Department of Parks and Recreation (also known as California State Parks) |
| CVP | Central Valley Project |
| DAF | Dissolved Air Flotation |
| DFG | California Department of Fish and Game |
| DMC | Delta-Mendota Canal |
| DO | Dissolved Oxygen |
| Draft EIS/EIR | Draft Environmental Impact Statement/Revised Draft Environmental Impact Report for the San Luis Reservoir State Recreation Area Draft Resource Management Plan/General Plan |
| DRI | Desert Research Institute |
| DWR | California Department of Water Resources |
| EA | Environmental Assessment |
| EIR | Environmental Impact Report |
| EIS | Environmental Impact Statement |
| ESA | federal Endangered Species Act |
| ESRP | Endangered Species Recovery Program |
| ESU | evolutionarily significant unit |
| FC | Frontcountry Zone |
| FEMA | Federal Emergency Management Agency |
| FONSI | Finding of No Significant Impact |
| FWCA | Fish and Wildlife Coordination Act |
| FY | fiscal year |
| Gilroy General Plan | *Gilroy 2002-2020 General Plan* |
| gpd | gallon(s) per day |
| GEA | Grasslands Ecological Area |
| GIS | Geographic information systems |
| GP | General Plan |
| HCP | Habitat Conservation Plan |
| Hollister General Plan | *Hollister General Plan 1995-2010* |
| I- | Interstate |

| | |
|---|---|
| IPM | Integrated Pest Management |
| IRRS | Interregional Road System |
| ITR | International Turbine Research, Inc. |
| KFPACT | Kit Fox Planning and Conservation Team |
| km | Kilometer |
| kWh | kilowatt hours |
| LAC | Limits of Acceptable Change |
| LAFCO | Local Agency Formation Commission |
| LEED | Leadership in Energy and Environmental Design |
| LOS | Level of Service |
| Los Banos General Plan | *The City of Los Banos General Plan* |
| LZ | Leased Zone |
| µS/cm | microSiemens per centimeter |
| MARTS | Merced Area Regional Transit System |
| MCAG | Merced County Association of Governments |
| MCL | maximum contaminant level |
| Merced County General Plan | *Merced County Year 2000 General Plan* |
| mg/L | milligram(s) per liter |
| MOA | Memorandum of Agreement |
| MOU | Memorandum of Understanding |
| Mpg | miles(s) per gallon |
| mph | mile(s) per hour |
| MMRP | Mitigation Monitoring and Reporting Program |
| MPN | most probable number |
| MTBE | methyl tertiary butyl ether |
| NAGPRA | Native American Graves Protection and Repatriation Act |
| NAHC | Native American Heritage Commission |
| NCCP | Natural Communities Conservation Program |
| NEPA | National Environmental Policy Act |
| NHPA | National Historic Preservation Act |
| NHTSA | National Highway Traffic Safety Association |
| NOA | Notice of Availability |

| | |
|---|---|
| NOI | Notice of Intent |
| NOP | Notice of Preparation |
| NOx | oxides of nitrogen |
| NPDES | National Pollutant Discharge Elimination System |
| NPS | National Park Service |
| NRHP | National Register of Historic Places |
| NWI | National Wetlands inventory |
| OHP | Office of Historic Preservation |
| OHV | Off Highway Vehicle |
| OPS | Infrastructure and Operations |
| OPS-A | Infrastructure and Operations: Plan Area Access and Circulation |
| OPS-M | Infrastructure and Operations: Management Agreements |
| OPS-RE | Infrastructure and Operations: Sustainability and Renewable Energy |
| OPS-S | Infrastructure and Operations: Staffing and Facilities |
| OPS-U | Infrastructure and Operations: Utilities |
| PAID | Planned Agricultural Industrial Development |
| Park | Pacheco State Park |
| PCS | Potential contaminant sources |
| PG&E | Pacific Gas and Electric Company |
| Plan | Resource Management Plan/General Plan and Environmental Impact Statement/Environmental Impact Report |
| $PM_{2.5}$ | particulate matter with a diameter of 2.5 micrometers or less |
| $PM_{10}$ | particulate matter with a diameter of 10 micrometers or less |
| PPPC | Planning Policy and Programming Committee |
| PRBO | Point Reyes Bird Observatory |
| PRC | (California) Public Resources Code |
| Plan Area | San Luis Reservoir State Recreation Area |
| Reclamation | Bureau of Reclamation |
| RD | Rural Developed Zone |

| | |
|---|---|
| REG | Local and Regional Planning |
| RES | Resource Management |
| RFI | Request for interest |
| RMP | Resource Management Plan |
| RN | Rural Natural Zone |
| RTP | Regional Transportation Plan |
| RTPA | Regional Transportation Planning Agency |
| RWQCB | Regional Water Quality Control Board |
| Santa Clara County General Plan | Santa Clara County General Plan, Charting a Course for the County's Future, 1995-2010 |
| SCS | U.S. Soil Conservation Service |
| SCVWD | Santa Clara Valley Water District |
| Secretary | Secretary of the Interior |
| SFBAAB | San Francisco Bay Air Basin |
| SHPO | State Historic Preservation Officer |
| SIPs | State Implementation Plans |
| SJVAB | San Joaquin Valley Air Basin |
| SOP | standard operating procedures |
| SOx | oxides of sulfur |
| SP | State Park |
| SR | State Route |
| SRA | San Luis Reservoir State Recreation Area |
| S | Suburban Zone |
| SWP | California State Water Project |
| SWRCB | State Water Resources Control Board |
| TCR | Transportation Concept Report |
| TDS | Total dissolved solids |
| TOC | Total organic compound |
| UC Merced | University of California, Merced |
| US 101 | U.S. Highway 101 |
| USACE | U.S. Army Corps of Engineers |
| USDA | U.S. Department of Agriculture |

| | |
|---|---|
| USC | United States Code |
| USEPA | U.S. Environmental Protection Agency |
| USFS | U.S. Forest Service |
| USFWS | U.S. Fish and Wildlife Service |
| USGS | U.S. Geological Survey |
| UTC | Ultimate Transportation Corridor |
| VIS | Visitor Experience, Interpretation, and Education |
| VIS-C | (Visitor) Concession Opportunities |
| VIS-F | Visitor Uses/Opportunities and Facilities |
| VIS-I | (Visitor) Interpretive Themes |
| VIS-T | (Visitor) Trails |
| VERP | Visitor Experience and Resource Protection |
| WA | Water Operations |
| WA-E | Water level fluctuations |
| WA-F | Management Agreements |
| WARM | Warm freshwater habitat |
| WROS | Water Recreation Opportunity Spectrum |

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# 1 Introduction

## 1.1 Overview and History

The Bureau of Reclamation (Reclamation) and the California Department of Parks and Recreation (also known as California State Parks, or CSP) are required to develop long-term planning documents designed to guide future management actions for lands that they own and manage. Resource Management Plans (RMPs) and General Plans (GPs) are the long-term planning documents that Reclamation and CSP, respectively, are required to prepare. Although the federal requirements for an RMP differ somewhat from the state requirements for a GP, this joint RMP/GP (hereafter the Plan) has been developed through a cooperative effort between Reclamation and CSP to satisfy the requirements for both the RMP and GP.

This Plan has been prepared to enable comprehensive and cohesive management of the San Luis Reservoir State Recreation Area (SRA). The SRA contains approximately 27,000 acres of lands and waters including San Luis Reservoir, O'Neill Forebay, Los Banos Creek Reservoir, and adjacent lands owned by Reclamation. These lands and waters are managed for different purposes by CSP, the California Department of Fish and Game (DFG), and the California Department of Water Resources (DWR), as discussed further in Section 1.2.2. The lands and waters of the San Luis Reservoir SRA subject to the federal and state actions proposed in this Plan are collectively referred to as the Plan Area.

This Draft Plan incorporates a joint programmatic Environmental Impact Statement/Environmental Impact Report (EIS/EIR) that will be used to evaluate the potential effects of implementing the Plan. The Plan was initially released on April 27, 2005, with a Draft EIR for purposes of the California Environmental Quality Act (CEQA). A CEQA Notice of Availability (NOA) was filed with all interested agencies, organizations, persons, and the California State Clearinghouse. The Plan is being reissued with a Draft EIS/Revised Draft EIR (Draft EIS/EIR) to meet the requirements of both National Environmental Policy Act (NEPA) and CEQA compliance. Baseline data and existing conditions of Plan Area resources (described in Chapter 2), systemwide and regional planning (discussed in Chapter 3), and potential environmental impacts from Plan implementation (analyzed in Chapter 5) have all been updated where appropriate. A Notice of Completion (NOC) has been filed with the California State Clearinghouse and a NOA has been filed in the Federal Register, and all interested agencies, organizations, and persons have been notified of the re-release of the Plan. A comment period will begin concurrently with the release of the RMP/GP and Draft EIS/EIR.

The Plan is intended to provide coordinated direction for the development and management of recreation lands, waters, and facilities under Reclamation ownership and CSP management. The Plan will serve as the basis for guiding recreation and resource management activities for the next 25 years in a manner that maintains and enhances public and resource benefits. Although the Plan does not address water operations or power generation, it will provide management guidance in a manner that maintains consistency with the purpose of the water storage and distribution and power generation facilities.

The Plan contains policies (in the form of goals and guidelines) and a description of the desired future condition of Plan Area lands and waters for recreation, and resource use and management. NEPA and CEQA require Reclamation and CSP to explore a range of alternative management approaches and the environmental effects of these actions. Four management alternatives are evaluated and compared in this document.

The Plan will be adopted by Reclamation and the State Park and Recreation Commission (SPRC), after which the Plan will be implemented. Implementation of the RMP by Reclamation and CSP will be guided by existing and future laws, Executive Orders, regulations, and policies and guidelines, and is designed to supplement existing direction provided by these sources.

### 1.1.1 Plan Program and Policy

#### *1.1.1.1 Resource Management Plan Program and Policy*

The Mid-Pacific Region, South-Central California Area Office of Reclamation is conducting a multiyear effort to prepare an RMP for each of its major facilities. This effort is guided by federal legislation and policies to ensure that federal lands are managed to serve a wide range of public uses. Pursuant to the Reclamation Recreation Act of 1992, Title 28 (Public Law 102-575) and the Council on Environmental Quality Regulations (Title 40 Code of Federal Regulations, Part 1500-08), Reclamation is required to develop RMP and EIS documents for its major facilities. The Reclamation Recreation Act directs Reclamation to “provide for the development, use, conservation, enhancement, and management of resources on Reclamation lands” (Public Law 102-575, Title 28 [2805(c)(1)(A)]). RMPs are Reclamation’s blueprints for resource management decisions to guide Reclamation, managing partners, and agency cooperators and to inform the public about resource management policies and actions to be implemented over the life of the RMP.

Reclamation’s resource management policy is to provide a broad level of stewardship to ensure and encourage resource protection, conservation, and multiple uses, as appropriate. Management practices and principles established in this RMP, in accordance with federal laws, regulations, and policies, provide for the protection of fish, wildlife, and other natural resources, cultural resources, public health and safety; and applicable uses of Reclamation lands and water areas, public access, and outdoor recreation.

#### *1.1.1.2 General Plan Program and Policy*

In accordance with California Public Resources Code (PRC) Section 5002.2 and Sections 21000 et seq., CSP is required to prepare a GP and EIR for the lands that it manages prior to the development of major facilities, in this case, the San Luis Reservoir SRA. The purpose of a GP is to guide development activities and management objectives at the SRA. In accordance with the requirement, this joint Plan establishes general management policies for lands classified as SRAs in the Plan Area.

PRC Section 5019.56 classifies state recreation units, which include SRAs, according to the following definition:

> State recreation units consist of areas selected, developed, and operated to provide outdoor recreational opportunities. The units shall be designated by the Commission by naming, in accordance with Article 1 (commencing with Section 5001) and this article relating to classification.
>
> In the planning of improvements to be undertaken within state recreation units, consideration shall be given to compatibility of design with the surrounding scenic and environmental characteristics.
>
> State recreation units may be established in the terrestrial or non-marine aquatic (lake or stream) environments of the state and shall be further classified as one of the following types:
>
> (a) State recreation areas, consisting of areas selected and developed to provide multiple recreational opportunities to meet other than purely local needs. The areas shall be selected for their having terrain capable of withstanding extensive human impact and for their proximity to large population centers, major routes of travel, or proven recreational resources such as manmade or natural bodies of water. Areas containing ecological, geological, scenic, or cultural resources of significant value shall be preserved within state wildernesses, state reserves, state parks, or natural or cultural preserves, or, for those areas situated seaward of the mean high tide line, shall be designated state marine (estuarine) reserves, state marine (estuarine) parks, state marine (estuarine) conservation areas, or state marine (estuarine) cultural preservation areas.
>
> Improvements may be undertaken to provide for recreational activities, including, but not limited to, camping, picnicking, swimming, hiking, bicycling, horseback riding, boating, waterskiing, diving, winter sports, fishing, and hunting.
>
> Improvements to provide for urban or indoor formalized recreational activities shall not be undertaken within state recreation areas.

## 1.2 Introduction to the Plan Area

### 1.2.1 Location and History

San Luis Reservoir SRA encompasses more than 27,000 acres and contains two geographically separate areas:

- San Luis Reservoir and O'Neill Forebay and adjacent lands north and south of State Route (SR) 152, and

- Los Banos Creek Reservoir and adjacent lands approximately 8 miles to the southeast (Map 1).

San Luis Reservoir consists of about 12,700 water surface acres and 65 miles of shoreline; O'Neill Forebay, 2,210 water surface acres and 14 miles of shoreline; and Los Banos Creek Reservoir, approximately 485 water surface acres and 12 miles of shoreline.

San Luis Reservoir and SR 152 are in the latitudinal center of the State of California. The western portion of SR 152 provides access to Interstate 5 (I-5), which is approximately 1 mile east of the Plan Area. State Route 33 (SR 33) and the unincorporated community of Santa Nella are 2 miles northeast of San Luis Reservoir. Other nearby cities are Los Banos, approximately 6 miles east of Plan Area, and Gilroy, 38 miles to the west. The Plan Area is in the foothills of the Diablo Range and bordered on the west by the hilly terrain that separates the range from the San Joaquin Valley.

Construction on San Luis Reservoir began in 1963 and was completed in 1967, with planned joint use by the California State Water Project (SWP) and the Central Valley Project (CVP). Reclamation constructed the reservoir and owns the land, and DWR operates the water storage and conveyance facilities. San Luis Reservoir was built as part of the system of reservoirs, aqueducts, power plants, and pumping stations operated under SWP and CVP. The reservoir has a capacity of 2 million acre-feet and is the largest off-stream reservoir in the United States. Water stored in San Luis Reservoir is pumped through O'Neill Forebay from the Sacramento–San Joaquin River Delta (Delta), which in turn is fed by the California Aqueduct and the Delta-Mendota Canal (DMC). The function of San Luis Reservoir is to store and regulate water pumped from the Delta for use in the San Joaquin Valley and southern California.

Los Banos Creek Reservoir was completed in 1965 to prevent storm runoff from flooding the California Aqueduct and the DMC. The reservoir has a capacity of 34,600 acre-feet.

As part of the land acquisition undertaken by Reclamation for the CVP and upon completion of the water storage facilities, a series of legal agreements among various agencies were executed to manage the land areas. Additionally, right-of-way agreements were executed between Reclamation and various utility interests, including Pacific Gas & Electric (PG&E), California Department of Transportation (Caltrans), and Chevron Oil. The agreements and associated correspondence are summarized in Appendix A. The primary result of the agreements was that the management of recreation and associated facilities was transferred to CSP.

Key dates for the development of recreational facilities and management by CSP are as follows:

0 0.5 1 2 3 4 Miles

Scale 1 : 126,720
1" = 2 miles

N

Plan Area

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

CALIFORNIA STATE PARKS

**San Luis Reservoir**
**State Recreation Area**

**Map 1**
**Location Map**

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- **May 1965**—San Luis Reservoir and Forebay Recreation Development Plan (Bulletin No. 117-7)
- **June 1966**—San Luis Reservoir and Forebay Recreation Development Plan, Appendix C: Fish and Wildlife Development Plan (Bulletin No. 117-7)
- **April 8, 1969 (Amended July 2, 1982)**—Agreement between the United States of America and the State of California for the Construction and Operation of the Initial Recreation Facilities of the San Luis Unit (Contract No. 14-06-200-4353A)
- **November 1971**—General Development Plan, San Luis Reservoir State Recreation Area
- **February 1986**—General Plan Amendment, San Luis Reservoir State Recreation Area

Previous planning documents for the Plan Area are described further in Section 3.1 and Appendix A.

## 1.3 Purpose and Need

Planning for San Luis Reservoir, O'Neill Forebay, and Los Banos Creek Reservoir was developed in a series of documents dating from 1962 to 1985, including a General Plan that was adopted in 1971 and revised in 1985. Resource management and recreation interest and the types and level of use have changed over the last several decades.

An updated Plan is needed to account for changes in the physical and regulatory environment as well as projected population growth in the state that may affect the level of recreational services and facilities that are needed. Additionally, a Plan for managing resources based on currently available information for natural and cultural resources and the associated regulatory framework is necessary for the long-term stewardship of these resources. Upon approval, this Plan will supersede the previous plans. The new Plan will have a planning horizon of 25 years; however, it can be modified by an amendment or totally revised, if warranted, before the end of the planning period.

Needs that the new Plan will address are as follows:

- Enhancing natural resources and recreational opportunities without interrupting or conflicting with reservoir operations;
- Providing recreational opportunities to meet the demands of a growing population with diverse interests;
- Ensuring diversity of recreational opportunities and quality of the recreational experience;
- Protecting natural, cultural, and recreational sources while providing resource education opportunities and stewardship; and

- Providing updated management considerations for establishing a new management agreement between Reclamation and CSP for the "administration, operation, maintenance and development" of the Plan Area, pursuant to the federal Water Project Recreation Act of July 9, 1965, and PRC Sections 5002–5002.4 and 5094.2.

### 1.3.1 Purpose/Objectives

As required under NEPA, a proposed action such as adoption of the RMP requires a statement of the action's purpose and need. Under CEQA, a statement of objectives of the GP is also included.

The purposes of the Plan are as follows:

- Provide for the orderly use, development, and management of Plan Area lands and waters for recreation and other uses;
- Provide for the protection and management of natural, recreational, aesthetic, and cultural resources and for safety and security measures for the protection of visitors and resources;
- Ensure that management of quality recreational facilities and opportunities is compatible with other environmental resources and that management planning is based on expressed public need and the ability of the land and water resources to accommodate improved facilities and increased visitor use; and
- Propose uses that are compatible with Reclamation's core mission of delivering water and generating power.

The purpose of the Draft EIS/EIR is to assist Reclamation and CSP in finalizing a decision on a preferred alternative to implement the Plan.

### 1.3.2 Subsequent Planning Actions

The Plan includes recommendations for various resource management actions and facility improvement projects. These are specific actions that may be implemented to meet Plan goals. The management actions and projects are defined at a conceptual or programmatic level in this Plan. More detailed descriptions of the actions and project will be developed during the planning horizon. The responsibility for funding, designing, and implementing (or constructing) the management actions and improvement projects will be specified in the management agreement between Reclamation and CSP.

Site-specific NEPA and/or CEQA review may be required for new or expanded facilities or activities identified in the Plan because most actions have been identified at a conceptual level only and do not have specific locations or footprints. Any subsequent environmental documents would tier off and be consistent with the Plan's programmatic EIS/EIR. Some recreational uses and natural resource management actions identified in the Plan may not require additional environmental review because the environmental analyses of these actions are adequately addressed in this Draft EIS/EIR, or the actions are exempt from environmental review.

More information regarding project-specific environmental compliance documentation is presented in Chapter 5. Securing any permits required for implementation projects would also be part of subsequent planning actions. Finally, the Plan may need to be amended if any new acquisitions are added to the existing Plan Area or if any other circumstances make parts of the current Plan no longer applicable.

According to the *California State Parks Department Planning Handbook* (last revised April 2010), District Superintendents must obtain a determination from the Planning Policy and Programming Committee (PPPC) whenever there is a question of whether a proposed development, redevelopment of an existing facility, or institution or alteration of a program/activity is consistent with a unit's general plan, or is permitted without a plan amendment under PRC Section 5002.2.

When the number of changes or the magnitude of the change is great, a general plan revision would be considered instead of an amendment. While an amendment becomes a permanent addition to a general plan document, a revision completely replaces an existing general plan with a revised general plan. A general plan revision follows the same process and format as a full general plan (DPR 2010).

According to the Reclamation RMP Guidebook, the need for an amendment or revision to an RMP would be determined by the scope and significance of the needed adjustment. Reclamation offices have the discretion to determine if a needed change is an amendment or simply routine maintenance (and official documentation and notification is not necessary).

### 1.3.3 Plan Area Ownership and Management

Reclamation owns most of the land surrounding the reservoirs; however, other agencies are involved in operating and managing these lands (Map 2). The agencies include CSP (recreation management), DWR (reservoir and water distribution operations), and DFG (San Luis and O'Neill Forebay Wildlife Areas and Upper and Lower Cottonwood Wildlife Areas). The San Luis and O'Neill Forebay Wildlife Areas are managed by DFG but are on Reclamation-owned lands, and therefore are in the Plan Area. Upper and Lower Cottonwood Wildlife Areas are on lands that are owned and managed by DFG, and therefore are not in the Plan Area. The San Luis and O'Neill Forebay Wildlife Areas were set aside during the construction of the reservoirs as mitigation for habitat that was lost from the development of the CVP. Appendix A includes a summary of legal agreements detailing the transfer of management of wildlife mitigation lands to DFG. A smaller mitigation parcel known as Jasper-Sears, located near the Off Highway Vehicle (OHV) Use Area, is also owned and managed by DFG and is not part of the Plan Area. Additionally, the California Department of Forestry and Fire Protection (Cal Fire) uses a fire station building on Reclamation lands for fire protection.

The Plan does not address or include management direction or actions for DFG- or DWR-managed facilities or activities within the Plan Area.

## 1.4 Contents of the Plan and EIS/EIR

This document serves as the Plan and programmatic Draft EIS/EIR for the Plan Area. The programmatic Draft EIS/EIR is included to provide an analysis of effects that may result from implementation of the Plan. The Draft EIS/EIR will be used to inform decision makers and the public about the environmental consequences of the adoption of the Plan, consistent with the requirements of NEPA/CEQA. The Plan and Draft EIS/EIR are organized as follows:

**Chapter 1: Introduction** provides information about the location and history of the Plan Area, the purpose and need for the Plan, and Reclamation and CSP planning processes.

**Chapter 2: Existing Conditions** describes the Plan Area's current physical and social setting based on available data, including land use; physical, biotic, cultural, aesthetic, and recreational values; and existing facilities.

**Chapter 3: Planning Influences** describes the previous planning documents for the Plan Area, systemwide and regional planning influences affecting the Plan Area, and issues that are addressed in the Plan.

**Chapter 4: Plan Overview** contains the goals and guidelines that will guide future management and operation of the Plan Area. This chapter also includes the purpose and vision of the Plan, and describes geographic-based management zones, the proposed Plan alternatives, and carrying capacity of the Plan Area.

**Chapter 5: Environmental Analysis** contains the environmental impact analysis for the Plan's programmatic Draft EIS/EIR, pursuant to NEPA and CEQA.

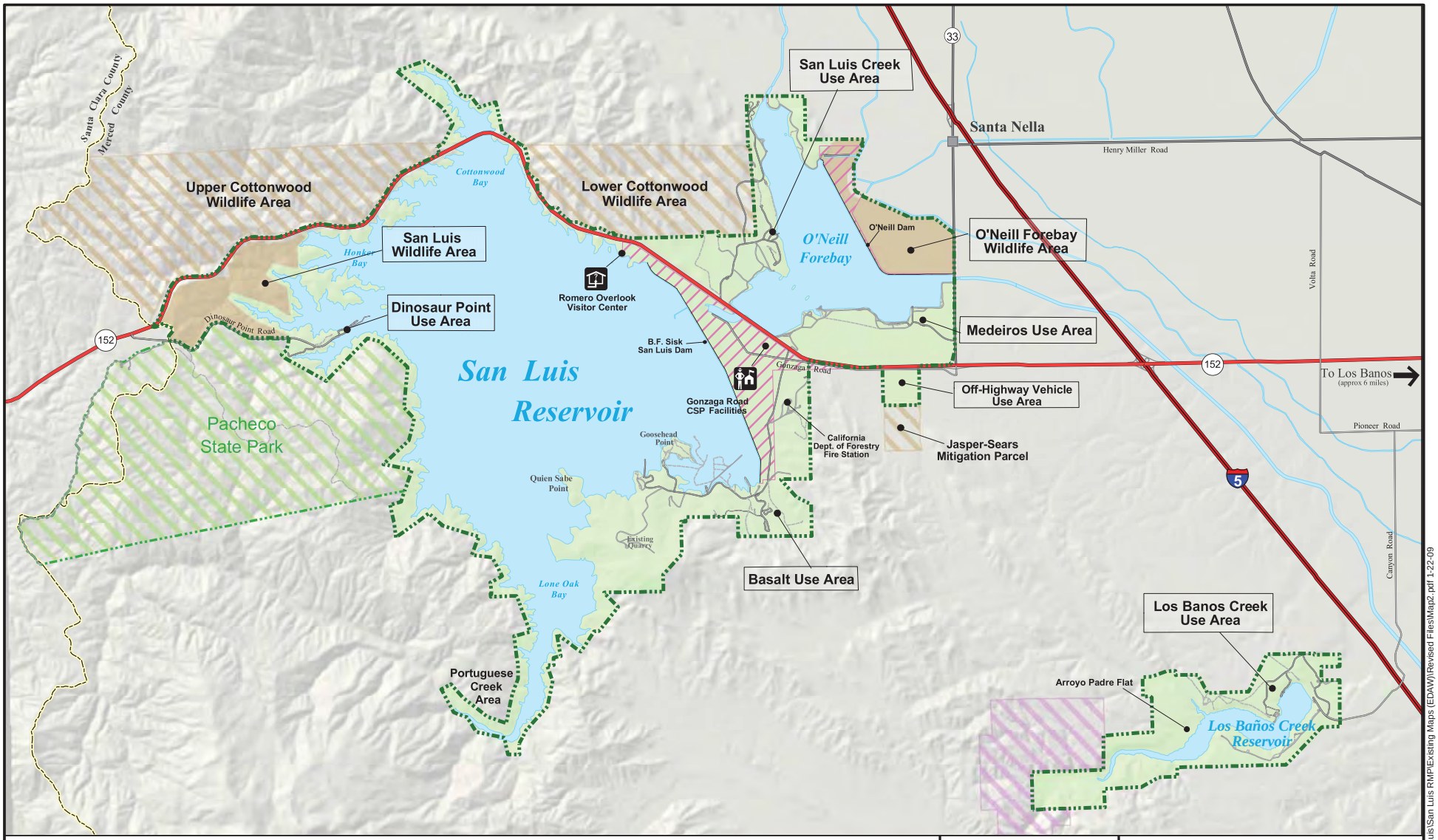
**Chapter 6: Consultation, Coordination, and Distribution** is an outline of the public involvement program and agency consultation undertaken for this project as well as agency distribution

**Chapter 7: References** contains a list of the organizations and persons consulted during the preparation of this document and a list of references.

**Chapter 8: Glossary of Terms** defines the key terms that are used in this document.

**Chapter 9: Report Contributors** is a list of the preparers of the Plan and Draft EIS/EIR.

The Draft EIS/EIR prepared for the Plan is programmatic in scope and therefore does not contain project-specific analysis for any of the projects recommended in the Plan. Specific projects will undergo subsequent NEPA and/or CEQA review as described in Section 1.3.2.




Source: USGS DRG

1 0.5 0 1 2 Miles

Scale 1 : 79,200
1" = 1.25 miles

N

**Land Management and Ownership Status**

- CSP and DWR managed (USBR owned)
- DFG managed (USBR owned)
- Joint Use Area
- Pacheco State Park
- DFG owned and managed
- DWR owned

**Boundaries**

- Plan Area

U.S. DEPARTMENT OF THE INTERIOR BUREAU OF RECLAMATION

CALIFORNIA STATE PARKS

**San Luis Reservoir State Recreation Area**

**MAP 2**
**Ownership & Management**

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# 2 Existing Conditions

This chapter summarizes the existing land uses, resources, existing facilities, local and regional plans, socioeconomic setting, and visitor uses that will influence the management, operations, and visitor experiences at the Plan Area. This information will provide the baseline data for developing the goals and guidelines for the management policies of the Plan and will serve as the affected environment and environmental setting for the purpose of environmental review.

## 2.1 Land Use

### 2.1.1 Surrounding Land Uses / Regional Context

The Plan Area is surrounded by a variety of land uses. Residential and commercial uses exist nearby in the unincorporated community of Santa Nella to the northeast of O'Neill Forebay. Lands to the southeast of the Plan Area between San Luis Reservoir and Los Banos Creek Reservoir include privately owned ranchlands, agricultural lands, an electrical substation, and scattered nonresidential uses. The San Joaquin Valley National Cemetery is northeast of O'Neill Forebay. Immediately west of San Luis Reservoir is Pacheco State Park, owned by CSP. DFG properties are located north of the San Luis Reservoir and east and west of the O'Neill Forebay.

The nearest incorporated cities are Los Banos, approximately 13 miles to the east; Gustine, approximately 18 miles to the north; and Gilroy, approximately 38 miles to the west. Santa Nella lies 2 miles to the northeast. Other nearby communities include Volta and Hollister. The Villages of Laguna San Luis, south of O'Neill Forebay and east of San Luis Reservoir, is an approved community plan that has not been constructed. Agua Fria is another planned community that could be developed south of and adjacent to the Villages of Laguna San Luis. The Agua Fria project is still in the conceptual stage (King 2010).

According to the Merced County Year 2000 General Plan (Merced County 1990), lands surrounding the Plan Area are designated as "Foothill Pasture." This designation generally applies to the Sierra Nevada foothills and the Diablo Range to the east and west sides of the county, respectively. Foothill Pasture areas are typically used for noncultivated agricultural practices such as livestock facilities, wastewater lagoons, and agricultural commercial facilities. Nonagricultural uses include mineral resource extraction and processing, institutional facilities, and outdoor public and private recreational facilities. The zoning classification considered most compatible for Foothill Pasture designated areas is A-2 (Exclusive Agricultural), which applies to the lands around the Plan Area (Merced County 1990).

### 2.1.2 Plan Area Land Uses

Many areas of the Plan Area are open and undeveloped. Several developed areas support water operations and recreation. Recreational land uses are described in Section 2.9, and management zones are discussed in Section 4.3.

The Plan Area is part of the water storage and delivery system for the SWP and Reclamation's CVP. Excess winter and spring flows from the Delta are conveyed through the California Aqueduct and DMC to O'Neill Forebay and subsequently pumped to the reservoir. San Luis Reservoir provides water to the Santa Clara Valley Water District (SCVWD) and San Benito County Water District. The SCVWD, a CVP contractor, receives water from San Luis Reservoir via the Pacheco Pumping Plant and the Santa Clara Conduit. Nearby, Los Banos Creek Reservoir prevents storm runoff from flooding the California Aqueduct and DMC and nearby communities.

An area of approximately 1,230 acres between B.F. Sisk Dam and SR 152 contains several structures including the dam itself, the Gianelli Pumping Plant (operated by DWR), operating facilities for DWR and CSP, CSP's Four Rivers Sector office, a California Department of Forestry and Fire Protection (Cal Fire) station, and a range used for law enforcement training. The Romero Visitor's Center, operated by the DWR, is along SR 152 west of Gonzaga Road. O'Neill Forebay contains O'Neill Dam (operated by DWR) and has an area of joint agency use for DWR operations. Both dams were closed to public access for security reasons in October 2011.

Los Banos Creek Reservoir has an area of approximately 128 acres that contains Los Banos Dam and associated water operations facilities. The area contains a CSP-managed entrance station where visitors must check in, minimal buildings, and some open and undeveloped areas.

A quarry used for gravel extraction during the construction of the dam is located at the southeast corner of San Luis Reservoir, west of Basalt Use Area. Basalt Quarry is used by the DWR for facility (e.g., dam and canal) repairs on the DWR's systems. The quarry is not open for recreation access.

### 2.1.3 Indian Trust Assets and Indian Sacred Sites

As a Federal land management agency, Reclamation is responsible for identifying and considering potential impacts of its plans, projects, programs, or activities on Indian Trust Assets. Indian Trust Assets are legal interests in property held in trust by the United States for Indian Tribes or individuals. The nearest Indian Trust Asset is the Chicken Ranch Rancheria approximately 70 miles northeast of the project area (Rivera 2010).

Under Executive Order 13007, in order to protect and preserve Indian religious practices, Reclamation shall:

(1) Accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners; and

(2) Avoid adversely affecting the physical integrity of such sacred sites. Where appropriate, agencies shall maintain the confidentiality of such sacred sites.

The Native American Heritage Commission (NAHC) is responsible for identifying and cataloging places of special religious or social significance to Native Americans. A letter was sent on July 11, 2003, to the NAHC informing the commission of the proposed action and its location. A response received on August 15, 2003, states: "A record search of the sacred land files has failed to indicate the presence of Native American resources in the immediate Plan Area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any Plan Area." A supplemental request was sent to the NAHC on October 20, 2011. A response received on October 27, 2011, from the NAHC confirmed that the results of the sacred lands file search have not changed.

## 2.2 Climate and Climate Change

### 2.2.1 Plan Area Climate

San Luis Reservoir SRA is on the western side of the San Joaquin Valley, which has a hot, dry climate. Wind in the region has a strong influence on climate, with prevailing winds generally coming from the west. However, wind direction changes frequently because of temperature differences between coastal air and valley air. The strongest winds in the region occur from April through August, and velocities can reach 30 to 40 miles per hour.

In the San Joaquin Valley, the combination of low rainfall and a high evaporation rate from hot, dry winds results in very dry soil that typically supports grassland and scrub-type vegetation; other vegetation types such as riparian woodlands occur along stream corridors. The low rainfall at San Luis Reservoir is caused by its location in the "rain shadow" of the Diablo Range—an area of reduced precipitation on the sheltered side of a mountain that results from the warming and drying of air. Rainfall occurs mostly in the winter, and averaged only 10.36 inches per year at San Luis Dam from 1963 through 2007. The evaporation rate in July and August often reaches 18 to 20 inches per month, although the rate can fall to less than 2 inches per month in midwinter.

Winter temperatures in the valley are mild, seldom dipping below freezing. Summers are hot, with the average daily temperature ranging in the 80s and 90s (degrees Fahrenheit [°F]). The frost-free season is 300 to 363 days a year, making for an almost uninterrupted growing season. Table 2-1 presents a monthly climate summary for San Luis Dam. Temperature and precipitation are averaged from the period January 1981 through December 2010. Snowfall and snow depth are averaged from the period of record of January 1963 through December 2007; more recent data for snowfall and snow depth are not available.

**Table 2-1**
**San Luis Dam Monthly Climate Summary**

| Climate Factor | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Annual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Average Maximum Temperature (°F) | 54.9 | 60.9 | 66.3 | 72.2 | 79.7 | 86.2 | 92.2 | 91.4 | 87.5 | 78.3 | 65.1 | 55.6 | 74.3 |
| Average Minimum Temperature (°F) | 38.2 | 42.2 | 46.4 | 49.6 | 55.4 | 59.7 | 64.4 | 64.0 | 60.8 | 53.7 | 44.8 | 38.2 | 51.5 |
| Average Total Precipitation (inches) | 2.09 | 2.10 | 1.60 | 0.56 | 0.50 | 0.05 | 0.00 | 0.08 | 0.16 | 0.53 | 1.18 | 1.61 | 10.46 |
| Average Total Snowfall (inches) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Average Snow Depth (inches) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**Source:** Western Regional Climate Center (2012)

Note: Temperature and precipitation based on January 1981 through December 2010 data; snowfall and snow depth based on January 1963 through December 2007 data.

°F = degree(s) Fahrenheit

## 2.2.2 Climate Change

### *2.2.2.1 Introduction*

Executive Order S-13-08 provides direction in developing California's first statewide climate adaptation report (California Natural Resources Agency 2009). The order called on state agencies to develop strategies to identify and prepare for expected changes in climate. The resulting report, the *California Climate Adaptation Strategy* (CAS; California Natural Resources Agency 2009), addresses potential effects of climate change on current and future conditions and how, if at all, these conditions may affect water supply, operations, lake levels, and recreation uses.

Current effects of climate change on the state include increased average temperatures, more extreme hot days, fewer cold nights, a lengthening of the growing season, shifts in the water cycle with less winter precipitation falling as snow, and both snowmelt and rainwater running off sooner in the year (California Natural Resources Agency 2009). Generally, the CAS report indicates that California should expect overall hotter and drier conditions with a continued reduction in winter snow (with concurrent increases in winter rains), as well as increased average temperatures, accelerating sea level rise, and changes in precipitation patterns and the intensity of extreme weather events (California Natural Resources Agency 2009). The CAS report concludes that more precipitation will fall as rain rather than snow, with important implications for water management in the state and potentially for the Plan Area.

At the federal level, Reclamation is assessing risks to the water resources of the western United States and developing strategies to mitigate risks to help ensure that the long-term water resources management of the United States is sustainable. This effort is part of the Omnibus Public Land Management Act of

2009 (Public Law 111-11) Subtitle F – SECURE Water, also known as the SECURE Water Act.

In 2011, Reclamation prepared a technical memorandum titled *Literature Synthesis on Climate Change Implications for Water and Environmental Resources* (Reclamation 2011a) that provides a summary of recent literature on the effect of climate change on hydrology and water resources, and the implications to key resource areas such water supply, flood control, fisheries and wildlife, water quality, and water demand. Among other regions in Western United States, the literature review addresses the potential climate change consequences in the Mid-Pacific Region, which covers the northern two-thirds of California, most of western Nevada, and part of southern Oregon.

The technical memorandum documents that trends similar to those reported in the CAS have been documented in the Mid-Pacific Region by various researchers. The literature review indicates that over the course of the 20th century, all areas of the Mid-Pacific Region became warmer, with an increase in both spring and winter temperatures. As a result of the increase in temperatures, the western United States and the Mid-Pacific Region experienced a decline in spring snowpack, reduced snowfall-to-winter-precipitation ratios, and earlier snowmelt runoff in the second half of the 20th century. Nationwide, extreme precipitation events have increased in frequency over the past 50 years; however, the Mid-Pacific Region has experienced a smaller increase than the United States as a whole.

The literature review indicates that future climate projections in the Mid-Pacific Region and in California show less snowfall, less snowpack development, and earlier timing of snowmelt runoff. Warmer temperatures are expected throughout California during the 21st century, leading to more intense and heavy rainfall interspersed with longer dry periods. Other projections include an increased risk of winter flooding, decreased water supply in the summer, and decreased hydropower generation.

A second report prepared pursuant to the SECURE Water Act (Reclamation 2011b) identifies the climate change trends and projections for the Sacramento and San Joaquin River basins. Temperature is projected to increase by roughly 5 to 6 degrees during the 21st century, with precipitation slightly decreasing in the southern Central Valley. The projections also suggest annual precipitation in the Sacramento and San Joaquin River basins will remain quite variable over the next century. Annual runoff is projected to increase slightly during the first half of the 21st century and decline in the second half of the century. Moisture falling as rain instead of snow at lower elevations will increase wintertime runoff and decrease summertime runoff.

The projected climate changes have potential impacts for the Sacramento and San Joaquin River basins. Early snowmelt and relatively higher winter rains from warmer conditions could increase flooding. Warmer conditions could increase fishery stress, reduce salmon habitat, increase water demands for instream

ecosystems, and increase potential for invasive species infestations (Reclamation 2011b). Climate change-related surface water decreases are likely to significantly increase future groundwater demands.

California communities have largely depended on runoff from yearly established snowpack to provide the water supplies during the warmer, drier months of late spring, summer, and early autumn. With rainfall and meltwater running off earlier in the year, the state will face increasing challenges of storing the water for the dry season while protecting Californians from floodwaters during the wet season.

#### 2.2.2.2 Water Operations

The DWR, in collaboration with the State Water Resources Control Board (SWRCB), other state agencies, and stakeholders, has initiated a number of projects to begin climate change adaptation planning for the water sector. For example, the recent incorporation of climate change impacts into the California Water Plan Update is an essential step in ensuring that all future decisions regarding water resources management address climate change. As part of the Update, in October 2009 DWR released the country's first state-level climate change adaptation strategy for water resources, and the first adaptation strategy for any sector in California. Entitled *Managing an Uncertain Future: Climate Change Adaptation Strategies for California's Water* (DWR 2008), the report details how climate change is already affecting the state's water supplies and sets forth ten adaptation strategies to help avoid or reduce climate change impacts to water resources. Because of the large role of local and regional water management, full implementation of Integrated Regional Water Management (IRWM) plans will be central to these adaptation efforts. IRWM plans address regionally appropriate management practices that incorporate climate change adaptation and provide a comprehensive, economical, and sustainable watershed-level water use strategy for California.

San Luis Reservoir levels vary by season and year due to recurring fluctuations in the amount and timing of water delivered via the two supply canals. Historically, San Luis Reservoir levels decline by an average of more than 100 feet from the late winter to summer months. The reservoir was drawn down to facilitate repairs in 1981 and 1982 and also during droughts in 1977, 1989, and 2008 (Reclamation 2011c). Given the potential for the climate changes discussed above, increased variability of precipitation has the potential to increase the frequency and magnitude of reservoir levels fluctuations. In addition, a reduced snowpack and the seasonal timing shift in runoff could lead to reduced water supplies in the reservoir in the summer months. Climate change adaptation strategies at state, regional, and local levels will need to be part of the planning process for future water operations, which are under DWR jurisdiction.

#### 2.2.2.3 Greenhouse Gases

Climate change as it relates to greenhouse gas (GHG) emissions is discussed further in Section 2.5.3.

## 2.3 Topography, Geology, and Soils

### 2.3.1 Topography

San Luis Reservoir is bordered to the west by the eastern foothills of the Diablo Range, which are marked by minor drainages. These drainages spread out to form several relatively flat valleys opening eastward into the San Joaquin Valley. The San Luis Flat is one such valley, formed in part by the fanning of San Luis and Cottonwood creeks. The inundation of the San Luis Flat created San Luis Reservoir.

The reservoir's north and south shores consist of mostly rugged, undulating terrain. Grades in these areas range between 0 percent and 20 percent. O'Neill Forebay is located northeast of San Luis Reservoir and below the dam. The majority of the area surrounding the forebay is relatively flat and less rugged than that of the main reservoir. Although grades in the forebay area also range between 0 percent and 20 percent, they are less undulating. Map 3 illustrates the elevation ranges in the Plan Area and surrounding vicinity.

### 2.3.2 Geology

The geology of the Plan Area is the result of several major changes over geologic time. During the late Jurassic and Upper Cretaceous periods, an open sea extended inland over what is now Merced County. During the late Pliocene and early Pleistocene eras, major folding, faulting, and uplift took place in the Coast and Sierra Nevada ranges.

The Plan Area includes portions of four geologic formations. The entire western side and the southern tip of the shoreline of San Luis Reservoir lie within the Franciscan formation. This formation is the oldest rock formation found in western Merced County. It is a thick assemblage of sedimentary, igneous, and metamorphic rocks. The sedimentary rocks consist of sandstone, shale, chert, and minor amounts of conglomerate.

The Panoche formation makes up most of the eastern shore of San Luis Reservoir and is broken only by the intrusion of the Plio-Pleistocene nonmarine and fan deposits of the Great Central Valley. The Panoche formation consists of arenaceous shale and thinly bedded sandstone, approximately 25,000 feet thick. Buff-colored, cavernous exposures are the result of weathering of limy, concretionary, gray, biotitic sandstones. The sedimentary sequence of the Panoche formation contains lenses of coarse-grained conglomerate consisting of boulders, cobbles, and pebbles of porphyritic and granitic rock.

The Tulare formation occurs mostly on the shore of O'Neill Forebay and in the area adjacent to O'Neill Forebay Dam. This formation, which varies in depth from 100 to 500 inches, overlies all the older formations. The Tulare material is composed of nonmarine gravel, sand, and silt and has its origin from rocks derived from the Franciscan formation. Stream terraces also are found in the Tulare formation. They are the sedimentary deposits of streams when they were at other levels.

The Tertiary Volcanic formation appears in small scattered deposits along the eastern and western shores of San Luis Reservoir. Among the volcanic rocks are pink and gray andesite and white to gray rhyolite, dark gray to black basalt, and limonite. A remnant basalt flow occurs at Basalt Hill just south of the Basalt Use Area. This hill appears to have been the vent from which the basalt was extruded. Lastly, fan deposits are limited to the shore of O'Neill Forebay and occur principally on the eastern side. Recent alluvium masks all older formations along the western side of the San Joaquin Valley.

According to the California Geological Survey, an area containing serpentine and ultramafic rock (rocks with naturally occurring asbestos) lies approximately 1.5 miles north-northwest of the northern Plan Area boundary, near the Stanislaus County line (California Geological Survey 2000).

### 2.3.3 Soils

#### *2.3.3.1 Soil Associations*

Of the soil associations that occur within the boundaries of the Plan Area, the Denverton, Kettleman, and Altamont clays occupy 2,650 acres of Plan Area lands surrounding San Luis Reservoir. Rough Stony Land is the second most common soil type in the reservoir area. It occupies roughly 2,000 acres confined mostly to the western side of the reservoir. There are several other minor soil associations, including the Rincon-Pleasanton association, composed of Pleasanton gravelly sandy loam, Los Banos clay loams, Rincon clay, and Rincon loam; Altamont-Kettleman loam to the northeast shore of O'Neill Forebay; Sobrante, Vallecitos, and Contra Costa loams; Herdlyn clay loam and Solano silt loam; Herdlyn clay loam on the southern and eastern shores of O'Neill Forebay; and Sorrento, Mocho, and Esparto loams in small, scattered areas at the reservoir.

#### *2.3.3.2 Soil Series*

The following is a description of the soil series in the use areas surrounding San Luis Reservoir and O'Neill Forebay. Altamont clay, the predominant soil in the San Luis Creek Use Area, occupies a combined area of 160 acres. Other soils that occur here are Altamont clay in the steep phase, Denverton clay (adobe), and Contra Costa gravelly loam. The predominant soil in the Basalt Use Area is Kettleman silty clay loam. Altamont clay is the next most important soil with a small portion of the rolling phase, and Altamont loam also exists in the rolling phase. Rincon clay loam is a major soil type at Basalt. The Medeiros Use Area has a combination of soil types scattered at random. The only soil type found in the Dinosaur Point Use Area is Vallecitos stony clay loam.

#### *2.3.3.3 Erosion Potential*

The Natural Resources Conservation Service (NRCS) and the California Geological Survey (CGS) have surveyed and classified the erosion hazard for soils through the United States. The ratings indicate the hazard of soil loss in off-road and off-trail areas after disturbance activities that expose the soil surface. The ratings are based on slope and soil erosion factor "K." Potential soil loss would be caused by sheet or rill erosion in off-road or off-trail areas where 50 to

Santa Clara County
Merced County
Upper Cottonwood Wildlife Area
Cottonwood Bay
Lower Cottonwood Wildlife Area
San Luis Creek Use Area
Santa Nella
Henry Miller Road
San Luis Wildlife Area
Honker Bay
O'Neill Dam
O'Neill Forebay Wildlife Area
O'Neill Forebay
[ Full Pool = 225 feet ]
Romero Overlook Visitor Center
Dinosaur Point Use Area
Dinosaur Point Road
152
Medeiros Use Area
B.F. Sisk San Luis Dam
Gonzaga Road
San Luis Reservoir
[ Full Pool = 544 feet ]
Gonzaga Road CSP Facilities
Off-Highway Vehicle Use Area
To Los Banos
(approx 6 miles)
Pioneer Road
Volta Road
Pacheco State Park
Goosehead Point
California Dept. of Forestry Fire Station
Jasper-Sears Mitigation Parcel
5
Quien Sabe Point
Existing Quarry
Basalt Use Area
Canyon Road
Lone Oak Bay
Los Banos Creek Use Area
Portuguese Creek Area
Arroyo Padre Flat
Los Banos Creek Reservoir
[ Full Pool = 328 feet ]

Source: USGS DLG / USGS 30m DEM

1 0.5 0 1 2 Miles

Scale 1 : 79,200
1" = 1.25 miles

N

## Elevation Ranges

- Less than 200 feet
- 200 to 600 feet
- 600 to 1000 feet
- 1000 to 1400 feet
- 1400 to 1800 feet
- 1800 to 2200 feet
- 2200 to 2600 feet
- over 2600 feet

U.S. DEPARTMENT OF THE INTERIOR BUREAU OF RECLAMATION

CALIFORNIA STATE PARKS SINCE 1864

**San Luis Reservoir State Recreation Area**

**MAP 3**
**Elevation Ranges**

X:\x_env_permit\BUREC\San Luis\San Luis RMP\Existing Maps (EDAW)\Revised Files\Map3.pdf 1-22-09

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75 percent of the surface has been exposed by logging, grazing, mining, or other types of disturbance.

The ratings are both verbal and numerical, and erosion hazard is described verbally as either “slight,” “moderate,” “severe,” or “very severe.” A rating of “slight” indicates that erosion is unlikely under ordinary climatic conditions; “moderate” indicates that some erosion is likely and that erosion control measures may be needed; “severe” indicates that erosion is very likely and that erosion control measures, including revegetation of bare areas, are advised; and “very severe” indicates that substantial erosion is expected, loss of soil productivity and off-site damage are likely, and erosion control measures are costly and generally impractical.

Within the Plan Area, the erosion hazard classifications of the land are as follows: 36 percent—slight; 10 percent—moderate; 46 percent—severe; and 8 percent—very severe (see Map 4) (NRCS 2008). The majority of developed lands in the Plan Area, including most recreation areas, are in areas with a slight or moderate erosion hazard.

#### *2.3.3.4 Seismicity*

San Luis Reservoir is in a seismically active area and is close to three geologic faults. The Ortigalita fault passes under the reservoir, and the Calaveras and San Andreas faults are 23 and 28 miles away, respectively. These faults and their segments can cause earthquakes at or near the reservoir. From May 1984 to December 1999, three earthquakes with magnitudes between 3.0 and 4.0 occurred within 10 miles of the reservoir. The epicenter of one of the earthquakes was in the reservoir itself; another was in O’Neill Forebay.

The Los Banos Valley and Cottonwood Arm sections of the Ortigalita fault (see Map 5) have each been designated as Alquist-Priolo fault zones in the vicinity of the Plan Area. Alquist-Priolo fault zones designate areas of existing surface fault rupture hazards (though not other earthquake hazards). Under the Alquist-Priolo Earthquake Fault Zoning Act, buildings used for human occupancy cannot be constructed on active faults or within Alquist-Priolo fault zones.

The B.F. Sisk (San Luis) Dam, located on San Luis Creek, was constructed in 1967 to withstand the effects of an earthquake with a magnitude close to 8.0. Five layers, or zones, of material make up the dam, and the dam’s core material (Zone 1) is resistant to progressive erosion. In addition, its primary structures were built on a firm rock foundation (Reclamation 2011d). A series of studies completed in 2006 determined that improvements to the dam are necessary to reduce risk to the downstream public. As a result, Reclamation and DWR initiated a Corrective Action Study to investigate and determine a course of action to mitigate risk (Reclamation 2011e). The B.F. Sisk (San Luis) Dam Safety of Dams Project is described further in Section 3.3.9.

Currently, no structures that are subject to the Alquist-Priolo Earthquake Fault Zoning Act exist in the fault zones within the Plan Area, and there are no plans to construct buildings within these zones.

The CGS maintains data expressing probabilistic shaking due to seismic hazards. Ground motions are expressed as a fraction of the acceleration due to gravity, or *g*. Within the Plan Area, the CGS has projected that ground shaking would be between 30 and 40 percent of acceleration due to gravity (California Department of Conservation 2003).

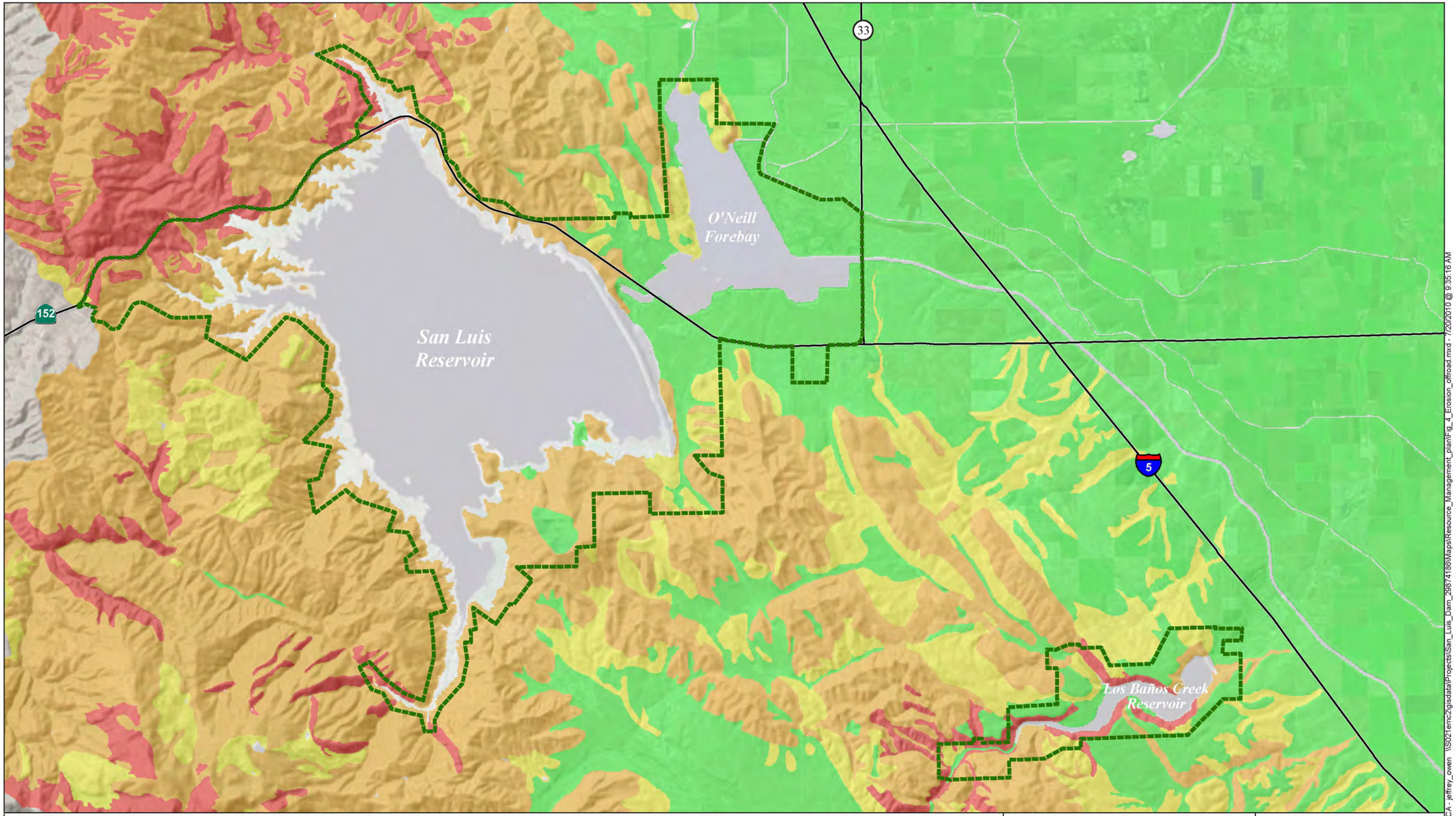
## 2.4 Hydrology, Floodplain, and Water Quality

San Luis Reservoir is a major offstream reservoir that stores excess winter and spring flows from the Delta and supplies water to service areas for both the SWP and the CVP. San Luis Reservoir has a capacity of 2,040,600 acre-feet (af), used primarily to supplement water supply to approximately 20 million residents and approximately 660,000 acres of irrigated farmland. The Plan Area also includes two smaller reservoirs, O'Neill Forebay and Los Banos Creek Reservoir. O'Neill Forebay has a capacity of 56,400 af and is used primarily for water supply. Los Banos Creek Reservoir has a capacity of 34,560 af and is used primarily for flood control. SWP water (conveyed through the California Aqueduct) and CVP water (pumped from the DMC via the O'Neill Pumping-Generating Plant) mix in O'Neill Forebay. During the fall and winter months, water is pumped into San Luis Reservoir through the Gianelli Pumping-Generating Plant.

The major drainage of the San Luis Reservoir area is San Luis Creek. The hydrology and floodplain of the watershed have been substantially altered by the development of the reservoirs. The Plan Area lies in the Panoche–San Luis Reservoir watershed, part of the San Joaquin River Basin, which drains into San Luis Creek. Historically, San Luis Creek flowed into the San Joaquin River, which emptied into the San Francisco Bay. Since completion of San Luis Dam, runoff from San Luis Creek has been captured in San Luis Reservoir and diverted for SWP and CVP purposes.

The Panoche–San Luis Reservoir watershed encompasses approximately 1,213 square miles (776,781 acres). The Plan Area includes four tributaries to San Luis Creek and more than 35 tributaries to San Luis Reservoir, as shown on the U.S. Geological Survey (USGS) 7.5-minute quadrangles for Pacheco Pass, Volta, Crevison Peak, Ingomar, Howard Ranch, San Luis Dam, Mariposa Peak, Ortigalita Peak, and Los Banos Valley.

Groundwater is recharged in the Plan Area by percolation of runoff into underground aquifers. Groundwater supports many of the springs throughout the area and supplies 93 percent of the public water supply in the Panoche–San Luis Reservoir watershed.

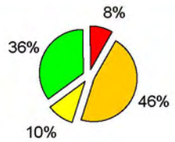



1 0.5 0 1 2 Miles

Scale 1 : 79,200

1 " = 1.25 miles

N




**Erosion hazard (off-road, off-trail)**

- Very severe (1066 acres)
- Severe (5907 acres)
- Moderate (1233 acres)
- Slight (4541 acres)

Plan Area

Data source: USDA - NRCS, URS 2008

**San Luis Reservoir State Recreation Area**

**MAP 4**
**Erosion Hazard**

URS Corporation - Oakland CA - jeffrey_owen \\S021emc2\gisdata\Projects\San_Luis_Dam_29874168\Maps\Resource_Management_plan\Fig_4_Erosion_offroad.mxd - 7/20/2010 @ 9:35:16 AM

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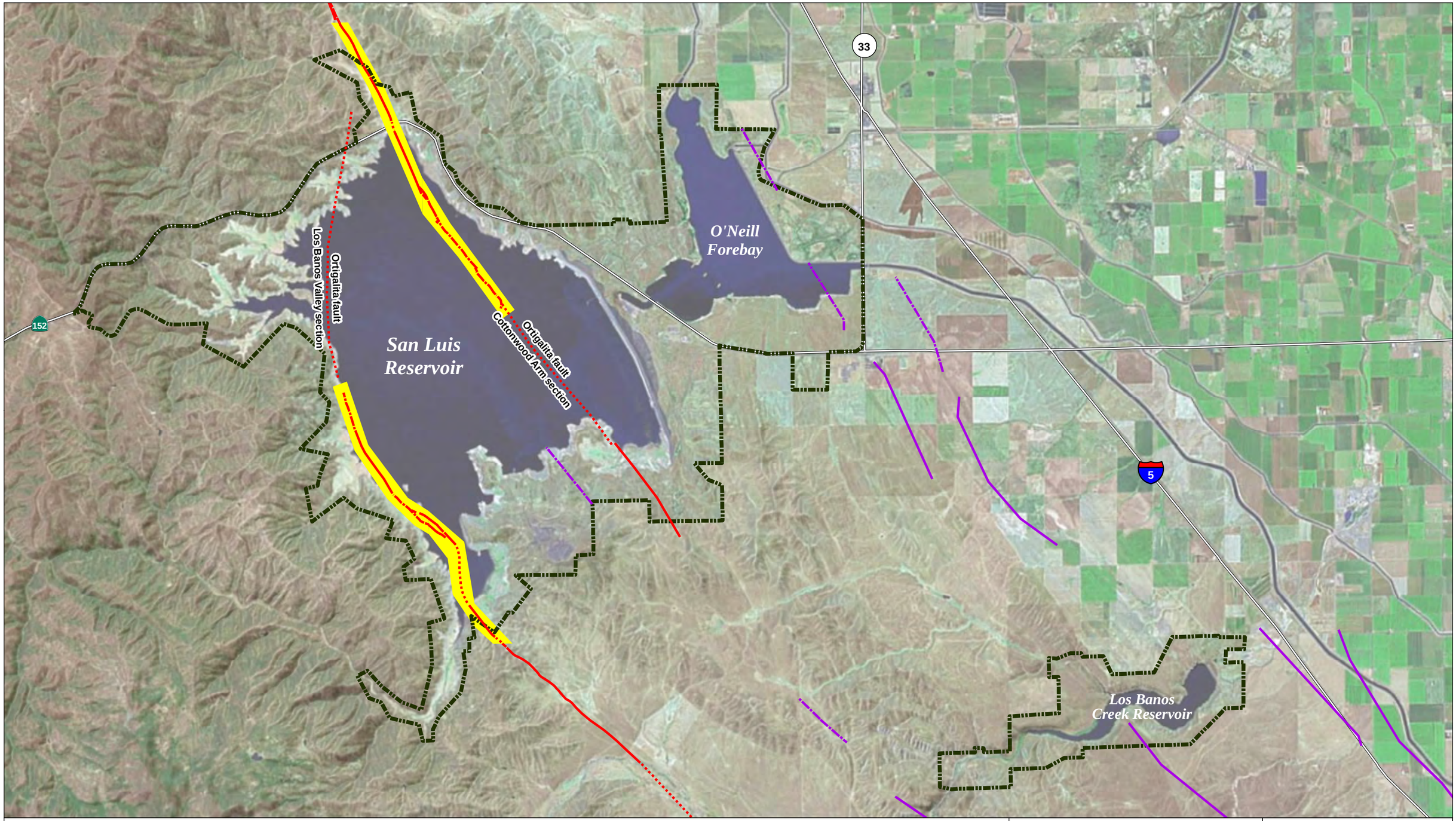


1 0.5 0 1 2 Miles

Scale 1 : 79,200

1 " = 1.25 miles

N

Holocene (< 15K years old)
- Approximate
- Concealed
- Certain

Late Quaternary (< 130k years old)
- Approximate
- Concealed
- Certain

Plan Area

Alquist-Priolo Fault Zones

Data source: California Geological Survey; URS, 2012

**San Luis Reservoir State Recreation Area**

**MAP 5**
**Faults**

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The Federal Emergency Management Agency (FEMA) has mapped the Plan Area as Zone D, an area of undetermined but possible flood hazard. The potential for flooding exists primarily in the low-lying areas along San Luis Creek, Cottonwood Creek, and Los Banos Creek, and along the banks of San Luis and Los Banos Creek reservoirs. Flood potential in O'Neill Forebay is extremely low because water is pumped into it. The USGS formerly maintained one flow gauge within the Plan Area at the Wolf Creek station, located in the vicinity of Dinosaur Point. Peak flow data are available from 1959 through 1969, during which floods occurred early in 1963 and early in 1967.

San Luis Reservoir levels vary by season and year due to recurring fluctuations in the amount and timing of water delivered via the two supply canals. Despite these variations, water levels are rarely low enough to substantially affect water recreation opportunities. Historically, San Luis Reservoir levels decline by an average of over 100 feet from late winter to summer months. In addition, the reservoir was drawn down to facilitate repairs in 1981 and 1982 and also during droughts in 1977, 1989, and 2008 (Reclamation 2011c).

### 2.4.1 Regulatory Setting

The objective of the Clean Water Act of 1977 is to "restore and maintain the chemical, physical, and biological integrity of the Nation's water." To achieve this objective, the act sets forth the following goals:

> (1) that the discharge of pollutants into the navigable waters of the United States be eliminated by 1985; (2) that as an interim goal there be attained by 1983 water quality which provides for the protection and propagation of fish, shellfish and wildlife, and provides for recreation in and on the water; (3) that the discharge of toxic pollutants in toxic amounts be prohibited; (4) that Federal financial assistance be provided to construct publicly owned waste treatment works; (5) that area wide waste treatment management planning processes be developed and implemented to assure adequate control of source pollutants in each State; (6) that a major research and demonstration effort be made to develop technology necessary to eliminate the discharge of pollutants into navigable waters, waters of the contiguous zone, and the oceans; and (7) it is the national policy that programs for the control of non point sources of pollution be developed and implemented in an expeditious manner so as to enable the goals of this Act to be met through the control of both point and nonpoint sources of pollution.

The basic means to achieve the goals of the Act is through water quality standards, discharge limitations, and permits. The Act authorizes the U.S. Environmental Protection Agency (USEPA) to require owners and operators of point source discharges to monitor, sample, and maintain effluent records. If the water quality of a water body is potentially affected by a proposed action (e.g., construction of a wastewater treatment plant), a National Pollutant Discharge Elimination System (NPDES) permit (Section 402 of the Clean Water Act) may be required. In most cases, the USEPA has given this responsibility to the states as long as the state program is acceptable to the USEPA.

Similarly, if a project may result in the placement of material into waters of the United States, a U.S. Army Corps of Engineers (USACE) Dredge and Fill Permit

(Section 404 of the Clean Water Act) may be required. It should be noted that the Section 404 permit also pertains to activities in wetlands and riparian areas. Prior to the issuance of either an NPDES or a Section 404 permit, the applicant must obtain a Section 401 certification. This declaration states that any discharge must comply with all applicable effluent limitations and water quality standards. Certain federal projects may be exempt from the requirements of Section 404 if the conditions set forth in Section 404(r) are met.

Section 319, Nonpoint Source Management Programs, was added to the Clean Water Act by Public Law 100-4. The purpose of Section 319 is to have the states establish nonpoint source management plans that are designed to deal with each state's nonpoint source pollution problems. Section 319(k) requires each federal department and agency to allow states to review individual development projects and assistance applications and accommodate, in accordance with Executive Order 12372, the concerns of the state regarding the consistency of these applications or projects with the state nonpoint source pollution management program.

The Safe Drinking Water Act of 1974 provides for the safety of drinking water supplies throughout the United States by establishing national standards that the states are responsible for enforcing. The Act provides for the establishment of primary regulations for the protection of the public health and secondary regulations relating to the taste, odor, and appearance of drinking water. Primary drinking water regulations, by definition, include either a maximum contaminant level (MCL) or, when an MCL is not economically or technologically feasible, a prescribed treatment technique that would prevent adverse health effects to humans. An MCL is the permissible level of a contaminant in water that is delivered to any user of a public water system. Primary and secondary drinking water regulations are stated in 40 CFR 141 and 143, respectively.

### 2.4.2 Water Quality Setting

This section contains a discussion of the water quality characteristics of San Luis Reservoir, O'Neill Forebay, and Los Banos Creek Reservoir. Information in this section was obtained from the *Los Banos Grandes Facilities Draft EIR* (DWR 1990), *California State Water Project Watershed Sanitary Survey Update Report 2001* (DWR 2001), *California State Water Project Watershed Sanitary Survey 2006 Update* (DWR 2007a), *Water Quality in the State Water Project, 2004 and 2005* (DWR 2009), DWR's compilation of water quality data, and discussions with DWR staff.

Surface water quality in the Panoche–San Luis Reservoir watershed falls under the management of the SWRCB. This watershed is categorized as largely impaired, and several of its water bodies are listed in the SWRCB *2010 Integrated Report* (SWRCB 2010) as Category 5, where at least one beneficial use is not supported and a total maximum daily load (TMDL) is needed. Both San Luis Reservoir and O'Neill Forebay are listed as Category 5. Los Banos Reservoir itself is not listed, but Los Banos Creek is also listed as Category 5. Water quality issues identified throughout the basin include pesticide contamination, high

nutrient concentrations in smaller tributaries, native fish habitat disruption, poor water chemistry, and high agricultural runoff. The USEPA has set standards for allowable maximum pollutant and nutrient concentrations.

San Luis Reservoir water is delivered to the San Joaquin Valley, the Santa Clara Valley, and Southern California when water supply in the California Aqueduct and the DMC is insufficient. The SCVWD, a CVP contractor, receives water from San Luis Reservoir through the Pacheco Intake. Because of constant pumping and mixing of its water, San Luis Reservoir does not typically develop a thermocline[2] (Borba 2003). Similarly, O'Neill Forebay does not develop a thermocline because of the highly regulated pumping-generating plants that require constant exchange of water in the forebay (Borba 2003).

Los Banos Creek Reservoir was constructed to protect the San Luis Canal portion of the California Aqueduct from flood damage, by controlling flows of the streams crossing the canal. Los Banos Creek Reservoir thermally stratifies during the summer months with an anoxic hypolimnion.[3] The reservoir destratifies in the autumn and remains oxygenated and at a uniform temperature throughout the winter and spring.

#### *2.4.2.1 Beneficial Uses*

Water in San Luis Reservoir and O'Neill Forebay is used for agricultural, industrial, municipal, and recreational uses as well as for fish and wildlife enhancement. Los Banos Creek Reservoir provides flood control management as well as recreational opportunities.

The Central Valley Regional Water Quality Control Board (RWQCB) Basin Plan identifies beneficial uses for surface water bodies in the Sacramento and San Joaquin river basins that are critical to management of water quality in California. Protection and enhancement of existing and potential beneficial uses are primary goals of water quality planning. San Luis Reservoir, O'Neill Forebay, and Los Banos Creek Reservoir are located within the jurisdiction of the Central Valley RWQCB. Beneficial uses for these water bodies are shown in Table 2-2. The beneficial uses shown in Table 2-2 have been modified from the Basin Plan descriptions to reflect actual uses at these facilities.

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[2] Thermocline is a region of a lake where the temperature changes rapidly with depth. For temperate lakes, the thermocline can be defined as the region where temperature changes are greater than 1 degree Celsius per meter of depth.

[3] Anoxic hypolimnion is the total depletion of oxygen in the dense bottom layer of water in a thermally stratified lake.

**Table 2-2**
**Water Uses of San Luis Reservoir, O'Neill Forebay, and Los Banos Creek Reservoir**

| Beneficial Uses | Description of Beneficial Uses | San Luis | O'Neill | Los Banos[1] |
|---|---|---|---|---|
| Municipal and Domestic Supply | Uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply. | X | X | X |
| Agricultural Supply – Irrigation | Uses of water for farming, horticulture, or ranching, including, but not limited to, irrigation (including leaching of salts) and stock watering. | X | X | — |
| Agricultural Supply – Stock Watering | | X | X | — |
| Industrial Supply – Service | Uses of water for industrial activities that do not depend primarily on water quality, including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well repressurization. | X | — | — |
| Industrial Supply – Power | Use of water for hydropower generation. | X | — | X |
| Water Contact Recreation | Uses of water for recreational activities involving body contact, where water ingestion is reasonably possible. Uses include, but are not limited to, swimming, wading, water-skiing (except Los Banos Creek), skin and scuba diving, wind surfing, or fishing. | X | X | X |
| Noncontact Water Recreation | Uses of water for recreational activities involving proximity to water, but where there is generally no body contact with water, nor any likelihood of ingestion of water. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities. | X | X | X |
| Warm Freshwater Habitat | Uses of water that support warm water ecosystems, including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates. | X | X | X |
| Cold Freshwater Habitat | Uses of water that support cold water ecosystems, including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates. | — | — | X |
| Spawning, Reproduction, and/or Early Development | Uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish. (Los Banos Creek Reservoir supports an active warm water largemouth bass and white crappie fishery, and rainbow trout, a coldwater species, is periodically stocked there by DFG.) | — | — | X |

**Table 2-2**
**Water Uses of San Luis Reservoir, O'Neill Forebay, and Los Banos Creek Reservoir**

| Beneficial Uses | Description of Beneficial Uses | San Luis | O'Neill | Los Banos[1] |
|---|---|---|---|---|
| Wildlife Habitat | Uses of water that support terrestrial or wetland ecosystems, including, but not limited to, preservation or enhancement of terrestrial habitats or wetlands, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources. | X | — | X |

**Source**: RWQCB 2007.

[1] The beneficial uses of Los Banos Creek Reservoir are not provided specifically for the reservoir. The Basin Plan considers the reservoir as part of a category called "Other Lakes and Reservoirs in San Joaquin R. Basin (Excluding Hydro Unit Nos. 531-533, 543, 544)." Therefore, the beneficial uses listed for Los Banos Creek Reservoir apply to all lakes and reservoirs in that category.

#### *2.4.2.2 Water Quality Objectives*

To protect and maintain beneficial uses of surface water bodies, quantitative and qualitative water quality objectives are defined in the Basin Plan (RWQCB 2009). The water quality objectives that apply to the protection of the above beneficial uses are described below, followed by a summary of the existing water quality at San Luis Reservoir and O'Neill Forebay.

**Bacteria.** The Basin Plan currently states that "in waters designated for contact recreation, the fecal coliform concentration based on a minimum of not less than five samples for any 30-day period shall not exceed a geometric mean of 200/100 [milliliters (ml)], nor shall more than ten percent of the total number of samples taken during any 30-day period exceed 400/100 ml."

**Chemical Constituents.** The Basin Plan states that "[w]aters shall not contain chemical constituents in concentrations that adversely affect beneficial uses… At a minimum, water designated for use as a domestic or municipal supply shall not contain concentrations of chemical constituents in excess of the MCLs specified in the provisions of Title 22 of the California Code of Regulations."

**Dissolved Oxygen.** The Basin Plan states that "monthly median of the mean daily dissolved oxygen (DO) concentration shall not fall below 85 percent of saturation in the main water mass, and the 95 percentile concentration shall not fall below 75 percent of saturation." The dissolved oxygen concentrations shall not be reduced below the following minimum levels at any time:

- Warm Freshwater Habitat (WARM): 5.0 milligrams per liter (mg/L)
- Cold Freshwater Habitat (COLD): 7.0 mg/L
- Spawning, Reproduction, and /or Early Development (SPWN): 7.0 mg/L

**Oil and Grease.** The Basin Plan states that "waters shall not contain oils, greases, waxes or other materials in concentrations that cause nuisance, result in a visible

film or coating on the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses."

**pH.** The Basin Plan states that "the pH shall not be depressed below 6.5 nor raised above 8.5."

**Pesticides.** The Basin Plan indicates that "no individual pesticide or combination of pesticides shall be present in concentrations that adversely affect beneficial uses," and specifically highlights waters designated for use as domestic or municipal supply in excess of MCLs.

**Sediment.** The Basin Plan states that "the suspended sediment and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses."

**Suspended Material.** The Basin Plan states that "waters shall not contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses."

**Tastes and Odors.** The Basin Plan states that "water shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal water supplies or . . . otherwise affect beneficial uses."

**Temperature.** The Basin Plan states that "[a]t no time or place shall the temperature of COLD or WARM intrastate waters be increased more than 5ºF above natural receiving water temperature."

**Turbidity.** The Basin Plan states that "[w]aters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses." Limitations on the increases in turbidity are identified for specific ranges of existing turbidity measurements.

### 2.4.3 Existing Water Quality Data

The most current water quality data for the San Luis Reservoir SRA are taken when available from four documents: Los Banos Grandes Facilities Draft EIR (DWR 1990), California State Water Project Watershed Sanitary Survey Update Report 2001 (DWR 2001), California State Water Project Watershed Sanitary Survey 2006 Update (DWR 2007a), and Water Quality in the State Water Project, 2004 and 2005 (DWR 2009).

Water quality indicators for the SRA are provided in *Water Quality in the State Water Project, 2004 and 2005* (DWR 2009). DWR Operations and Maintenance began a SWP water quality monitoring program in 1968. The program was initiated to monitor eutrophication in the SWP facilities and salinity for agricultural users. Over time, the SWP monitoring program expanded to emphasize parameters of concern for drinking water, recreation, and fish and wildlife purposes. The DWR conducts water quality monitoring throughout its facilities as noted below, and consists of both discrete (grab) samples and

continuous automated station data. The DWR maintains two automated monitoring stations at and near San Luis Reservoir, as follows:

- Check 13, located at the outlet of O'Neill Forebay; and
- Pacheco Pumping Plant, located on the west side of San Luis Reservoir.

Water quality data for Check 13 consist of both grab and automated data for a variety of water quality parameters. Monthly grab sample data at this location are available from January 1995 through August 2003 and include minerals, minor elements, and nutrients. Other conventional parameters (i.e., conductivity, temperature, pH, and turbidity) are reflected in the hourly automated data that have been collected since 1990. Archived water quality data date back to 1988. At the Pacheco Pumping Plant on the west side of the San Luis Reservoir, automated data for conductivity, temperature, and turbidity have been gathered since July 1989. In addition, grab samples for conventional constituents are collected at a monitoring station at the dam trashracks on the east side of the San Luis Reservoir. Grab samples for nonconventional constituents are collected by the SCVWD, and therefore the data are not available in the DWR database (Erickson 2003). Of the quantitative water quality parameters established in the Basin Plan, dissolved oxygen data are not available at San Luis Reservoir. In addition, only qualitative coliform data and monthly grab (i.e., field) dissolved oxygen data are available for O'Neill Forebay.

The data for both sites are summarized in the DWR's biennial water quality assessment of SWP facilities conducted by the California Resources Agency. The most recent version, *Water Quality in the State Water Project*, was completed in April 2009 (DWR 2009), based on samples taken during 2004 and 2005 (Table 2-3). In addition to this report, the *Sanitary Survey Update Report 2001* (DWR 2001) includes an analysis of specific water quality parameters between January 1996 and December 1999 as they relate to potential contaminant sources and activities at SWP facilities. The water quality data described in this section are based on DWR (2009).

**Table 2-3**
**San Luis Reservoir Water Quality Summary, 2004 to 2005**

| Parameter | Concentration (mg/L, unless otherwise noted) | | | | | |
|---|---|---|---|---|---|---|
| | Pacheco Pumping Plant[1] | | | Dam Trashracks[2] | | |
| | Median | Low | High | Median | Low | High |
| General Chemistry | | | | | | |
| Alkalinity (as $CaCO_3$) | 81 | 77 | 93 | 85 | 78 | 92 |
| Boron | 0.2 | 0.1 | 0.2 | 0.2 | 0.1 | 0.2 |
| Bromide | 0.22 | 0.14 | 0.29 | 0.23 | 0.13 | 0.27 |
| Chloride | 77 | 70 | 89 | 78 | 68 | 87 |
| Conductivity (µS/cm) | 494 | 441 | 524 | 449 | 441 | 529 |
| Dissolved Organic Carbon (as C) | 3.5 | 3.0 | 4.7 | — | — | — |
| Hardness (as $CaCO_3$) | 108 | 97 | 124 | 113 | 97 | 122 |
| pH (pH units) | 6.9 | 6.3 | 8.9 | 7.4 | 6.4 | 9.1 |
| Sulfate | 41 | 35 | 43 | 41 | 35 | 45 |
| Total Dissolved Solids | 280 | 265 | 301 | 282 | 259 | 292 |
| Total Organic Carbon (as C) | 3.7 | 3.2 | 4.5 | — | — | — |
| Turbidity (NTU) | 2 | 1 | 5 | 2 | <1 | 5 |
| Metals | | | | | | |
| Aluminum | — | — | — | — | <0.01 | <0.01 |
| Antimony | — | <0.001 | <0.001 | — | <0.001 | <0.001 |
| Arsenic | 0.003 | 0.002 | 0.004 | 0.003 | 0.002 | 0.004 |
| Barium | — | — | — | — | <0.05 | <0.05 |
| Beryllium | — | <0.001 | <0.001 | — | <0.001 | <0.001 |
| Cadmium | — | — | — | —[3] | <0.001 | 0.002 |
| Calcium | 22 | 19 | 25 | 22 | 19 | 24 |
| Chromium +3 | 0.003 | 0.001 | 0.005 | 0.002 | 0.002 | 0.004 |
| Copper | 0.003 | 0.002 | 0.005 | 0.002 | 0.001 | 0.002 |
| Fluoride | —[4] | <0.1 | 0.1 | —[5] | <0.1 | 0.1 |
| Iron | —[6] | 0.005 | 0.032 | —[5] | <0.001 | <0.001 |
| Lead | — | <0.001 | <0.001 | — | <0.001 | <0.001 |
| Magnesium | 13 | 12 | 15 | 13.5 | 12 | 15 |
| Manganese | —[7] | <0.005 | 0.1 | — | <0.005 | <0.005 |
| Mercury | — | — | — | — | <0.0002 | <0.0002 |
| Nickel | 0.001 | 0.001 | 0.002 | 0.001 | 0.001 | 0.002 |
| Selenium | 0.001 | <0.001 | 0.002 | 0.001 | 0.001 | 0.002 |
| Silver | — | — | — | — | <0.001 | <0.001 |
| Sodium | 52 | 49 | 59 | 54 | 48 | 60 |
| Zinc | — | <0.005 | <0.005 | —[3] | <0.005 | 0.014 |

**Table 2-3**
**San Luis Reservoir Water Quality Summary, 2004 to 2005**

| Parameter | Concentration (mg/L, unless otherwise noted) | | | | | |
|---|---|---|---|---|---|---|
| | Pacheco Pumping Plant[1] | | | Dam Trashracks[2] | | |
| | Median | Low | High | Median | Low | High |
| Nutrients | | | | | | |
| Total Kjeldahl Nitrogen (as N) | 0.3 | 0.1 | 1.7 | 0.4 | 0.2 | 1 |
| Nitrate + Nitrate (as N) | 0.795 | 0.12 | 1 | 0.605 | 0.04 | 1 |
| Ammonia (as N) | <0.01 | <0.01 | 0.02 | 0.01 | <0.01 | 0.12 |
| Total Phosphorus | 0.1 | 0.07 | 0.16 | 0.09 | 0.05 | 0.36 |
| Ortho-Phosphate (as P) | 0.009 | 0.06 | 0.12 | 0.07 | 0.04 | 0.1 |

**Source**: DWR 2009.

[1] Data were collected at San Luis Reservoir at Pacheco Pumping Plant Monitoring Station SLR00000.

[2] Data were collected at San Luis Reservoir Dam Trashracks Monitoring Station SL001000.

[3] One positive detection.

[4] Two positive detections.

[5] Three positive detections.

[6] Eight positive detections.

[7] Four positive detections.

### *2.4.3.1 Data by Water Body*

**San Luis Reservoir** General chemistry, metals, and nutrients recorded in samples from San Luis Reservoir at Pacheco Pumping Plant during 2004 and 2005 are summarized in Table 2-3. Monthly salinity and related dissolved parameters in San Luis Reservoir fluctuated within a narrow range. Conductivity in San Luis Reservoir varied by about 90 microSiemens per centimeter (µS/cm) during the two years, ranging from 441 to 529 µS/cm, while turbidity ranged from <1 to 5 NTU. Organic carbon ranged between 3.0 and 4.7 mg/L. Existing MCLs for the analyzed parameters in treated drinking water were not exceeded, with the exception of pH and manganese. The pH detected in the San Luis Reservoir in 2004 and 2005 ranged from 6.3 to 9.1, which exceeds both ends of the USEPA secondary MCL range of 6.5 to 8.5. The pH of drinking water is not a public health concern, and thus this secondary MCL has not been adopted as an enforceable standard by the California Department of Public Health. Of the 24 samples collected from San Luis Reservoir at Pacheco Pumping Plant in 2004 and 2005, four had manganese levels that were above the reporting limit. The maximum detected manganese concentration was 0.1 mg/L, two times greater than the secondary MCL of 0.05 mg/L. The MCL for manganese was established to address issues of drinking water aesthetics rather than public health protection. Noticeable effects of manganese in water above the secondary MCL can include dark coloration, black staining from oxides of manganese, and a bitter metallic taste (USEPA 1992 as cited in State of California Resources Agency 2007). Water collected from San Luis Reservoir at Pacheco Pumping Plant originates from near the bottom of the reservoir, where manganese solubility can increase

due to lower dissolved oxygen concentrations at depth, resulting in the higher manganese levels (DWR 2007b).

*2001 Sanitary Survey Update* In accordance with the California Department of Health Services (CDHS) California Surface Water Treatment regulations, all water purveyors are required to conduct a sanitary survey of their watersheds and update it every five years. The DWR conducted its first Sanitary Survey in 1990 and updated it in 1996, 2001, and most recently, 2006 (DWR 2007a). The 2006 survey is discussed below. The purpose of the 2001 survey was to describe and control management practices, describe potential contaminant sources (PCS) or activities and their effect on drinking water source quality, determine if appropriate treatment is provided, and identify appropriate actions and recommendations to improve or control contaminant sources (DWR 2001). The survey includes all major SWP features, including O'Neill Forebay and San Luis Reservoir. The water quality data in the *Sanitary Survey Update Report 2001* (DWR 2001) were evaluated against MCLs[4] as established in Title 22 of the California Code of Regulations, Domestic Water Quality, and Monitoring Regulation. MCLs are usually applied to finished water, but they are useful as a conservative indicator of source water contaminants. If source water concentrations are below MCLs, then contaminants are not as likely to be of concern to the finished water supplies. In addition, if MCLs are not exceeded, beneficial uses as established by the Basin Plan would also be protected.

*California State Water Project Watershed Sanitary Survey 2006 Update* The *California State Water Project Watershed Sanitary Survey 2006 Update* (DWR 2007a) concentrates on key water quality issues that challenge SWP Contractors. As requested by the CDHS, this survey addresses emergency response procedures, addresses efforts to coordinate pathogen monitoring in response to the Long Term 2 Enhanced Water Treatment Rule, and reviews substantial changes to the watersheds and their impacts on water quality. The purpose of the 2006 update was to evaluate the sources of water quality problems and recommend actions that the SWP Contractors can take to improve water quality over the next five years. This survey is not an update of all of the information from the previous three surveys, so much of the information from the 2001 survey is still the most current.

Chapter 6 of the *Sanitary Survey Update Report 2001* (DWR 2001) identifies the PCS in the 85-square-mile San Luis Reservoir Watershed. The PCS, the types of contaminants resulting from these sources, and the likelihood of such contamination are described in Table 2-4. As described in the *Sanitary Survey Update Report 2001*, substantial contaminant sources and water quality problems

[4] MCL is the highest level of a contaminant that is allowed in drinking water. The federal Safe Drinking Water Act (SWDA) of 1974 authorizes the USEPA to set enforceable health standards (MCLs). The State of California implements the federal SDWA on behalf of the USEPA, and has developed and implemented its own drinking water standards that must be at least as stringent as federal standards.

at the reservoir are associated with watershed activities and source water from the aqueduct and the DMC.

**Table 2-4**
**Potential Contaminant Sources for San Luis Reservoir**

| Potential Contaminant Sources (PCS) | Types of contaminants resulting from PCS | Potential for Contamination from PCS |
|---|---|---|
| Recreation (body contact and non-body contact activities) | Turbidity and pathogens in runoff; diesel fuels, gasoline, hydrocarbon, and methyl tertiary butyl ether (MTBE) from boating activities | Recreation can contribute to water quality issues in the reservoir; body contact recreation may be a major source of pathogens. MTBE did not appear to be a serious water quality concern in the reservoir, according to a 1997 study. MTBE is no longer used as a fuel additive in California. |
| Wastewater Treatment Facilities | Pathogens | The potential for contamination to water from these facilities is unknown. |
| Animal Populations (livestock grazing trespass, wild animal populations) | Nutrients, turbidity, and pathogens in runoff and erosion | Droppings from large populations of migrating waterfowl may be a water quality concern during winter months. Contribution of contaminants from animal populations is unknown. |
| Algal Blooms | Nutrients | Algal blooms are likely if other enrichment conditions are met. Nutrients in the reservoir were high during 1996 to 1999. Taste and odor in the reservoir are more serious water quality concerns during drought years. Historical data suggest that algal blooms caused taste and odor problems for SCVWD during the drought years from 1992 to 1993. During the survey period from 1996 to 1999, SCVWD did not report any serious algal blooms or taste and odor issues.[1] |
| Agricultural Activities | Pesticides and agricultural drainage in runoff | Agricultural activities are considered a minor threat to water quality. |
| Traffic Accidents / Spills | Oil, grease, other hydrocarbons in runoff, hazardous wastes from truck spills | There were no documented spills or accidents reported in the watershed from 1996 to 2000. However, a potential exists for hazardous waste contamination associated with truck accidents on SR 152. |
| Geologic Hazards | Turbidity from landslide / erosion caused by wave actions from seismic and boating activities | Landslides and erosion are considered moderate threats to water quality. |
| Fires | Nutrients, turbidity, and sediment loads | The indirect effect of runoff from burned areas on the reservoir's water quality has not been determined. |

**Source**: Sanitary Survey Update Report 2001 (DWR 2001).

[1] SCVWD reported (DWR 2007a) that during the late summer and early fall, when water levels in the San Luis Reservoir typically reach their minimum, a thick layer of algae grows on the surface. The reservoir contains sufficient nutrients to stimulate algal blooms, a problem that becomes more severe when water levels are low. When the amount of water drops to the beginning of the low point of about 406 feet above mean sea level (300,000 acre-feet), algae begins to enter the San Felipe Division intake, degrading water quality and making the water harder to treat. In response, operations of the reservoir have been changed such that water levels are maintained above the low-point elevation, and the Low Point Project is being developed to further address solutions.

The SCVWD collected pathogen data from water from the San Luis Reservoir at the Santa Teresa Water Treatment Intake; Table 2-5 presents the microbiological data of the raw water (100 percent from the reservoir) for January 1996 through December 1999. According to the *Sanitary Survey Update Report 2001* (DWR 2001), the samples that tested positive for coliform levels were below the state regulatory numerical values for freshwater beaches (DWR 2001).

**Table 2-5**
**Pathogens in Source Water at Santa Teresa Water Treatment Plant, 1996 through 1999**

| Pathogen | Most Probable Number per 100 ml[1] | | | |
|---|---|---|---|---|
| | Mean | Median | Low | High |
| Total Coliform | 15 | 6 | 2 | 500 |
| Fecal Coliform | 9 | 4 | 2 | 50 |
| E. coli | 8 | 4 | 2 | 50 |
| Cryptosporidium | ND[2] | — | — | — |
| Giardia | ND[2] | — | — | — |

**Source:** DWR 2001.
[1] Data provided by SCVWD. Raw water was 100% from San Luis Reservoir. Nondetects were not used for computation of statistics.
[2] Sampled results below their respective detection limits.
ND = nondetect

According to the *Watershed Sanitary Survey 2006 Update* (DWR 2007a), the SCVWD has monitored for *Cryptosporidium* and *Giardia* since January 2000 at the intake of the Santa Teresa Water Treatment Plant (WTP). Samples are collected monthly or bimonthly, and as of December 2005, 98 samples had been analyzed. *Cryptosporidium* was never detected, and *Giardia* was found at 0.1 cysts/L in only one sample collected on June 14, 2005 (DWR 2007a).

Water enters SVCWD facilities from the west side of San Luis Reservoir at Pacheco Pumping Plant, from which it is pumped by tunnel and pipeline to water treatment and groundwater recharge facilities in the Santa Clara Valley. The *Watershed Sanitary Survey 2006 Update* (DWR 2007a) included samples of water pumped from San Luis Reservoir at Pacheco Pumping Plant from 2000 to 2006. Total monthly median coliform levels for the area were found to be consistently less than 100 most probable number (MPN)/100 ml, with the exception of August 2003. *E. coli* monthly medians were always less than 20 MPN/100 ml and generally less than 2 MPN/100 ml (DWR 2007a).

Data for the DWR WTP were also recorded in the *Watershed Sanitary Survey 2006 Update* (DWR 2007a) from 2000 to 2006. Both total and fecal coliform levels were low until 2005. From September 2005 to April 2006, both total and fecal coliforms were reported as greater than 23 MPN/100 ml. In May and June 2006, both total and fecal coliform levels were reported as greater than 1,600 MPN/100 ml. Although it is difficult to determine the source of the higher coliform levels because the DWR WTP intakes from both O'Neill Forebay and

San Luis Reservoir, the higher levels were found in summer months when water is normally being released from San Luis Reservoir (DWR 2007a).

Although water quality levels generally meet drinking water standards, land use and source water information suggested the possibility of several water quality concerns:

- High turbidity and total dissolved solids (TDS) levels in the reservoir;
- Algal blooms and taste and odor problems (during a drought year);
- High total organic carbon (TOC) and bromide concentration from the source water; and
- Pathogen contamination through grazing trespass and recreation.

Algal blooms occur when the reservoir level is low during summer and/or drought periods and the air temperature is high. Algal blooms degrade water quality and lessen the reservoir's appeal to recreational users because of odor, taste, and interference with boating and angling. During algal blooms, recreational use patterns often shift, with lower use of San Luis Reservoir and higher use of O'Neill Forebay, where algal blooms are less prevalent. See Section 3.3.8 for a discussion of the San Luis Reservoir Low Point Improvement Project, which was designed to address water quality delivery issues related to algal blooms.

To address potential water quality concerns, the *Sanitary Survey Update Report 2001* identifies specific recommendations to address the potential threat of drinking water quality degradation from the priority PCS. The conclusions and recommendations are summarized in Table 2-6.

**Table 2-6**
**Conclusions and Recommendations of the *Sanitary Survey Update 2001*, San Luis Reservoir**

| Conclusion | Recommendation |
|---|---|
| Body contact recreation and boating are potential sources of microbial pathogens; wind and boating activities increase turbidity. Motorized boats did not appear to contribute substantial MTBE. | Coordination between DWR and CSP to improve public awareness of water quality and provide more restrooms. If future recreational use increases, investigate the need to restrict swimming and reduce the number and speed of boats. |
| Runoff from campgrounds, parking grounds, and boat ramps contributes to contaminants such as turbidity and TOC. | Consider conducting studies to estimate total runoff in the watershed and quantify contaminants that enter the reservoir. |
| Seasonal animal grazing trespass, wild animals, and large numbers of migrating waterfowl are considered substantial contributors of turbidity, nutrients, TOC, and pathogens. Animals were found in direct contact with water in the reservoir. The number of seasonal grazing animals and the species and number of wild animals are not known. | Build fences as needed to confine grazing animals and wildlife; provide alternative water supplies for animals; conduct studies on the effects of animal populations on water contamination; review existing grazing leases; divert runoff immediately downstream of wildlife areas. |
| SWP source water contains high concentrations of nutrients that support algal growth. | Review existing flavor profile and investigate need to control algae during drought years. |

**Table 2-6**
**Conclusions and Recommendations of the *Sanitary Survey Update 2001*, San Luis Reservoir**

| Conclusion | Recommendation |
|---|---|
| Approximately 10 miles of SR 152 parallel the reservoir. Potential hazardous chemical spills from truck accidents. | DWR coordinate with other agencies to identify emergency action plans. |
| Fires contribute turbidity, TOC, and TDS. | Evaluate level of public education on fire dangers. |
| Source water from the DMC and the California Aqueduct can contribute to TOC, turbidity, and TDS. | Determine the relative contributions of these constituents from each source and operational scenarios to reduce concentrations. |

**Source**: DWR 2001.

**Note**: Recommendations from this study are general and do not commit Reclamation or CSP to the recommended actions.

**O'Neill Forebay** Delta exports enter O'Neill Forebay from the California Aqueduct and the DMC. Increased outflow from O'Neill Forebay to the California Aqueduct generally coincides with San Luis Reservoir releases during spring and summer. Water from the forebay is pumped into San Luis Reservoir largely during fall and winter when SWP demands are low and excess water can be stored. The combined operation of these facilities determines the quality of water in the forebay. The types of contaminants resulting from PCS, and likelihood for such contamination, are described in Table 2-7.

Coliform samples were collected from the north and south swimming beaches in O'Neill Forebay during the nonpeak workweek, when there was little or no swimming activity. Coliform and *Escherichia coliform* (*E. coli*) were recorded as either present or absent; quantitative values were not determined (DWR 2001). Total coliforms were present in all samples at both beach locations, and *E. coli* was present in 13 of the 17 samples collected from the north beach and 6 of the 17 samples from the south beach. Although quantitative data are not available, the available information suggests that occurrence of coliforms may be more frequent and concentrations may be higher during the high-use periods (weekends and holidays).

**Table 2-7**
**Potential Contaminant Sources for O'Neill Forebay**

| Potential Contaminant Sources (PCS) | Types of contaminants resulting from PCS | Potential for Contamination from PCS |
|---|---|---|
| Delta-Mendota Canal (DMC) | Salt, carbon loads, agricultural drainage, and other unspecified water quality constituents | Inflows from the DMC, California Aqueduct, and San Luis Reservoir largely control water quality in O'Neill Forebay.<br>The DMC generally has higher salinity than the California Aqueduct upstream of O'Neill Forebay, as evidenced by data in 1995, which showed the DMC loads for TDS, TOC, and bromide were higher than those of the California Aqueduct.<br>The high number of bridge and railroad crossings above the |

**Table 2-7**
**Potential Contaminant Sources for O'Neill Forebay**

| Potential Contaminant Sources (PCS) | Types of contaminants resulting from PCS | Potential for Contamination from PCS |
|---|---|---|
| | | DMC as well as drain inlets into the DMC may contribute to contaminants. |
| Recreation[1] | Turbidity and pathogens in runoff; diesel fuels, gasoline, hydrocarbon, and MTBE from boating activities | There have been no reports of spills or leaks from wastewater facilities (also unlikely to pose a threat because of sufficient capacity, distance from the forebay, and features that would alert of potential spills).<br>Portable and permanent pit toilets pose a potential source of fecal contamination, but they are monitored and emptied as needed.<br>With respect to hydrocarbons and MTBE, samples collected at the outlet from 1996 to 1999 contained no volatile organics, and on one occasion only 0.5 mg/L of MTBE. It is possible that the large inflow volumes to the forebay quickly dilute any MTBE released by boating activity.<br>Total coliforms were present in all samples at the north and south swimming beach locations, and E. coli was present in 13 of the 17 samples collected from the north beach and 6 of the 17 samples from the south beach. |
| Animal Populations (livestock grazing) | Nutrients, turbidity, and pathogens in runoff and erosion | Runoff from adjacent rangeland would likely be minimal due to the lack of major drainage channels and the flat topography. |
| Traffic Accidents / Spills | Oil, grease, other hydrocarbons in runoff, hazardous wastes from truck spills | No documented vehicle incidents during 1996 to 1999. However, SR 33 and 152 cross portions of O'Neill Forebay. |
| Fire | Nutrients, turbidity, and sediment loads | Minor threat to water quality. |

**Source**: DWR 2001.

**Notes**: DMC = Delta-Mendota Canal; TDS=total dissolved solids; TOC=total organic carbon; MTBE= Methyl tertiary butyl ether

[1] Because the drawdown of San Luis Reservoir sometimes affects its recreation potential, a proportionately greater investment was made toward recreation amenities at O'Neill Forebay. MTBE is no longer used as a fuel additive in California.

DWR routinely collects water quality samples in the DMC upstream of its connection with O'Neill Forebay, including minerals, minor elements, nutrients, and other constituents such as total carbon and bromide. Data recorded in *Water Quality in the State Water Project, 2004 and 2005* (DWR 2009) indicated that MCLs for salinity, sulfate, chloride, and nitrate in treated drinking water were not exceeded. Water quality data for general chemistry and metals recorded in the study are summarized in Table 2-8.

**Table 2-8**
**O'Neill Forebay Outlet Water Quality Summary, 2004 to 2005**

| Parameter | Concentration (mg/L, unless otherwise noted) | | |
|---|---|---|---|
| | Median | Low | High |
| **General Chemistry** | | | |
| Alkalinity (as CaCO3) | 73 | 44 | 85 |
| Boron | 0.2 | 0.1 | 0.4 |
| Bromide | 0.17 | 0.07 | 0.37 |
| Chloride | 61 | 24 | 120 |
| Conductivity (µS/cm) | 409 | 221 | 615 |
| Dissolved Organic Carbon (as C) | 3.0 | 2.4 | 7.9 |
| Hardness (as CaCO3) | 99 | 55 | 143 |
| pH (pH units) | 7.0 | 6.4 | 8.3 |
| Sulfate | 39 | 18 | 77 |
| Total Dissolved Solids | 242 | 124 | 348 |
| Total Organic Carbon (as C) | 3.2 | 2.3 | 8.0 |
| Total Suspended Solids | 4 | <1 | 11 |
| Turbidity (NTU) | 5 | 2 | 23 |
| Volatile Suspended Solids | 2 | <1 | 4 |
| **Metals** | | | |
| Aluminum | — | <0.01 | 0.115 |
| Antimony | — | <0.001 | <0.001 |
| Arsenic | 0.002 | 0.002 | 0.003 |
| Barium | — | <0.05 | <0.05 |
| Beryllium | — | <0.001 | <0.001 |
| Cadmium | — | <0.001 | <0.001 |
| Calcium | 20 | 12 | 31 |
| Chromium +3 | 0.002 | 0.001 | 0.004 |
| Copper | 0.002 | 0.001 | 0.005 |
| Fluoride | <0.1 | <0.1 | 0.1 |
| Iron | 0.01 | <0.001 | 0.114 |
| Lead | — | <0.001 | <0.001 |
| Magnesium | 12 | 6 | 16 |
| Manganese | 0.006 | 0.005 | 0.013 |
| Mercury | — | <0.0002 | <0.0002 |
| Nickel | 0.001 | 0.001 | 0.003 |
| Selenium | — | <0.001 | 0.002 |
| Sodium | 44 | 21 | 76 |
| Zinc | — | <0.005 | <0.005 |
| **Nutrients** | | | |
| Total Kjeldahl Nitrogen (as N) | 0.3 | 0.2 | 1.0 |
| Nitrate + Nitrate (as N) | 0.6 | 0.18 | 1.5 |

**Table 2-8**
**O'Neill Forebay Outlet Water Quality Summary, 2004 to 2005**

| Parameter | Concentration (mg/L, unless otherwise noted) | | |
|---|---|---|---|
| | Median | Low | High |
| Ammonia (as N) | 0.02 | 0.01 | 0.12 |
| Total Phosphorus | 0.10 | 0.07 | 0.21 |
| Ortho-Phosphate (as P) | 0.08 | 0.06 | 0.12 |

**Source**: DWR 2009.
Data were collected at O'Neill Forebay Outlet (Check 13) Monitoring Station KA007089.

Table 2-9 is a list of the conclusions and recommendations that are described in the *Sanitary Survey Update Report 2001* that would reduce the potential threat of drinking water quality degradation in O'Neill Forebay.

**Table 2-9**
**Conclusions and Recommendations of the**
***Sanitary Survey Update 2001*, O'Neill Forebay**

| Conclusion | Recommendation |
|---|---|
| The Delta Mendota Canal generally has higher salinity than the California Aqueduct upstream of O'Neill Forebay. In the future, more operational flexibility may be required at O'Neill Forebay to respond to variable water quality conditions. | Develop capability to forecast salinity and identify joint-use operations that could reduce the salinity of the SWP. |
| Fecal coliform bacteria are routinely detected in the north and south swim beaches during low-use periods. | MTBE and pathogen monitoring data should continue to be collected in O'Neill Forebay. |

**Source:** DWR 2001.
**Note:** Recommendations from this study are general and do not commit Reclamation or CSP to the recommended actions. MTBE is no longer used as a fuel additive in California.

**Los Banos Creek Reservoir** Regular water quality monitoring is not conducted at Los Banos Creek Reservoir. The water quality data discussed below are based on discrete samples taken during the investigation of the Los Banos Grandes facilities for the *Los Banos Grandes Facilities Draft EIR* (DWR 1990).

DWR conducted discrete water quality sampling at and near Los Banos Creek Reservoir between 1984 and 1990 as part of a study considering the use of Los Banos Grandes Facilities as an offstream storage reservoir (DWR 1990). Water quality analyses of these data consisted of minerals, minor elements, nutrients, and asbestos. Routine samples were collected from Los Banos Creek at its confluence with Salt Springs, which is about 1.5 miles west of Los Banos Dam and 0.25 mile north of the reservoir. Water quality data are provided in Table 2-10. According to the DWR Publications office, this is the most recent water quality data available for Los Banos Creek Reservoir.

With the exception of Salt Springs, which is not a freshwater supply, the majority of surface water samples that were collected met state and federal drinking water standards (DWR 1990). No pesticides, herbicides, or synthetic organic compounds were detected.

**Table 2-10**
**Summary of Surface Water Quality—Los Banos Creek Reservoir**

| Parameter | Concentration (mg/L, unless otherwise noted) | | |
|---|---|---|---|
| | Los Banos Creek (near Reservoir Dam) | Los Banos Creek Reservoir | Salt Springs |
| Sodium | 86 | 50 | 6,310 |
| Hardness | 284 | 206 | 6,450 |
| Calcium | 52 | 37 | 436 |
| Magnesium | 37 | 27 | 1,302 |
| Potassium | 2.7 | 3.3 | 11.2 |
| Alkalinity | 268 | 178 | 357 |
| Sulfate | 79 | 74 | 14,012 |
| Chloride | 81 | 39 | 3,580 |
| Fluoride | 0.4 | 0.2 | 2.1 |
| Boron | 1.9 | 0.6 | 17 |
| Dissolved Solids | 569 | 372 | 27,986 |
| pH | 8.2 | 8.3 | 7.9 |
| Arsenic | 0.01 | 0.01 | 0.00 |
| Barium | <0.5 | <0.5 | <0.5 |
| Cadmium | <0.005 | <0.005 | <0.005 |
| Chromium | <0.005 | <0.005 | <0.005 |
| Copper | <0.005 | 0.01 | 0.02 |
| Iron | 0.04 | 0.027 | 0.02 |
| Lead | <0.005 | <0.005 | <0.005 |
| Manganese | 0.03 | 0.09 | 0.37 |
| Mercury | <0.001 | <0.001 | <0.001 |
| Selenium | <0.001 | 0.002 | 0.052 |
| Zinc | 0.01 | 0.01 | 0.043 |
| Asbestos | 28.5 | 85 | 55 |
| Turbidity (NTU) | 6 | 3 | 6 |
| Total Ammonia + Organic Nitrogen | 0.5 | 0.8 | 1.9 |
| Dissolved Nitrate + Nitrite | 0.07 | 0.03 | 0.92 |

**Table 2-10**
**Summary of Surface Water Quality—Los Banos Creek Reservoir**

| Parameter | Concentration (mg/L, unless otherwise noted) | | |
|---|---|---|---|
| | Los Banos Creek (near Reservoir Dam) | Los Banos Creek Reservoir | Salt Springs |
| Dissolved Ammonia | 0.01 | 0.08 | 0.06 |
| Dissolved Orthophosphate | 0.03 | 0.05 | 0.02 |
| Total Phosphorus | 0.05 | 0.07 | 0.06 |

Source: DWR 1990.

#### *2.4.3.2 Organic Chemicals*

DWR tests and analyzes organic chemical levels in samples from O'Neill Forebay (though not at San Luis or Los Banos Creek Reservoirs) in March, June, and September of each year using USEPA method chemical scans. In preparation for the *Water Quality in the State Water Project, 2004 and 2005*, published by the DWR in 2009, the following chemicals were screened for five times each during 2004 and 2005 (screening was not conducted in March 2004 at O'Neill Forebay): carbamate pesticides; chlorinated organic pesticides; chlorinated phenoxy herbicides; sulfur pesticides; glyphosate; phosphorus/nitrogen pesticides; and volatile organic compounds (purgeable organics) including benzene, toluene, ethylbenzene, and xylenes (collectively known as BTEX) and MTBE (Table 2-11). Of over 150 organic chemicals screened for five times each at O'Neill Forebay during 2004 and 2005, five individual chemicals were found to be at or above detection levels: 2,4-D; chlorpyrifos; diuron; metolachlor; and simazine. However, levels of all chemicals scanned for, including those five that were at or above detection levels, were below USEPA and/or California Department of Public Health established primary MCLs where MCLs exist. Chlorpyrifos, diuron, and metolachlor have no established MCLs.

**Table 2-11**
**Select Organic Compounds Screened For at O'Neill Forebay[1,2]**

| |
|---|
| Carbamate Pesticides |
| Chlorinated Organic Pesticides |
| Chlorinated Phenoxy Herbicides |
| Sulfur Pesticides |
| Glyphosate |
| Phosphorus/Nitrogen Pesticides |
| Volatile Organic Compounds (Purgeable Organics) including Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX); and Methyl tertiary butyl ether (MTBE) |

**Source:** DWR 2009.

[1] All organic compounds screened for were below primary Maximum Contaminant Levels (MCLs).

[2] USEPA method chemical scans.

Starting December 31, 2003, the sale of gasoline with an MTBE concentration greater than 0.6 percent in volume was prohibited in California. By July 1, 2007, gasoline with MTBE greater than 0.05 percent in volume was prohibited from sale, supply, production or movement (CARB 2003), eliminating it as an additive in all gasoline sold in California. According to a 1997 study conducted by the DWR Division of Operations and Maintenance, MTBE did not appear to be a serious water quality concern at San Luis Reservoir and O'Neill Forebay, despite boating activities (Janic 1999 as cited in DWR 2001). Of 34 samples taken for MTBE at San Luis Reservoir SRA (at three depths) at Gianelli Pumping-Generating Plant, the Pacheco intake, Dinosaur Point boat ramp, and Basalt Use Area boat ramp, only one at Dinosaur Point boat ramp measured 0.002 mg/L, below the primary MCL of 0.005 mg/L but above the secondary MCL of 0.0013 mg/L. All of the remaining 33 samples were below 0.002 mg/L (DWR 2001). Secondary MCLs do not address public health standards but rather taste, odor, or appearance characteristics of treated drinking water. MTBE was not screened for in samples taken at the SRA as part of the *Water Quality in the State Water Project, 2004 and 2005*, published by the DWR in 2009.

#### *2.4.3.3 Boat Fuel Discharges*

Some personal watercraft and fishing boats with small outboard motors are equipped with carbureted two-stroke engines. These engines are referred to as nonconformant engines because they do not conform to California Air Resources Board (CARB) and USEPA emissions standards. As much as 30 percent of the fuel used by nonconformant engines is discharged unburned into the receiving water (California EPA 1999). The use of personal watercraft and other conventional carbureted two-stroke engines has resulted in measurable water quality degradation in some of the nation's lakes and reservoirs. Nonconformant engines intake a mixture of air, gasoline, and oil into the combustion chamber while exhaust gases are expelled from the combustion chamber. Since the intake and exhaust processes occur at the same time, some of the unburned fuel mixture escapes with the exhaust. This expulsion of unburned fuel is the reason for the elevated levels of hydrocarbon emissions from carbureted two-stroke engines. Fuel components discharged in receiving water typically include benzene, toluene, ethylbenzene, and xylenes (BTEX).

Personal watercraft manufacturers introduced the direct-injection and four-stroke engines to the consumer market late in the 1998 model year. Most manufacturers in the U.S. market now offer a full range of direct-injection and four-stroke outboard and personal watercraft engines. A typical marine engine designed to meet new federal regulations releases approximately 90 percent fewer pollutants than earlier engines (CARB 2008). These new engines (referred to as conformant engines) also have concurrent intake and exhaust processes; however, unlike the carbureted two-stroke engines, the intake charge is air only (no fuel is mixed into the intake charge). The fuel is injected directly into the combustion chamber only after the exhaust process has finished, and no unburned fuel escapes with the exhaust. All marine outboard and personal watercraft manufacturers are required to meet USEPA emission standards that went into effect in 2010. This is of particular importance because the engines and vehicles covered by the rule are

significant sources of air pollution. They account for about 26 percent of mobile source volatile organic compound (VOC) emissions and 23 percent of mobile source carbon monoxide (CO) emissions. In 2030, with the new controls, VOC pollutants from marine engines will be reduced by 70 percent for marine engines, and CO will be reduced by 19 percent (USEPA 2008b).

An unknown number of boats in Plan Area water bodies have older, nonconformant two-stroke engines. Fuel components discharged into water by nonconformant two-stroke engines (typically including BTEX) were all below detection levels for primary MCLs in O'Neill Forebay (DWR 2009). Currently, there are no restrictions on using watercraft with two-stroke engines in the Plan Area.

## 2.5 Air Quality

This section describes the area's applicable air quality regulations, the local climate, and the monitored air data from area monitoring stations.

### 2.5.1 Regulatory Setting

The Plan Area is subject to major air quality planning programs required by the Federal Clean Air Act of 1970, its amendments of 1990, and the California Clean Air Act of 1988. Both the federal and state statutes provide for ambient air quality standards to protect public health, timetables for progressing toward achieving and maintaining ambient standards, and the development of plans to guide the air quality improvement efforts of state and local agencies.

#### *2.5.1.1 Federal Requirements*

The Clean Air Act (42 United States Code [USC] 7401 and Amendments of 1970):

> protects and enhances the quality of the Nation's air resources so as to promote the public health and welfare and the productive capacity of its population; to initiate and accelerate a national research and development program to achieve the prevention and control of air pollution; to provide technical and financial assistance to state and local governments for aid in their development and execution of air pollution control programs; and to encourage and assist the development and operation of regional air pollution control programs.

The Clean Air Act requires the USEPA to publish national primary standards to protect public health and more stringent national secondary standards to protect public welfare (40 CFR 50). States and local governments are responsible for the prevention and control of air pollution. States, which are divided into air quality control regions, are required to submit State Implementation Plans (SIPs) for USEPA approval (40 CFR 51). SIPs provide strategies for implementation, maintenance, and enforcement of national primary and secondary ambient air quality standards for each air quality control region.

Other provisions of the Act include: standards of performance for new stationary sources, motor vehicle emission and fuel standards, national emission standards

for hazardous air pollutants, a study of particulate emissions from motor vehicles, and a study of the cumulative effect of all substances and activities that may affect the stratosphere, especially ozone in the stratosphere.

The USEPA oversees state and local implementation of Federal Clean Air Act requirements. In addition, the USEPA sets emission standards for many mobile sources, such as new on-road motor vehicles, including transport trucks that are sold outside of California. The USEPA also sets emission standards for various classes of new off-road mobile sources, including locomotives that are sold throughout the country.

Hydrocarbons and nitrogen oxides ($NO_x$) are precursors to ozone (smog) formation, and recreational watercraft can contribute substantial emissions of ozone precursors. The USEPA's "Final Rule for New Spark-Ignition Marine Engines" (EPA 1996) adopted exhaust emission regulations for hydrocarbons and $NO_x$ from outboard and personal watercraft marine engines. The 1996 USEPA regulations were phased in between 1998 and 2006, with the standard becoming more stringent as the phase-in period progressed.

The USEPA adopted the "Final Rule: Control of Emissions from Nonroad Spark-Ignition Engines and Equipment" (EPA 2008a), which regulates air emission standards for hydrocarbons, $NO_x$, and CO. The regulations apply to 2010 and newer outboard and personal watercraft engines (EPA 2009). The new USEPA 2008 regulations estimate that by 2030, the volatile organic compounds (VOC) emissions for marine engines will be reduced by 70 percent and CO emissions will be reduced by 19 percent. The USEPA 2008 regulations are also expected to achieve more than a 60 percent reduction in exhaust emission standards for hydrocarbon and $NO_x$ emissions (EPA 2008b).

The 2008 USEPA emission standards for hydrocarbons and $NO_x$ are consistent with the 2008 CARB hydrocarbons and $NO_x$ exhaust emission standards (originally adopted in 1998). The USEPA has also adopted CO emission standards for recreational marine and personal watercraft engines (EPA 2008b).

#### *2.5.1.2 State and Local Requirements*

Under California law, the responsibility to carry out air pollution control programs is split between the CARB and local or regional air pollution control agencies. The CARB shares the regulation of mobile sources with the USEPA.

The Plan Area is on the western edge of the San Joaquin Valley Air Basin (SJVAB), which includes Fresno, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare counties, and portions of Kern County. The Plan Area is located entirely in Merced County and falls in the San Joaquin Valley Air Pollution Control District (SJVAPCD). The SJVAPCD has the authority to require permits for stationary sources, impose emission standards, set fuel or material specifications, and establish rules and operational limits to reduce air emissions.

One of the SJVAPCD rules, the Indirect Source Review rule, is intended to reduce exhaust emissions of $NO_x$ and particulate matter 10 microns or less in

diameter ($PM_{10}$) from new development projects within the air basin. It is not certain whether this rule applies to any of the potential activities that could take place under the Plan. In general, construction activities emitting exhaust $NO_x$ or $PM_{10}$ emissions of 2 tons per year or more would be subject to this rule. New development typically contributes to air pollution in the San Joaquin Valley by increasing the number of vehicles in the area as well as the vehicle miles traveled. Projects subject to the Indirect Source Review rule must submit an Air Impact Assessment application with commitments to reduce construction exhaust $NO_x$ and $PM_{10}$ emissions by 20 percent and 45 percent, respectively, when compared with the average exhaust emissions of the California construction fleet. The application should also show commitments to reduce $NO_x$ operational baseline emissions by 33.3 percent over a 10-year period and $PM_{10}$ operational baseline emissions by 50 percent over a 10-year period.

SJVAPCD Regulation VIII, Fugitive $PM_{10}$ Prohibitions, Rule 8021 limits fugitive dust ($PM_{10}$) emissions during construction activities by placing limits on visible dust plumes. The purpose of Regulation VIII, Rule 8021 is to limit the ambient concentrations of $PM_{10}$ from construction activities.

In 1998, CARB adopted hydrocarbon and $NO_x$ emission standards for marine outboard and personal watercraft engines. The standards were implemented in three stages: 2001 exhaust emission standards for 2001–2003 engines, 2004 exhaust emission standards for 2004–2007 engines, and 2008 exhaust emission standards for 2008 and later engines. CARB requires each new engine to have a label that displays one to three stars. The number of stars indicates the exhaust emission standards with which the engine complies. One-star engines comply with 2001 exhaust emission standards, while three-star engines comply with 2008 exhaust emission standards (CARB 2008). In 2008, CARB proposed CO emission standards for marine outboard and personal watercraft engines that are currently under review and have not been adopted yet. The proposed CO emission standards are consistent with the USEPA 2008 CO emission standards (see "Federal Requirements," above). The state CO emission standards are required of 2009 and newer marine outboard and personal watercraft engines (CARB 2008).

In March 2010, CARB proposed new regulations to control evaporative emissions from spark-ignition marine vessels, to be implemented starting in 2014. For model year 2012 or later marine vessels with an engine rating less than 30 kilowatts (kW), CARB has proposed that all state-level evaporative emission standards and test procedures match, or are compatible with, federal standards set by the USEPA. The same standards would be applied to model year 2012 and 2013 marine vessels with an engine rating greater than 30 kW. For model year 2014 and later marine vessels with an engine rating greater than 30 kW, CARB has proposed more stringent standards than the USEPA standards. For 2016 and later marine vessels with an engine rating greater than 30 kW, CARB has proposed to lower the emission standards for fuel hose permeation (emissions from marine vessels that occur from the leakage of the fuel through rubber fuel hoses; CARB 2010c).

The California Code of Regulations (Title 13, Division 3, Chapter 9, Article 3) imposes emission standards for off highway vehicles (OHVs) and engines produced on or after January 1, 1997. OHVs that do not meet the emissions standards are eligible for OHV Red Sticker registration and may operate only during certain riding seasons and facilities as regulated by the California Air Resources Board. Emission-compliant OHVs are eligible for OHV Green Sticker registration and can be operated year-round at any OHV facility.

In addition, CARB has proposed Low Emission Vehicle (LEV III) standards to be phased in from 2014 to 2022. The LEV II standard should have been fully phased in with model year 2010 for light-duty vehicles. The proposed LEV III emission standards would introduce new combined VOC and $NO_x$ emissions standards.

#### *2.5.1.3 General Conformity*

The Clean Air Act requires that nonattainment and maintenance areas (with respect to the National Ambient Air Quality Standards) prepare State Implementation Plans to achieve the standards. Federal actions need to demonstrate conformity to any State Implementation Plans of the regional air basin. The General Conformity Rule (GCR) (Title 40 CFR Part 51.853) requires that the responsible federal agency of an undertaking make a determination of conformity with the State Implementation Plan. Each action must be reviewed to determine whether it (1) qualifies for an exemption listed in the GCR, (2) results in emissions that are below GCR de minimis emissions thresholds, or (3) would produce emissions above the GCR de minimis thresholds applicable to the specific area, requiring a detailed air quality conformity analysis. The GCR de minimis levels are based on the nonattainment classification of the air basin. The SJVAB is a federal ozone nonattainment area, classified as extreme. The SJVAB is also a federal $PM_{2.5}$ nonattainment area and a federal $PM_{10}$ maintenance area. As such, the GCR de minimis thresholds for the Plan Area are as follows:

- Ozone ($O_3$): 10 tons per year
- VOC (an ozone precursor): 10 tons per year
- $NO_x$ (an ozone precursor): 10 tons per year
- CO: Not applicable because the project area is in attainment of federal CO standards
- $PM_{10}$: 100 tons per year for maintenance areas
- $PM_{2.5}$: 100 tons per year for all nonattainment areas.
- $SO_2$: Not applicable because the project area is in attainment of federal $SO_2$ standards.

#### *2.5.1.4 National and State Ambient Air Quality Standards*

National and state ambient air quality standards have been established for six ambient air pollutants, commonly referred to as “criteria pollutants.” The state standards were established in 1969. The USEPA established the federal standards after the passage of the Clean Air Act of 1970. These pollutants include CO, $O_3$, nitrogen dioxide ($NO_2$), sulfur dioxide ($SO_2$), lead, $PM_{10}$, and particulate matter 2.5 microns or less in diameter ($PM_{2.5}$). The ambient air quality standards

intended to protect the public health and welfare, especially of those most susceptible to respiratory distress, such as asthmatics, the very young, the elderly, people weak from other illnesses or diseases, or persons who engage in heavy work or exercise. These standards specify the concentration of pollutants the public can be exposed to without experiencing adverse health effects. National and state standards are reviewed and updated periodically based on new health studies. California ambient standards tend to be at least as protective as federal ambient standards and are often more stringent.

Based on these standards, regional areas such as the San Joaquin Valley Basin are given an air quality status "label" by the federal and state regulatory agencies for planning purposes. Areas with monitored pollutant concentrations that are lower than ambient air quality standards are designated as "attainment areas" on a pollutant-by-pollutant basis. When monitored concentrations exceed ambient standards, areas are designated as "nonattainment areas." An area that recently exceeded ambient standards but is now in attainment is designated as a "maintenance area." An area is designated "unclassified" if air quality data are inadequate to assign it an attainment or nonattainment designation. Nonattainment areas are further classified based on the severity and persistence of the air quality problem as "moderate," "severe," "serious," or "extreme."

#### *2.5.1.5 Regulations for Climate Change and Greenhouse Gases*

**Federal Greenhouse Gas Regulations**

*Endangerment and Cause or Contribute Findings for Greenhouse Gases*: On December 7, 2009, the USEPA signed two distinct findings regarding GHGs under section 202(a) of the Clean Air Act:

- Endangerment Finding: The USEPA found that the current and projected concentrations of the six key well-mixed GHGs--carbon dioxide ($CO_2$), methane ($CH_4$), nitrous oxide ($N_2O$), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride ($SF_6$)--in the atmosphere threaten the public health and welfare of current and future generations.
- Cause or Contribute Finding: The USEPA found that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution which threatens public health and welfare.

These findings do not themselves impose any requirements on industry or other entities. However, this action is a prerequisite to finalizing the USEPA's GHG emission standards for light-duty vehicles, which USEPA proposed in a joint proposal including the Department of Transportation's proposed Corporate Average Fuel Economy (CAFE) standards on September 15, 2009.

*Light-Duty Vehicle Regulations:* On April 1, 2010, USEPA and the National Highway Traffic Safety Association (NHTSA) announced a joint final rule establishing a national program under which automobile manufacturers would be able to build a single light-duty national fleet that satisfies all requirements under

both the national program and the standards of California and other states, while ensuring that consumers still have a full range of vehicle choices. The final combined USEPA and NHTSA standards that make up the first phase of this national program apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. They require these vehicles to meet an estimated combined average emissions level of 250 grams of carbon dioxide per mile, equivalent to 35.5 miles per gallon (mpg) if the automobile industry were to meet this carbon dioxide level solely through fuel economy improvements. Together, these standards will cut GHG emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012-2016). The agencies are now in the process of developing a rulemaking to set standards for light-duty vehicles with model years 2017-2025 (USEPA 2011a).

**California Greenhouse Gas Regulations**

*Assembly Bill (AB) 32 and Scoping Plan*: In September 2006, Governor Arnold Schwarzenegger signed Assembly Bill 32, the California Climate Solutions Act of 2006, which requires that statewide GHG emissions be reduced to 1990 levels by 2020. The CARB released a proposed Scoping Plan on October 15, 2008 and CARB approved it on December 12, 2008. The Scoping Plan contains the main strategies to achieve reductions in GHG emissions in California to 1990 levels, which means cutting approximately 30 percent from business-as-usual emissions levels projected for 2020, or about 15 percent from today's levels.

*Senate Bill 375 (SB 375):* The bill enhances California's ability to reach its AB 32 goals by promoting good planning with the goal of more sustainable communities. SB 375 requires CARB to develop regional GHG emission reduction targets for passenger vehicles. CARB is to establish targets for 2020 and 2035 for each region covered by one of California's 18 metropolitan planning organizations (MPOs).

CARB appointed the Regional Targets Advisory Committee (RTAC), as required under SB 375, on January 23, 2009. The RTAC's charge was to advise CARB on the factors to be considered and methodologies to be used for establishing regional targets. The RTAC provided its recommendation to CARB on September 29, 2009. CARB adopted the final targets on September 23, 2010. CARB must update the regional targets every eight years (or four years if it so chooses) consistent with each MPO update of its RTP.

*AB 1493 (Pavley Standards)*: In September 2004 CARB approved regulations to reduce GHG emissions from new motor vehicles. In September 2009 CARB adopted amendments to these regulations. These regulations are part of AB 1493 (also known as the Pavley Standards) and were designed to achieve the maximum feasible and cost effective reduction in GHG emissions from motor vehicles. The regulations apply to new passenger vehicles and light duty trucks beginning with the 2009 model year. When fully phased in, the near term (2009-2012) standards will result in about a 22 percent reduction as compared to the 2002 fleet, and the mid-term (2013-2016) standards will result in about a 30 percent reduction.

CARB elected to incorporate the GHG emission standards into the current Low-Emission Vehicle (LEV) program, along with the other light and medium-duty automotive emission standards. Accordingly, there is a $CO_2$-equivalent fleet average emission requirement for the passenger car/light-duty truck 1category, and another for the light-duty truck 2 category, just as the LEV program currently has fleet average Non-methane organic gas (NMOG) emission requirements for both categories of vehicles. This approach was taken to ensure that manufactures can meet the standards while continuing to provide the full range of vehicles available today.

**San Joaquin Valley Air Pollution Control District Greenhouse Gas Regulations** For CEQA and NEPA purposes, there is currently no numeric threshold of significance for GHG emissions. CEQA requires lead agencies (such as APCDs) to establish specific procedures for administering their responsibilities under CEQA, including evaluation of the GHG impacts of a project. Therefore, the SJVAPCD developed guidance in cases where it is serving as the lead agency. Subsequently, the SJVAPCD adopted the *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA* in December 2009. The guidance relies on the use of performance based standards, otherwise known as Best Performance Standards (BPS) to assess significance of project specific GHG emissions on global climate change during the environmental review process, as required by CEQA. According to SJVAPCD guidelines, if BPS are adopted for a project, the GHG cumulative impacts can be considered less than significant. As of January 2012, the BPS that have been approved apply primarily to stationary sources. For projects that involve mobile sources such as this Plan, demonstration of a 29 percent reduction in GHG emissions, from business-as-usual, or compliance with an approved GHG plan or mitigation program is required to determine that a project would have a less than cumulatively significant impact.

### 2.5.2 Ambient Air Quality

The SJVAB and the SJVAPCD are in the San Joaquin Valley, an inter-mountain valley bound to the east by the Sierra Nevada, to the west by the Coastal Mountain Range, and to the south by the Tehachapi Mountains. The SJVAB is predominately agriculturally oriented, with some industrial activities in the cities of Bakersfield, Lathrop, Kingsburg, Madera, Riverbank, Corcoran, Stockton, Fresno, Tracy, Elk Hills, and Avenal. Of the land, 31 percent is publicly owned, of which 29 percent is managed by the federal government, and 2 percent is managed by the state.

Airflow patterns within the SJVAB change throughout the year. Summer conditions are hot and dry, with airflow dominated by a semipermanent subtropical high-pressure zone causing winds to be light and variable. Summer inversion layers are also common, further decreasing dispersion throughout the basin during summer months. Winds in some portions of the Plan Area are known to be much stronger. Between April and August, wind velocities in portions of the Plan Area are 10 miles per hour or above over 65 percent of the time. No data are

available regarding the effects of local winds on air quality in the immediate vicinity of the Plan Area.

The SJVAB experiences mild winters dominated by frontal systems and troughs originating in the northern Pacific Ocean. Winter rains are followed by atmospheric instabilities and increased vertical mixing of the atmosphere, which leads to improved air quality during winter months. Fronts and troughs are frequently pushed north by high-pressure systems, which causes decreased winds and poorer dispersion. Airflow and dispersion are greatest during spring and fall months with increased winds. Spring and fall temperature differences between coastal and valley air cause wind direction to change frequently while also increasing wind velocity. The strongest winds in the region occur from April through August, with velocities as high as 30 to 40 miles per hour.

The concentration of air pollutants in the SJVAB varies from day to day depending on the ability of the atmosphere to disperse pollutants. Dispersion is largely influenced by seasonal changes in airflow and by the surrounding topography, namely the mountain ranges surrounding the SJVAB. Air quality in Merced County exceeds the standards for ozone and $PM_{10}$ (both of which are designated criteria pollutants) several days each year. Despite the area's extremely low emissions, it is subject to pollutants transported from areas of higher population density, higher vehicle traffic, and industrial activity. Major sources of $PM_{10}$, carbon monoxide, nitrogen oxides, reactive organic gases, and other air pollutants exist in the metro areas of Stockton, Modesto, Merced, Fresno, Visalia, and Bakersfield. Northerly winds also transport pollutants from the greater Sacramento area and the San Francisco Bay Area. Poor dispersion and mixing allow some accumulation of pollutants in the vicinity of the Plan Area. However, air quality in Merced County has been improving over the past decade as shown by decreased concentrations of ozone, $PM_{10}$, carbon monoxide, and nitrogen dioxide. Nonattainment of standards usually occurs during summer months when airflow and dispersion are lowest.

The SJVAB, which contains the Plan Area and is regulated by SJVAPCD, attains the federal and state standards (or is unclassified) for lead, CO, $SO_2$, and $NO_2$. The SJVAB is a nonattainment area for the state standards of $O_3$ (1-hour and 8-hour), $PM_{10}$, and $PM_{2.5}$. The SJVAB is also nonattainment for the federal 8-hour $O_3$ standard (the federal 1-hour $O_3$ standard was revoked in 2005) and $PM_{2.5}$ standards. In September 2008, the USEPA re-designated the region as attainment for the federal $PM_{10}$ standard, and the region is now considered a maintenance area for the federal $PM_{10}$ standards. In November 2009, the USEPA designated the SJVAB as nonattainment for the federal $PM_{2.5}$ standard. National and state ambient air quality standards, as well as the attainment status for Merced County and the SJVAB, are listed in Table 2-12.

**Table 2-12**
**State and Federal Ambient Air Quality Standards**

| Pollutant | Averaging Time | California Standards[1] | National Standards[2] | | Merced State Status | Merced National Status |
|---|---|---|---|---|---|---|
| | | Concentrations[3] | Primary[3,4] | Secondary[3, 5] | | |
| Ozone | 8-hour<br>1-hour | 0.07 ppm<br>0.09 ppm | 0.075 ppm<br>-- | Same as Primary<br>-- | Nonattainment<br>Nonattainment/Severe | Nonattainment/Extreme<br>-- |
| Carbon Monoxide | 8-hour<br>1-hour | 9.0 ppm<br>20.0 ppm | 9 ppm<br>35 ppm | None | Attainment/ Unclassified | Attainment/ Unclassified |
| Nitrogen Dioxide | Annual Arithmetic Mean<br>1-hour | 0.03 ppm<br>0.18 ppm | 0.053 ppm<br>0.100 ppm[6] | Same as Primary<br>None | Attainment | Attainment/ Unclassified |
| Sulfur Dioxide | 24-hour<br>3-hour<br>1-hour | 0.04 ppm<br>--<br>0.25 ppm | --<br>--<br>0.075[7] | --<br>0.5 ppm<br>-- | Attainment | Attainment/ Unclassified |
| Fine Particulate Matter ($PM_{10}$) | Annual Arithmetic Mean<br>24-hour | 20 $\mu g/m^3$<br>50 $\mu g/m^3$ | --<br>150 $\mu g/m^3$ | Same as Primary<br>Same as Primary | Nonattainment | Attainment |
| Fine Particulate Matter ($PM_{2.5}$) | Annual Arithmetic Mean<br>24-hour | 12 $\mu g/m^3$<br>-- | 15 $\mu g/m^3$<br>35 $\mu g/m^3$ | Same as Primary<br>Same as Primary | Nonattainment | Nonattainment |

**Sources:** California Air Resource Board, http://www.arb.ca.gov; San Joaquin Valley Air Pollution Control District, http://www.valleyair.org/aqinfo/attainment.htm#Federal%20Standards, accessed January 2012.

µg/m3 = micrograms per cubic meter ppm = parts per million

[1] California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, suspended particulate matter—$PM_{10}$, $PM_{2.5}$, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[2] National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over three years, is equal to or less than the standard. For $PM_{10}$, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98% of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact USEPA for further clarification and current federal policies.

[3] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[4] National 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] National Secondary Standards: The levels of air quality deemed necessary by the federal government to protect the public welfare from any known or anticipated adverse effects to a pollutant.

[6] To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010).

[7] On June 2, 2010, the USEPA established a new 1-hour $SO_2$ standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations.

Adverse health effects associated with criteria pollutants of public health concern are summarized in Table 2-13. Table 2-14 provides a summary of criteria air pollutant monitoring results in Merced County for the period 2007 through 2010.

**Table 2-13**
**Health Effects Summary of Air Pollutants of Public Health Concern**

| Air Pollutant | Adverse Effects |
|---|---|
| Ozone | Aggravation of respiratory and cardiovascular diseases |
| | Reduced lung function |
| | Increased cough and chest discomfort |
| Carbon Monoxide | Aggravation of some heart diseases |
| | Reduced tolerance for exercise |
| | Impairment of mental function |
| | Birth defects; death at high levels of exposure |
| Fine Particulate Matter ($PM_{10}$ and $PM_{2.5}$) | Reduced lung function |
| | Aggravation of respiratory and cardiovascular diseases |
| | Increases in mortality rate |
| | Reduced lung function growth in children |

**Source**: BAAQMD 2011.

**Table 2-14**
**Summary of Criteria Air Pollutant Monitoring**

| Pollutant | 2007 | 2008 | 2009 | 2010 |
|---|---|---|---|---|
| **Ozone 2007 to 2009 at S. Coffee Avenue Station, Merced County** | | | | |
| Peak 1-hour concentration (ppm) | 0.105 | 0.131 | 0.094 | 0.117 |
| Days above federal standard | 0 | 3 | 0 | 0 |
| Days above state standard | 5 | 14 | 0 | 7 |
| Peak 8-hour concentration (ppm) | 0.096 | 0.120 | 0.083 | 0.096 |
| Days above federal standard | 18 | 33 | 15 | 14 |
| Days above state standard | 25 | 54 | 35 | 31 |
| **$NO_2$ 2007 to 2009 at S. Coffee Avenue Station, Merced County** | | | | |
| Peak 1-hour concentration (ppm) | 0.050 | 0.060 | 0.056 | 0.050 |
| Days above state standard | 0 | 0 | 0 | 0 |
| Annual average (ppm) | 0.009 | 0.009 | 0.008 | 0.007 |
| **$PM_{10}$ 2007 to 2009 at 2334 M Street Station, Merced County** | | | | |
| Peak 24-hour concentration (micrograms per cubic meter) | 69.0 | 76.8 | 65.1 | 93.4 |
| Days above state standard (measured) | 6 | 14 | 5 | 3 |
| State annual average (micrograms per cubic meter) | 29.7 | 34.5 | 26.9 | 25.5 |

**Source:** CARB ADAM 2007, 2008, 2009, and 2010, Online Air Quality Data Summaries.
**Note:** Data for carbon monoxide, $PM_{2.5}$, and sulfur dioxide in the Plan Area were not available.

Criteria emissions in the Plan Area were estimated using the CARB EMFAC 2007 and Offroad 2007 models for motor vehicles and motorized vessels, respectively, and are shown in Table 2-15, below. The estimates were developed using vehicle trip and boat launch data for fiscal year 2007–2008, the most recent period for which peak vehicle daily trip data are available.

**Table 2-15**
**Existing Criteria Pollutant Emissions in the Plan Area (2007–2008)**

| Type | CO | VOC | $NO_x$ | $PM_{10}$ | $PM_{2.5}$ | $SO_2$ |
|---|---|---|---|---|---|---|
| Vehicle Emission Factors (lb/mi) | 0.0135 | 0.0013 | 0.0012 | 8.423E-05 | 5.23E-05 | 9.00E-06 |
| Vehicle Emissions (tons/yr) | 6.437 | 0.631 | 0.585 | 0.040 | 0.025 | 0.004 |
| Boat Emission Factors (ton/boat) | 0.00037 | 1.97E-04 | 1.80E-05 | 2.59E-05 | 2.59E-05 | 4.48E-08 |
| Evap Boat Factors (tons/boat) | | 2.71E-05 | | | | |
| Boat Emissions (tons/day) | 0.00971 | 0.00591 | 0.00047 | 0.00068 | 0.00068 | 0.00000 |
| Boat Emissions (tons/year) | 3.55 | 2.16 | 0.17 | 0.25 | 0.25 | 0.00 |
| **Total Emissions (tons/year)** | **9.982** | **2.790** | **0.758** | **0.290** | **0.275** | **0.005** |
| **SJVAPCD Thresholds (tons/year)** | **NA** | **10** | **10** | **15** | **15** | **NA** |
| **GCR De Minimis Thresholds (tons/yr)** | **Attainment** | **10** | **10** | **100** | **100** | **Attainment** |

NA = No threshold exists

As shown in Table 2-15, total emissions from the Plan Area are well below the SJVAPCD thresholds (where thresholds exist), and in attainment of or well below the GCR de minimis thresholds for the criteria pollutants listed in Table 2-12. Emissions for ozone are presented as $NO_x$ and VOC, as ozone is produced by the photochemical reaction of those pollutants.

### 2.5.3 Greenhouse Gas Emissions

GHG emissions from existing vehicle and motorized watercraft use were estimated using the CARB EMFAC 2007 and Offroad 2007 models, respectively, and are presented in Table 2-16. Carbon dioxide equivalents ($CO_2e$) is a quantity that describes, for a given mixture and amount of GHGs (which might consist of pollutants other than carbon dioxide [$CO_2$]), the amount of $CO_2$ that would have the same global warming potential (GWP), when measured over a specified timescale (generally, 100 years). The $CO_2e$ for a gas is obtained by multiplying the mass and the GWP of the gas. GWPs for the non-$CO_2$ pollutants of$CH_4$ and $N_2O$ were obtained from the California Climate Action Registry (CCAR) General Reporting Protocol (GRP) version 3.1. GWPs are values used to compare the abilities of different GHGs to trap heat in the atmosphere. GWPs are based on the heat-absorbing ability of each gas relative to that of $CO_2$ (whose GWP is 1), as well as the decay rate of each gas (the amount removed from the atmosphere over a given number of years). The estimates were developed using vehicle trip and boat launch data for fiscal year 2007–2008, the most recent period for which peak vehicle daily trip data are available.

**Table 2-16**
**Existing GHG Emissions (2007–2008)**

| Parameter | Pollutant | | | |
|---|---|---|---|---|
| | $CO_2$ | $CH_4$ | $N_2O$ | $CO_2e$ |
| Vehicle Emission Factors (lb/mi) | 0.91 | 1.05E-04 | 0.06 | 20.61 |
| Vehicle Emissions (tons/yr) | 435.34 | 0.05 | 30.29 | 9825.12 |
| Boat Emission Factors (ton/boat) | 2.83E-03 | 1.23E-05 | 7.92E-07 | 3.33E-03 |
| Boat Emissions (tons/day) | 0.07 | 3.23E-04 | 2.09E-05 | 0.09 |
| Boat Emissions (tons/year) | 27.23 | 0.12 | 0.01 | 32.08 |
| Total Emissions (tons/year) | 462.58 | 0.17 | 30.29 | 9,857.20 |
| Total Emissions (metric tons/year) | 419.64 | 0.15 | 27.48 | 8,942.30 |

**Note:** The data shown were calculated using the 2010 CARB GHG inventory for the state, which only covered up to 2008.

## 2.6 Biological Resources

### 2.6.1 Introduction

Significant biological resources are resources that are important to the essential character of the area, important regionally or statewide, or documented as significant on recognized protection or preservation lists (DPR 2002). These resources include sensitive natural communities characterized by plant assemblages with unique species of plants and wildlife; species that are restricted in distribution, supported by distinctive soil conditions, or considered locally rare; and species that potentially support other special-status species.

The designation of a special-status species is determined by municipal, county, state, and/or federal regulations. These species often have declining populations, are locally endemic, and/or have limited or restricted distribution within their known range. The specific designations of special-status species are as follows:

- Endangered or threatened under the federal Endangered Species Act (ESA) and/or the California Endangered Species Act (CESA);
- Species of Special Concern identified by DFG;
- Fully protected species under California Fish and Game Code Sections 3511, 4700, 5050 and 5515;
- Birds of Conservation Concern as listed by the U.S. Fish and Wildlife Service (USFWS);
- Migratory birds protected under the Migratory Bird Treaty Act;
- Fisheries of economic importance under the Magnuson-Stevens Fisheries Conservation and Management Act;
- Plants on the California Native Plant Society's (CNPS) List 1B (plants rare, threatened, or endangered in California and elsewhere) or List 2 (plants rare, threatened, or endangered in California but more common elsewhere). For the purposes of this report, special-status species will not include CNPS List 3 or 4 plants; and
- Western Bat Working Group

The introduction and perpetuation of invasive and exotic plant species are also regulated under state and federal law. These species have the ability to alter vegetation communities and threaten plant species, animal species, and vegetation communities.

#### *2.6.1.1 Regulatory Setting*

Significant biological resources are provided protection through various state and federal regulations. Consultation with regulatory agencies is required during the planning process of a project so that the appropriate level of protection is provided to a species, through methods that include, but are not limited to, avoidance of habitat disturbance, minimization of disturbance, and mitigation of disturbance. Agency consultation is discussed further in Chapter 6. A list of the pertinent regulations is included below.

**Federal Regulations**

**Federal Endangered Species Act.** The ESA of 1973 provides protection for animal and plant species that are in danger of extinction (endangered) and those that may become so in the foreseeable future (threatened). The USFWS and the National Oceanic and Atmospheric Administration-National Marine Fisheries Service (NMFS) have regulatory authority over projects pursuant to the ESA that may affect the continued existence of a federally listed (threatened or endangered) species. Section 9 of the ESA prohibits the take of federally listed species. Take is defined under the ESA, in part, as killing, harming, or harassment of such species. Under federal regulations, take is further defined to include habitat modification or degradation where it actually results in death or injury to wildlife by substantially impairing essential behavioral patterns, including breeding, feeding, or sheltering.

Section 7 of the ESA outlines procedures for federal interagency cooperation and participation in the conservation and recovery of federally listed species and designated critical habitat. Section 7(a)(2) requires federal agencies to consult with other federal agencies with regulatory authority to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or to destroy or adversely modify designated critical habitat. Critical habitat identifies specific areas that have the physical and biological features that are essential to the conservation of a listed species, and that may require special management considerations or protection.

For projects where a federal nexus is not involved and take of a listed species may occur, the project proponent may seek to obtain an incidental take permit under Section 10(a) of the ESA. Section 10(a) of the ESA allows the USFWS to permit the incidental take of listed species if such take is accompanied by a Habitat Conservation Plan (HCP) that includes components to minimize and mitigate impacts associated with the take.

**Migratory Bird Treaty Act.** Pursuant to this international treaty between the United States and Canada, Mexico, Russia and Japan, it is unlawful to pursue,

hunt, take, capture and/or kill a migratory bird. This includes the removal of all active nests during the breeding season.

**Bald and Golden Eagle Protection Act.** Under this act, take of a bald or golden eagle without a permit from the Secretary of the Interior is illegal. This includes impacts to known nests when eagles are not present.

**Executive Order 13112 (Invasive Species).** This Executive Order curtails the introduction of invasive species by restricting federal agencies from authorizing a project that the agency suspects would introduce or spread an invasive species.

**Clean Water Act, Section 404.** USACE regulates the placement of fill into Waters of the U.S. under Section 404 of the Clean Water Act. Waters of the U.S. include lakes, rivers, streams, and their tributaries and wetlands. Wetlands are defined under Section 404 as areas that are inundated or saturated by surface or ground water at a frequency and duration that are sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions. Activities that require a permit under Section 404 include, but are not limited to, placing fill or riprap, grading, mechanized land clearing, and dredging. Any activity that results in the deposit of dredge or fill material within the "Ordinary High Water Mark" of Waters of the U.S. usually requires a permit from the USACE, even if the area is dry at the time the activity takes place. A variety of processes are available for obtaining Section 404 authorization from the USACE, ranging from the Nationwide Permit Process to the Individual Permit Process.

USACE Section 404(b) guidelines specify a three-step process for meeting a national policy of no net 1oss of wetlands: (1) avoidance—finding another alternative that does not involve wetlands damage, (2) minimization—minimizing the wetlands impact of the project design, and then, only after the first two conditions have been met, and (3) mitigation—compensating for the unavoidable wetlands damage.

**Executive Order 11990 (Protection of Wetlands 1977).** Executive Order 11990 requires a construction agency to "… avoid to the extent possible the long- and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative." Executive agencies, in carrying out their land management responsibilities, are to take action that will minimize the destruction, loss, or degradation of wetlands, and take action to preserve and enhance the natural and beneficial values of wetlands. Each agency shall avoid undertaking or assisting in wetland construction projects unless the head of the agency determines that there is no practicable alternative to such construction and that the proposed action includes measures to minimize harm.

### State Regulatory Issues

**California Endangered Species Act.** Pursuant to the CESA, a permit from the DFG is required for projects that could result in take of state-listed threatened or

endangered species. Section 2080 of the CESA prohibits take of state-listed species. The take of state-listed species incidental to otherwise lawful activities requires a permit, pursuant to Section 2081(b) of the CESA. The state has the authority to issue an incidental take permit under Section 2081 of the Fish and Game Code, or to coordinate with the USFWS during the Section 10(a) process to make the federal permit also apply to state-listed species.

**Fully Protected Species.** The DFG has jurisdiction over fully protected species of birds, mammals, amphibians, reptiles and fish pursuant to California Fish and Game Code Sections 3511, 4700, 5050, and 5515. Possession or take of fully protected species is prohibited, and DFG will not issue a take license or permit for these species.

**Section 1600 of the California Fish and Game Code.** All diversions, obstructions, or changes to the natural flow of a bed, channel, or bank of any river, stream, or lake in California that supports wildlife resources is subject to regulation by the DFG, pursuant to Section 1601 of the California Fish and Game Code. Section 1601 makes it unlawful for any governmental agency, state or local, and any public utility to substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake without first notifying the DFG of such activity. The regulatory definition of a stream is a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation. The DFG's jurisdiction within altered or artificial waterways is based on the value of those waterways to fish and wildlife. A DFG Lake and Streambed Alteration Agreement must be obtained for any project that would result in an impact to a river, lake, or stream that would adversely affect any fish or wildlife resource.

**Section 671 of the California Fish and Game Code.** Section 671 of the California Fish and Game Code regulates the importation, transportation, and possession of live restricted animals. Under this regulation, all members of the genus *Dreissena* (including zebra mussels or quagga mussels) are restricted species that have been identified as "detrimental animals" because they pose a threat to native wildlife, to the agriculture interests of the state, and/or to public health and safety.

**Section 2302 of the California Fish and Game Code.** Any district, agency or authority that owns or manages a reservoir where public recreational, boating or fishing activities are permitted is required to (1) assess the vulnerability of the reservoir to infestation by dreissenid mussels; and (2) develop and implement a program to prevent the introduction of dreissenid mussels that includes public education, monitoring, and management of the recreational activities, along with other actions deemed appropriate by the owner or manager.

**Section 3503 of the California Fish and Game Code.** Section 3503.5 states that it is "unlawful to take, possess, or destroy any birds-of-prey in the Orders

Falconiformes or Strigiformes." These orders include hawks, owls, eagles, and falcons. DFG considers the loss of eggs of these species or disturbance or destruction of an active nest a violation of this code. This statute does not provide for the issuance of any type of incidental take permit. Section 3503 prohibits unlawful take, possession, or needless destruction of the nest or eggs of any bird. DFG also has jurisdiction over unlawful take of migratory nongame birds (California Fish and Game Code Section 3513).

**Native Plant Protection Act.** This act requires all state agencies to promote programs that protect endangered or rare native plants.

**Conservation-Related Regulations Near the Plan Area**

The Grasslands Ecological Area (GEA) is located east of the Plan Area on the opposite side of I-5. This non-jurisdictional area is composed of federal refuges, state wildlife refuges, state parks and recreation areas, and private lands. The GEA was established by the USFWS as an area where public easements for wetland conservation could be purchased. Within the GEA lies the largest known contiguous wetland in Central California. A portion of this area, northeast of O'Neill Forebay Wildlife Area, was designated in 2005 as a "Wetland of International Importance" under the Convention on Wetlands of International Importance (Ramsar Convention) (California Watchable Wildlife 2008).

Pacheco State Park, to the west of San Luis Reservoir, adopted a General Plan in 2006 for long-term planning and management for the park. The General Plan includes guidelines for protecting the park's unique natural resources, such as windswept oaks on grassy rolling hills, riparian and oak woodland, savanna, chaparral, scrub, grasslands, and mesic herbaceous (wetland) plant communities.

Portions of Santa Nella on the eastern border of the Plan Area have a Habitat Conservation Plan (HCP) in place for the San Joaquin kit fox. Along the western border of the Plan Area, another HCP is under development by the County of Santa Clara and will include the San Joaquin kit fox among its covered species. The San Joaquin Valley National Cemetery, which is just northwest of San Luis Creek Use Area, does not have an HCP for the San Joaquin kit fox but has switched from rodenticide to trapping to prevent harm to kit foxes.

#### *2.6.1.2 Setting and Climate*

San Luis Reservoir, O'Neill Forebay, and Los Banos Creek Reservoir lie between the Coast Range and the San Joaquin Valley. San Luis Reservoir and O'Neill Forebay are the largest bodies of water within an approximately 40-mile area in Merced County. Los Banos Creek Reservoir is in the foothills several miles to the southeast. To the west of the Plan Area is Pacheco State Park, which contains 6,900 acres of rolling foothills of former ranchland, primarily of oak savanna. The Plan Area contains the O'Neill Forebay Wildlife Area to the east-northeast and the San Luis Wildlife Area to the west.

The Upper and Lower Cottonwood Wildlife Areas are just to the north of San Luis Reservoir and the Jasper-Sears mitigation parcel is just to the south. All are

outside of the Plan Area and managed by DFG. Farther to the north and east in the San Joaquin Valley is the San Luis National Wildlife Refuge Complex, which consists of 45,000 acres of wetlands, grasslands, and riparian habitat that is a stopping point in the middle of the Pacific Flyway, providing rest and forage for migrating birds (USFWS 2008).

The O'Neill Forebay Wildlife Area is on the eastern side of O'Neill Forebay and located in the low foothills abutting the San Joaquin Valley. The eastern parts of the Plan Area, including O'Neill Forebay, are relatively flat and are influenced by San Joaquin Valley weather patterns. The Plan Area is often windy, especially in the summer, which exacerbates water stress of the vegetation.

The San Luis Wildlife Area is on the northwestern shore of the San Luis Reservoir. It has steep canyons and north-facing slopes which drain small tributaries (some may be seasonal) from the nearby mountains to the reservoir and provides habitat for species that grow in moister areas. Small tributaries also drain into the smaller Los Banos Creek Reservoir. San Luis Reservoir sits in a complex pattern of elevation and rainfall in the eastern foothills running north-northeast/south-southwest (habitat gradients tend to run parallel or perpendicular to this line). The climate in the western part of the Plan Area is Mediterranean, with summer droughts and high air temperatures, and the mountains to the north of the reservoir are wetter than the south.

Steep gradients of elevation and rainfall create microclimates associated with rare and endemic species. For example, some special-status plants occur where foothills meet the floodplain, and some special-status amphibians, reptiles, and plants are associated with seasonal pools and streams. The orientation of the various ecological communities delineated by rainfall and elevation aid in the understanding of the distribution and likely occurrence of special-status species in the Plan Area.

#### *2.6.1.3 Vegetation*

California is divided into three floristic provinces that are further divided into regions, subregions, and districts where applicable. According to the Jepson Manual (2008), these geographic units are based on physiographical and biological considerations. The Plan Area is within the California Floristic Province (CFP), which is an area designated as a Biological Hotspot by Conservation International (Conservation International 2007). It is considered such because it has a Mediterranean climate, contains high levels of plant endemism and endemic animals, and is the largest avian breeding ground in the United States. Within the CFP, the Plan Area is at the intersection of two subregions and a district (the San Joaquin Valley and San Francisco Bay Area subregions and the Inner South Coast Ranges District within the South Coast Ranges District), which are in two floristic regions (Great Central Valley and Central Western California). The northern part of San Luis Reservoir falls into the San Francisco Bay Area Subregion, which encompasses a diversity of community types. South of Pacheco Pass is the Inner South Coast Ranges District, which supports a mosaic primarily of summer-dry blue oak/foothill pine woodland and

chaparral (although no chaparral is present in the Plan Area). To the east, which includes part of O'Neill Forebay and potentially parts of Los Banos Creek Reservoir, is the San Joaquin Valley Subregion of the Great Central Valley Region, which is characterized by islands of valley oak savanna (Jepson 2008).

The vegetation of the Plan Area and the DFG-managed wildlife areas consists of riparian woodland, blue oak woodland and savanna, coast live oak woodland, ornamental trees, California sagebrush scrub, grasslands, mesic herbaceous (wetland), iodine bush scrub (alkali sink scrub), and ruderal (nonnative and weedy) plant communities. Different species dominate the grassland in different areas. The occurrence of a particular species as a dominant may be the result of particular edaphic, climatic, and moisture conditions. Most of the dominants are non-native species, but purple needlegrass (*Nasella pulchra*), a native species, occurs throughout the Plan Area in various densities. It occasionally grows as a dominant on the slopes of San Luis and Los Banos reservoirs. The other dominants include ripgut brome, hare barley (*Hordeum murinum* ssp. *leporinum*), wild oats (Avena sp.), and Italian ryegrass (*Lolium multiflorum*). Various species of tarweeds also occur in various densities ranging from low to high in the grassland. They also occur as dominant or subdominant species of small areas. The species of tarweeds are Fitch's spikeweed, common spikeweed (*Hemizonia pungens*), and San Joaquin tarweed (*Holocarpha obconica*). Big tarweed (*Blepharizonia plumosa* ssp. *viscida*) occasionally occurs in the grassland, and vinegar weed (*Trichostemma lanceolatum*) often occurs as a subdominant in the grassland.

Some portions of the grassland are dominated by native species of grass. Often these native areas are correlated with sloping areas and shallow soil. Natives such as pine bluegrass often grow beside the California sagebrush scrub on the slopes of Los Banos Reservoir. Creeping wildrye, a native species, can dominate moist areas.

Native grasslands also represent a declining vegetation type, in part due to severe competition from nonnative species of grass. Patches of purple needlegrass and pine bluegrass (*Poa secunda*) occur on relatively small areas of the Plan Area. Creeping wildrye (*Leymus triticoides*) occurs on relatively deep moist soils, often near wetlands. In the majority of the Plan Area, vegetation communities appear stable and exhibit few signs of transitioning to a more mature successional stage. For example, no evidence exists of colonization of the grassland areas by shrubs or trees that would indicate that the vegetation will change to a more woody vegetation in the near future. Similarly, the California sagebrush scrub does not appear to be colonized by propagules of trees.

The riparian woodland and mesic herbaceous types occur at the edge of the reservoirs and along watercourses. The San Luis Wildlife Area also contains blue oak woodland, blue oak savanna, coast live oak woodland, and California sycamore riparian woodland. The California sagebrush scrub occurs on hillsides above and to the west of Los Banos Creek Reservoir. The iodine bush scrub occurs at Salt Spring, a tributary to Los Banos Creek Reservoir. Where

appropriate, the naming system used in A Manual of California Vegetation was incorporated into the names of the vegetation types in this report (Sawyer and Keeler-Wolf 1995).

As long as the slopes above Los Banos Creek Reservoir and Los Banos Creek do not erode, the vegetation will most likely remain as a mosaic of grassland and scrub. However, areas at the edges of O'Neill Forebay and Los Banos Creek Reservoir appear to be slowly changing to riparian vegetation. Two early successional species, sandbar willow and mulefat, are expected to be replaced by red willow (*Salix laevigata*), black willow, Fremont cottonwood, and western sycamore (*Platanus racemosa*) at the shore of O'Neill Forebay, and Fremont cottonwood and black willow are expected to continue to colonize the shore of Los Banos Creek Reservoir. At the shore of San Luis Reservoir, riparian vegetation will always be in an early successional stage because either the extreme fluctuation of the water level inundates the vegetation for too long a period, or the vegetation does not receive enough water during the dry season.

## 2.6.2 Biological Resources in the Plan Area

### *2.6.2.1 Methods*

**Species** The EIR component of this EIS/EIR was originally issued in April 2005 and has been updated. The data sources used in the 2005 EIR include:

- A search of the California Natural Diversity Database (CNDDB)and CNPS databases for the nine USGS 7.5-minute quadrangle maps including and surrounding the San Luis Reservoir SRA (Crevison Peak, Pacheco Pass, Mariposa Peak, Howard Ranch, San Luis Dam, Los Banos Valley, Ingomar, Volta, and Ortigalita Peak NW);
- A review of existing scientific literature; and
- Reconnaissance-level field surveys by EDAW in October 2002 and June 2003 for 25 target special-status species habitat or vegetation types (EDAW 2005; also see Appendix B), using species lists compiled from Edminster (1996) and Robert Edminster's plant species list for nearby Pacheco State Park.

The reconnaissance-level surveys were completed in 2003 and did not include focal ground surveys.

The following data sources were used to update the biological resources discussion:

- Search of CNDDB observations of occurrences of listed species (2012), Sacramento USFWS Official Species list and CNPS Inventory of Rare and Endangered Plants (2011) for the nine USGS 7.5-minute quadrangles listed above for the San Luis Reservoir SRA, in addition to the bordering quadrangles (Mustang Peak, Pacheco Peak, and Three Sisters).

- Consultation with staff of resource agencies and organizations familiar with local biological resources, including from CSP and the Endangered Species Recovery Program (ESRP).

The potential for a species to occur in the Plan Area was determined by whether it had been observed within a 10-mile radius of the Plan Area, observed in USGS topographic quad maps as described above, or observed by CSP officials or surveys in the Plan Area, such as the vegetation survey and the San Joaquin kit fox survey by the ESRP, and whether preferred habitat types for a listed species occur within the Plan Area (see Table 2-17). The species maps show a 5-mile buffer around the Plan Area. With the exception of western spadefoot (*Spea hammondii*), the same animal species observed in the 10-mile buffer were also observed in the 5-mile buffer. Therefore, the species occurrence maps only show a 5-mile buffer around the Plan Area. The species with potential to occur are discussed in further detail in Sections 2.6.2.2 through 2.6.5.

*Wetlands* Wetlands are defined by USACE according to specific criteria, as provided in the Wetlands Delineation Manual (USACE 1987), and requires that all three wetland criteria (soils, hydrology, and vegetation) be met for an area to be classified as a wetland. To determine the presence or absence of wetlands within the Plan Area, a variety of sources were utilized: USFWS National Wetlands Inventory (NWI) maps (USFWS 2011), the Holland vernal pool complex maps (Map 6b, Holland 2009), site visits conducted by EDAW biologists in 2002 and 2003 (EDAW 2005; also see Appendix B), and review of the topography and vegetation of the area (National Agriculture Imagery Program 2009 with USFWS 2011, Holland 2009, and CNDDB 2012 imagery).

According to the NWI maps, potential freshwater emergent, freshwater forest/shrub, and freshwater wetlands are present within and adjacent to the Plan Area (Map 6a). Vernal pool complexes have been identified adjacent to the northwest corner of O'Neill Forebay and to the south of Los Banos Creek Reservoir (Map 6b, Holland 2009).

The NWI maps are prepared primarily from aerial photographs with limited field survey. These maps are assumed to closely approximate wetland types and the general location. They do not show all wetlands that are currently present within in given area. Instead, the NWI maps are designed so that if a site is depicted as containing a wetland, it is highly likely that a wetland is there. However, a site may also contain unmapped wetlands (especially those that are very small), wetlands that are drier in some seasons, or wetlands that are difficult to interpret from aerial photographs, such as evergreen-forested wetlands or substantially drained wetlands. Similar to the NWI maps, the Holland maps are based on 40-acre mapping units and may not show smaller, individual vernal pools present within an area (Holland 2009).

**Table 2-17**
**CNDDB Observations of Special-Status Species in a 10-Mile Radius of the Plan Area**

| Group | Species Name | Common Name | Habitat | Species Likelihood of Occurring | Status | | |
|---|---|---|---|---|---|---|---|
| | | | | | Federal/ State Status | Other Status | CNPS And Other Lists |
| amphibian | *Ambystoma californiense* | California tiger salamander | Vernal pools and stock ponds in grasslands | Potential to occur. There is a CNDDB observation approximately 1.2 miles southwest of Los Banos Creek Reservoir. | FT/ST | None | None |
| amphibian | *Rana boylii* | foothill yellow-legged frog | Generally restricted to shallow, flowing streams with some cobble-sized substrate | Known to occur. Reported to the CNDDB as occurring upstream from Los Banos Creek Reservoir in Los Banos Creek. Last CNDDB observation was in 1988. | None/None | SSC | None |
| amphibian | *Rana draytonii* | California red-legged frog | Stock ponds and other natural and artificial permanent and seasonal aquatic habitats | Known to occur in the Plan Area. Juveniles were observed in the western part of the Plan Area (2006) and south of San Luis Reservoir (2000), including the San Luis Wildlife Area, which appeared to be an over-summer site for adults (2002, 2006). Not expected to breed in the Plan Area due to the absence of stock ponds and other permanent aquatic habitat. May serve as seasonal habitat for young dispersing frogs and an over-summer site for adults. | FT/ None | SSC | None |
| amphibian | *Spea hammondii* | western spadefoot | Vernal pools and other seasonal ponds | Potential to occur. CNDDB occurrence recorded south of Los Banos Creek Reservoir. | None/None | SSC | None |
| bird | *Agelaius tricolor* | tricolored blackbird | Freshwater marsh, riparian habitat, and agricultural fields | Known to occur. Observed during 2003 field surveys. Emergent marsh habitat at Los Banos Creek Reservoir may be suitable nesting habitat. Known to nest at the O'Neill Forebay Wildlife Area. | None/None | SSC | None |
| bird | *Aquila chrysaetos* | golden eagle | Grasslands, open woodlands | Potential to occur. Suitable nesting and foraging habitat present. | None/None | FP | -- |

**Table 2-17**
**CNDDB Observations of Special-Status Species in a 10-Mile Radius of the Plan Area**

| Group | Species Name | Common Name | Habitat | Species Likelihood of Occurring | Status | | |
|---|---|---|---|---|---|---|---|
| | | | | | Federal/ State Status | Other Status | CNPS And Other Lists |
| bird | *Athene cunicularia* | burrowing owl | Open grasslands (including those dominated by nonnatives and by those with ground squirrel activity, since they are known to use ground squirrel burrows) and agricultural fields | Known to occur. Observations are mostly southwest of San Luis Reservoir and north of Los Banos Creek Reservoir. Also observed northeast of San Luis Reservoir along the California Aqueduct. Road kill on Basalt Road on January 10, 2004. Status unknown, but likely to occur in small numbers during winter and the nesting season. Burrowing owls were observed on the DWR parcel (fall 2004), just west of the SRA boundary. | None/None | SSC | None |
| bird | *Branta hutchinsii leucopareia* | cackling (=Aleutian Canada) goose | Winters on lakes and inland prairie; forages on natural pasture or that cultivated to grain; loafs on lakes, reservoirs, ponds | Potential to occur. Species could winter on large water bodies in the Plan Area and forage on surrounding grasslands. | FD/ None | None | None |
| bird | *Buteo regalis* | ferruginous hawk | Grasslands and agricultural fields | Known to occur. Recorded along southeast edge of San Luis Reservoir and in grasslands between San Luis Reservoir and Los Banos Creek Reservoir. | None/None | None | None |
| bird | *Buteo swainsoni* | Swainson's hawk | Grasslands, riparian woodland, and agricultural fields | Known to occur. Observed during 2003 field surveys. Known to nest in the area including recent CNDDB records from the O'Neill Forebay Wildlife Area (2001) and Los Banos Valley (1985). | None / ST | None | None |
| bird | *Charadrius montanus* | mountain plover | Grasslands and agricultural fields on flat terrain | Know to occur. Species could overwinter in the Plan Area. | None/None | SSC, BCC | None |
| bird | *Circus cyaneus* | northern harrier | Grasslands, marshes, and agricultural fields | Known to occur. Observed during 2002 field surveys. Nesting status not determined, but suitable nesting habitat is present. | None/None | SSC | None |
| bird | *Coturnicops noveboracensis* | yellow rail | Freshwater marsh | Potential habitat exists on the shores of the reservoirs. Known in area from single sighting before 1950 (1911). | None/None | SSC | None |

**Table 2-17**
**CNDDB Observations of Special-Status Species in a 10-Mile Radius of the Plan Area**

| Group | Species Name | Common Name | Habitat | Species Likelihood of Occurring | Status | | |
|---|---|---|---|---|---|---|---|
| | | | | | Federal/ State Status | Other Status | CNPS And Other Lists |
| bird | *Elanus leucurus* | White-tailed Kite | Grasslands and agricultural fields; nonmigratory; nests in dense tree canopies | Known to occur. Observed in family groups (and likely nests in the area) in the riparian trees at the base of San Luis Dam over multiple years (2000-2004). | None/None | FP | None |
| bird | *Eremophil aalpestris actia* | California horned lark | Grasslands and agricultural fields | Known to occur. Observed during 2002 surveys. Nesting status unknown, but suitable habitat is present. | None/None | None | None |
| bird | *Falco mexicanus* | prairie falcon | Grasslands and other open habitats with nearby cliff for nesting sites | Known to occur at Los Banos Creek Reservoir (observed during 2002 field surveys). Suitable nesting located on cliff upstream and above Los Banos Creek Reservoir. | None/None | WL,BCC | None |
| bird | *Haliaeetus leucocephalus* | bald eagle | Usually found in grasslands and open woodlands near large bodies of water | Potential to occur. May winter in small numbers at Los Banos Creek Reservoir, San Luis Reservoir, and O'Neill Forebay. Not expected to nest in the Plan Area. | FDSE | None | None |
| bird | *Lanius ludovicianus* | Loggerhead shrike | Grasslands and agricultural fields | Known to occur. Observed during 2002 surveys. Nesting status unknown, but suitable habitat is present. | None/None | SSC | None |
| bird | *Sternula antillarum browni* | California least tern | Nests on open sandy beaches typically along the Pacific Ocean shore but also the mouths of freshwater rivers emptying into the Pacific Ocean (USFWS 1985a) | Unlikely to occur because of lack of suitable habitat. Listed in USFWS Quad search. | FE / SE | SFP | USBC:WL, ABC: GL |
| fish | *Hypomesus transpacificus* | delta smelt | Interface between fresh and salt water in the central Sacramento-San Joaquin Delta | Unlikely to occur. Could be transported to San Luis Reservoir from export water from the Sacramento-San Joaquin Delta transported via canal, but because of lack of connectivity to ocean water for adult life stage, unlikely that a stable population would survive. | FT / ST | -- | AFS:TH, IUCN: EN |

**Table 2-17**
**CNDDB Observations of Special-Status Species in a 10-Mile Radius of the Plan Area**

| Group | Species Name | Common Name | Habitat | Species Likelihood of Occurring | Status | | |
|---|---|---|---|---|---|---|---|
| | | | | | Federal/ State Status | Other Status | CNPS And Other Lists |
| fish | *Lavinia symmetricus* | San Joaquin Roach | Small, warm intermittent streams | Unlikely to occur due to absence of suitable habitat. | None/None | SSC, Class 3 | None |
| fish | *Oncorhyncus mykiss* | Central Valley Steelhead | Migrates up freshwater rivers in the Sacramento-San Joaquin Delta | Unlikely to occur. Could be transported to San Luis Reservoir from export water from the Sacramento-San Joaquin Delta transported via canal but unlikely to survive transport. | FT (NMFS) / None | None | None |
| fish | *Oncorhyncus mykiss* | South Central California Steelhead | Migrates up freshwater rivers in the Sacramento-San Joaquin Delta | Unlikely to occur. Could be transported to San Luis Reservoir from export water from the Sacramento-San Joaquin Delta transported via canal but unlikely to survive transport. | FT (NMFS)/ None | SSC | -- |
| invertebrate | *Desmocerus californicus dimorphus* | valley elderberry longhorn beetle | Elderberry shrubs | Potential to occur. CNDDB record west of Los Banos Creek Reservoir. No elderberry shrubs found during 2002 field surveys. | FT / None | None | None |
| invertebrate | *Branchinecta conservatio* | Conservancy fairy shrimp | Found in large, turbid pools in the northern two-thirds of the Central Valley; inhabit astatic pools located in swales formed by old, braided alluvium, filled by winter/spring rains, last until June. | No potential habitat is present unless vernal pools or depressions are found. | FE / None | None | None |
| invertebrate | *Branchinecta lynchi* | vernal pool fairy shrimp | Vernal pools or vernal pool-like habitats | No potential habitat is present unless vernal pools or depressions are found. Listed in USFWS Quad search; unlikely to occur. | FT/ None | None | IUCN:VU |

**Table 2-17**
**CNDDB Observations of Special-Status Species in a 10-Mile Radius of the Plan Area**

| Group | Species Name | Common Name | Habitat | Species Likelihood of Occurring | Status | | |
|---|---|---|---|---|---|---|---|
| | | | | | Federal/ State Status | Other Status | CNPS And Other Lists |
| invertebrate | *Branchinecta longiantenna* | longhorn fairy shrimp | Pools located within a matrix of alkali sink and alkali scrub plant communities, sandstone outcrop pools, and alkaline grassland vernal pools (USFWS 2005b) | No potential habitat is present unless vernal pools or depressions are found. Listed in USFWS Quad search; unlikely to occur. | FE / None | None | IUCN:EN |
| invertebrate | *Lepidurus packardi* | vernal pool tadpole shrimp | Inhabits vernal pools and swales in the Sacramento Valley containing clear to highly turbid water | No potential habitat is present unless vernal pools or depressions are found. | FE / None | None | None |
| mammal | *Ammospermophilus nelsoni* | Nelson's antelope squirrel | Chenopod scrub | Unlikely to occur due to lack of habitat. Known in area from single sighting in 1938. 2005 Range map shows range is ~25 miles to the south of the Plan Area. | None /ST | None | None |
| mammal | *Antrozous pallidus* | pallid bat | Chaparral; deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting. | Potential habitat is present. Known in area from single sighting in 1937. | None/None | SSC | None |
| mammal | *Dipodomys ingens* | giant kangaroo rat | Chenopod scrub; fine sediments or sand | Unlikely to occur due to lack of suitable habitat. Known in area from single sighting in 1932; considered potentially extirpated. | FE / SE | None | None |

**Table 2-17**
**CNDDB Observations of Special-Status Species in a 10-Mile Radius of the Plan Area**

| Group | Species Name | Common Name | Habitat | Species Likelihood of Occurring | Status | | |
|---|---|---|---|---|---|---|---|
| | | | | | Federal/ State Status | Other Status | CNPS And Other Lists |
| mammal | *Dipodomys nitratoides* | Fresno kangaroo rat | Occurs in alkaline clay-based soils subject to seasonal inundation, with more friable soil mounds above seasonal flood level for burrows. The current population distribution is restricted and the population size is small. Current populations occur only in Kings County. | Potential habitat exists; however, Plan Area is outside of the normal range of the species. | FE / SE | None | None |
| mammal | *Eumops perotis californicus* | western mastiff bat | Many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral, etc. | Potential to occur. There are known sightings within 1.5 miles of Los Banos Creek Reservoir. | None/None | SSC | WBWG: H |
| mammal | *Lasiurus blossevillii* | Western red bat | Inhabits broad-leafed woodlands in riparian areas. High Priority Species in Eco Region 5 by the Western Bat Working Group. | Potential habitat present. Closest known sighting was at George J. Hatfield State Recreation Area over 20 miles northeast of Plan Area. | None/None | SSC | WBWG: H |
| mammal | *Myotis yumanensis* | Yuma myotis bat | Lower montane coniferous forest | Unlikely to occur due to lack of coniferous forest in Plan Area; however, may utilize reservoir as a water source from coniferous forests outside the Plan Area. | None/None | None | WBWG: L |
| mammal | *Perognathusi nornatus inornatus* | San Joaquin pocket mouse | Coastal scrub, grasslands, and blue oak woodlands (arid, shrubby areas [not open spaces]) | Potential to occur. CNDDB records shown occurrences near the Plan Area, and potential habitat is present. Observed close to the Plan Area just north of Los Banos Creek Reservoir, and several observations recorded west of Los Banos Creek Reservoir. | None/None | -- None | BLM: S |

**Table 2-17**
**CNDDB Observations of Special-Status Species in a 10-Mile Radius of the Plan Area**

| Group | Species Name | Common Name | Habitat | Species Likelihood of Occurring | Status | | |
|---|---|---|---|---|---|---|---|
| | | | | | Federal/ State Status | Other Status | CNPS And Other Lists |
| mammal | *Taxidea taxus* | American badger | Coastal scrub; most abundant in drier open stages of most shrub, forest, and herbaceous habitats with friable soils | Known to occur. Observed in the Plan Area near San Luis Reservoir Dam (CNDDB #344), as well as to the north and west of San Luis Reservoir. | None/None | SSC | None |
| mammal | *Vulpes macrotis mutica* | San Joaquin kit fox | Grasslands and open scrub | Known to occur in small numbers. Few documented occurrences in recent years, suggesting an unstable and possibly declining population. | FE / ST | None | None |
| reptile | *Actinemys marmorata* | western pond turtle | Ponds, marshes, streams, and irrigation ditches | Known to occur. Reported to the CNDDB from Los Banos Creek Reservoir and dam in 1985. O'Neill Forebay also appears to be suitable habitat. | None/None | SSC | None |
| reptile | *Anniella pulchra pulchra* | Silver legless lizard | In the Central Valley, species prefers chaparral, requires leaf litter for foraging and cover | Potential habitat present. Closest known sighting over 30 miles northeast of the Plan Area. | None/None | SSC | None |
| reptile | *Gambelia sila* | blunt-nosed leopard lizard | Sparsely vegetated plains, alkali flats, low foothills, washes, and arroyos | Potential habitat may occur at the eastern edge of the Plan Area. Current range is restricted to areas farther south (a 1993 observation was a few miles south of Los Banos Creek Reservoir). The CNDDB includes two occurrences from the 1930s: one in the vicinity of the San Luis Dam and the other between the reservoirs. | FE / SE | None | None |
| reptile | *Masticophis flagellum ruddocki* | San Joaquin whipsnake | Grasslands | Status unknown but expected to occur. The CNDDB includes numerous occurrences within 5 miles of Los Banos Creek Reservoir. | None/None | SSC | None |

**Table 2-17**
**CNDDB Observations of Special-Status Species in a 10-Mile Radius of the Plan Area**

| Group | Species Name | Common Name | Habitat | Species Likelihood of Occurring | Status | | |
|---|---|---|---|---|---|---|---|
| | | | | | Federal/ State Status | Other Status | CNPS And Other Lists |
| reptile | *Phrynosoma blainvillii* | Coast (California) horned lizard | Occurs in valley-foothill hardwood, conifer, and riparian habitats, as well as pine-cypress, juniper, and annual grass habitats. Basks on low boulders or rocks and burrows into soil or under objects for cover and hibernation. | Potential habitat present. Closest known occurrence over 10 miles away. | None/None | SSC | None |
| reptile | *Thamnophis gigas* | giant garter snake | Marsh and swamp; freshwater marsh and low gradient streams (drainage canals and irrigation ditches) | Potential habitat is present in marsh habitats in the reservoir. Known in area from single sighting before 1950 (1918). | FT / ST | None | None |
| habitat community | -- | Sycamore Alluvial Woodland | -- | Known to occur. California Sycamore Woodland observed in reconnaissance-level surveys in the San Luis Wildlife Area. May also occur in the western edge of Los Banos Creek Reservoir. | None/None | None | 1B.2 |
| habitat community | -- | Valley Sink Scrub | -- | Recorded occurrence near Los Banos Creek Reservoir, but not identified in reconnaissance-level surveys. | None/None | None | 1B.2 |
| habitat community | -- | Alkali Seep | -- | Unlikely to occur in the Plan Area because not found in reconnaissance-level surveys. | None/None | None | 1B.2 |
| habitat community | -- | Cismontane Alkali Marsh | Standing water or saturated soil present during most or all of year. High evaporation and low input of fresh water render these marshes somewhat salty and alkaline, especially during the summer | Unlikely to occur in the Plan Area, because typically found on former lakebeds such as the San Joaquin Valley outside the Plan Area. | None/None | None | 1B.2 |

**Table 2-17**
**CNDDB Observations of Special-Status Species in a 10-Mile Radius of the Plan Area**

| Group | Species Name | Common Name | Habitat | Species Likelihood of Occurring | Status | | |
|---|---|---|---|---|---|---|---|
| | | | | | Federal/ State Status | Other Status | CNPS And Other Lists |
| habitat community | -- | Great Valley Cottonwood Riparian Forest | -- | Unlikely to occur, because not found in reconnaissance-level surveys. | None/None | None | 1B.2 |
| habitat community | -- | Iodine Brush Scrub | -- | Known to occur. | | | G4/S3 |
| habitat community | -- | Purple Needle Grass Grassland | -- | Known to occur. | | | G4/S3 |
| plant | *Astragalustener* var. *tener* | alkali milk-vetch | Playas, grassland – adobe clay soils; vernal pools – alkaline soils; Mar-Jun; elev. 1-60 meters | Unlikely to occur: No potential habitat is present unless vernal pools or depressions are found in grasslands. Nearest known occurrences are in the San Joaquin Valley. | None/None | None | 1B.2 |
| plant | *Atriplex cordulata* | heartscale | Chenopod scrub, meadows and seeps, grassland – sandy, saline, or alkaline soils; Apr-Oct; elev. 1-375 meters | Potential habitat is present in iodine bush scrub along Salt Spring. Nearest known occurrences are in the San Joaquin Valley. Known in area from single sighting before 1950 (1937). | None/None | None | 1B.2 |
| plant | *Atriplex depressa* | brittlescale | Sandy alkaline soils in annual grassland | Potential habitat may occur in grasslands; however, focal surveys would be required to determine if suitable habitat is present. | None/None | None | 1B.2 |
| plant | *Atriplex joaquiniana* | San Joaquin saltbush | Chenopod scrub, meadows and seeps, playas, grassland – alkaline soils; Apr-Oct; elev. 1-320 meters | Potential habitat is present in iodine bush. Nearest known occurrences are in the San Joaquin Valley. | None/None | None | 1B.2 |
| plant | *Atriplex vallicola* | Lost Hills crownscale | Chenopod scrub, grassland, vernal pools – alkaline soils; Apr-Aug; elev. 50-635 meters | Unlikely to occur: No potential habitat is present unless alkali depressions are found in iodine bush scrub. Nearest known occurrence is ca. 5 miles south of Los Banos Creek Reservoir. | None/None | None | 1B.2 |

**Table 2-17**
**CNDDB Observations of Special-Status Species in a 10-Mile Radius of the Plan Area**

| Group | Species Name | Common Name | Habitat | Species Likelihood of Occurring | Status | | |
|---|---|---|---|---|---|---|---|
| | | | | | Federal/ State Status | Other Status | CNPS And Other Lists |
| plant | *Balsamorhiza macrolepis* var. *macrolepis* | big-scale balsamroot | Chaparral, cismontane woodland, grassland – sometimes on serpentinite and basalt rock outcrops. Mar-Jun; elev. 90-1,400 meters | Potential habitat is present on basalt rock outcrops within study area. Nearest known occurrence in Pacheco State Park on slopes above San Luis Reservoir. | None/None | None | 1B.2 |
| plant | *California macrophylla* | round-leaved filaree | Cismontane woodland, grassland – clay soils; Mar-May; elev. 15-1,200 meters | Potential habitat is present in the grasslands. Nearest known occurrence is in Pacheco State Park. | None/None | None | 1B.1 |
| plant | *Campanula exigua* | chaparral harebell | Chaparral; rocky sites, usually on serpentine in chaparral; elev. 300-1,250 meters | Unlikely to occur due to lack of suitable habitat. Known in area from single sighting before 1950 (1940). | None/None | None | 1B.2 |
| plant | *Caulanthus coulteri* var. *lemmonii* | Lemmon's jewelflower | Pinon and juniper woodlands | Unlikely to occur due to lack of suitable habitat. | None/None | None | 1B.2 |
| plant | *Cordylanthus mollis* ssp. *hispidus* | hispid bird's-beak | Meadows and seeps, playas, grassland – alkaline soils; Jun-Sep; elev. 1-155 meters | Potential habitat is present in iodine bush scrub along Salt Spring. Nearest known occurrences are ca. 5 miles south of Los Banos Creek Reservoir. | None/None | None | 1B.1 |
| plant | *Delphinium californicum* ssp. *interius* | Hospital Canyon larkspur | Chaparral – openings, cismontane woodland, (mesic); Apr-Jun; elev. 230-1,095 meters | Potential habitat is present in oak woodland. Nearest known occurrence is ca. 4 miles north of San Luis Reservoir. | None/None | None | 1B.2 |
| plant | *Delphinium recurvatum* | recurved larkspur | Chenopod scrub, cismontane woodland, grassland – alkaline soils; Mar-May; elev. 3-750 meters | Potential habitat is present in iodine bush scrub along Salt Spring. Nearest known occurrences at Salt Creek 3 miles south of Los Banos Creek Reservoir. | None/None | None | 1B.2 |
| plant | *Dudleya setchellii* | Santa Clara Valley liveforever | Cismontane woodland, grassland – serpentinite, rocky; Apr-Jun; elev. 60-455 meters | Unlikely to occur: No potential habitat is present. Species is present on serpentine substrates possibly in western portion of Pacheco State Park. | FE / None | None | 1B.1 |

**Table 2-17**
**CNDDB Observations of Special-Status Species in a 10-Mile Radius of the Plan Area**

| Group | Species Name | Common Name | Habitat | Species Likelihood of Occurring | Status | | |
|---|---|---|---|---|---|---|---|
| | | | | | Federal/ State Status | Other Status | CNPS And Other Lists |
| plant | *Eryngium racemosum* | Delta button-celery | Drainages and depressions with vernally mesic clay soils; Jun-Sep; elev. 3-30 meters | Unlikely to occur: No potential habitat is present. Nearest occurrences in the San Joaquin Valley to the east. | None/None | None | 1B.1 |
| plant | *Centromadia parryis* sp. *congdonii* | Congdon's tarplant | Grassland – alkaline; May-Nov; elev. 1-230 meters | Potential habitat is present. Nearest known occurrence is in Pacheco State Park. | None/None | None | 1B.2 |
| plant | *Hesperolinon* sp. nov. *"serpentinum"* | Napa western flax | Chaparral – serpentinite; May-Jul; elev. 50-800 meters | Unlikely to occur: No potential habitat is present. Nearest known occurrence in serpentine substrates ca. 6 miles northwest of San Luis Reservoir. | None/None | None | 1B.1 |
| plant | *Lasthenia glabrata* ssp. *coulteri* | Coulter's goldfields | Coast salt marshes, playas, valley and foothill grassland, vernal pools. Usually found on alkaline soils in playas, sinks and grasslands. | No potential habitat is present unless vernal pools or depressions are found. Closest known occurrence is over 20 miles away (4 miles south of SR 140 and SR 165 intersection) | None/None | None | 1B.1 |
| plant | *Lepidium jaredii* ssp. *album* | Panoche pepper-grass | White or grey clay lenses on steep slopes; incidental in alluvial fans and washes, clay and gypsum-rich soils. Valley and foothill grassland. | No potential habitat is present unless vernal pools or depressions are found. Closest known occurrence is approximately 30 miles away. (Exact location unknown but near Little Panoche Creek in Fresno County). | None/None | None | 1B.2 |
| plant | *Malacothamnus arcuatus* | arcuate bush-mallow | Chaparral | Unlikely to occur due to lack of suitable habitat. Known in area from single sighting before 1950 (1936). | None/None | None | 1B.2 |

**Table 2-17**
**CNDDB Observations of Special-Status Species in a 10-Mile Radius of the Plan Area**

| Group | Species Name | Common Name | Habitat | Species Likelihood of Occurring | Status | | |
|---|---|---|---|---|---|---|---|
| | | | | | Federal/ State Status | Other Status | CNPS And Other Lists |
| plant | *Malacothamnus hallii* | Hall's bush-mallow | Chaparral, coastal scrub, grassland; May-Sep; elev. 10-760 meters | Potential habitat is present in sage scrub and mesic grassland. Nearest known occurrence is near Pacheco Pass and ca. 6 miles west-southwest of Los Banos Creek Reservoir. | None/None | None | 1B.2 |
| plant | *Microseris paludosa* | marsh microseris | Closed-cone coniferous forest, cismontane woodland, coastal scrub, grassland; Apr-Jun; elev. 5-300 meters | Potential habitat is present in oak woodland, sage scrub and grassland. Nearest known is ca. 13 miles SW in vicinity of Little Quien Sabe Valley. | None/None | None | 1B.2 |
| plant | *Navarretiag owenii* | Lime Ridge navarretia | Chaparral | Unlikely to occur due to lack of suitable habitat. | None/None | None | 1B.1 |
| plant | *Navarretia nigelliformi* ssp. *radians* | shining navarretia | Cismontane woodland, grassland, vernal pools; May-Jul; elev. 90-1,000 meters | Low potential to occur. Surveys have not been conducted to determine if potential habitat is present. Within the known range of the species (Jepson 1993). Nearest known occurrence is in Los Banos Valley in vicinity of Billy Wright Road. | None/None | None | 1B.2 |
| plant | *Navarretia prostrata* | prostrate vernal pool navarretia | Coastal scrub, grassland – alkaline soils; vernal pools – mesic habitats; Apr-Jul; elev. 15-700 meters | Low potential to occur. Surveys have not been conducted to determine if potential habitat is present. Within the known range of the species (Jepson 1993). Nearest known occurrences is in the San Joaquin Valley. | None/None | None | 1B.1 |
| plant | *Potamogeton filiformis* | slender-leaved pondweed | Marshes and swamps – assorted shallow freshwater habitats; May-Jul; elev. 300-2150 meters | Potential habitat in reservoirs and ponds. Nearest known occurrence is in the San Joaquin Valley north of Volta, CA. Known in area from single sighting before 1950 (1948). | None/None | None | 2.2 |

**Table 2-17**
**CNDDB Observations of Special-Status Species in a 10-Mile Radius of the Plan Area**

| Group | Species Name | Common Name | Habitat | Species Likelihood of Occurring | Status | | |
|---|---|---|---|---|---|---|---|
| | | | | | Federal/ State Status | Other Status | CNPS And Other Lists |
| plant | *Sagittaria sanfordii* | Sanford's arrowhead | Marshes and swamps – shallow freshwater habitats; May-Oct; elev. 0-610 meters | Potential habitat in reservoirs and ponds. Nearest known occurrence is in the San Joaquin Valley. Known in area from single sighting before 1950 (1948). | None/None | None | 1B.2 |
| plant | *Senecio aphanactis* | chaparral ragwort | Cismontane woodland, coastal scrub, drying alkaline flats; elev. 20-575 meters | Potential habitat in sage scrub and oak woodland. Known in area from single sighting before 1950 (1938). | None/None | None | 2.2 |
| plant | *Streptanthus insignis* ssp. *lyonii* | Arburua Ranch jewel-flower | Coastal scrub, sometimes on serpentinite; Mar-May; elev. 230-855 meters | Potential habitat in sage scrub and possibly adjacent oak woodlands. Nearest known occurrence is in Los Banos Valley on slopes along South Fork of Los Banos Creek. | None/None | None | 1B.2 |
| plant | *Trichocoronis wrightii* var. *wrightii* | Wright's trichocoronis | Meadows and seeps, marshes and swamps, riparian forest, vernal pools – alkaline soil; drying mud; May-Sep; elev. 5-435 meters | Potentially in drying mud at edges of wet areas, including reservoirs. Nearest known occurrences are in the San Joaquin Valley near Los Banos. Known in area from single sighting before 1950 (1948). | None/None | None | 2.1 |

**Source:** DFG June 2012

Key to abbreviations:

DFG – California Department of Fish and Game
- CE – State-listed, Endangered
- CT – State-listed, Threatened
- SSC – California Species of Special Concern
- FP – Fully Protected
- Class 3 – Watch List classification for fish
- WL – Watch List
- ABC – American Bird Conservancy
- GL – Green List
- American Fisheries Society
- TH – Threatened

CNPS – California Native Plant Society
- List 1A – Species considered extinct in California
- List 1B – Rare and endangered in California and elsewhere
- List 2 – Species considered rare and endangered in California but more common elsewhere
  - 0.1 – Seriously threatened
  - 0.2 – Fairly threatened in California
  - 0.3 – Not very threatened in California
- State Ranking
  - S3- Vulnerable in California due to restricted Range
- Global Ranking
  - G4 – Apparently Secure (Uncommon but not rare)

IUCN – International Union for Conservation of Nature – The World Conservation Red List
- EN – Endangered
- VU – Vulnerable

USBC – United States Bird Conservancy

WL – Watch List

USFWS – United States Fish and Wildlife Service
- FE – Federally listed, Endangered
- FT – Federally listed, Threatened
- NMFS – National Marine Fisheries Service
- T– Federally listed as Threatened

WBWG – Western Bat Working Group
- L – Low priority
- H – High priority

BLM – Bureau of Land Management
- S – Sensitive

The presence of wetlands in an area as depicted on the NWI and Holland maps is considered a preliminary site assessment. The final determination regarding the presence or absence of a wetland would need to be delineated using USACE guidelines.

#### 2.6.2.2 Summary of Findings

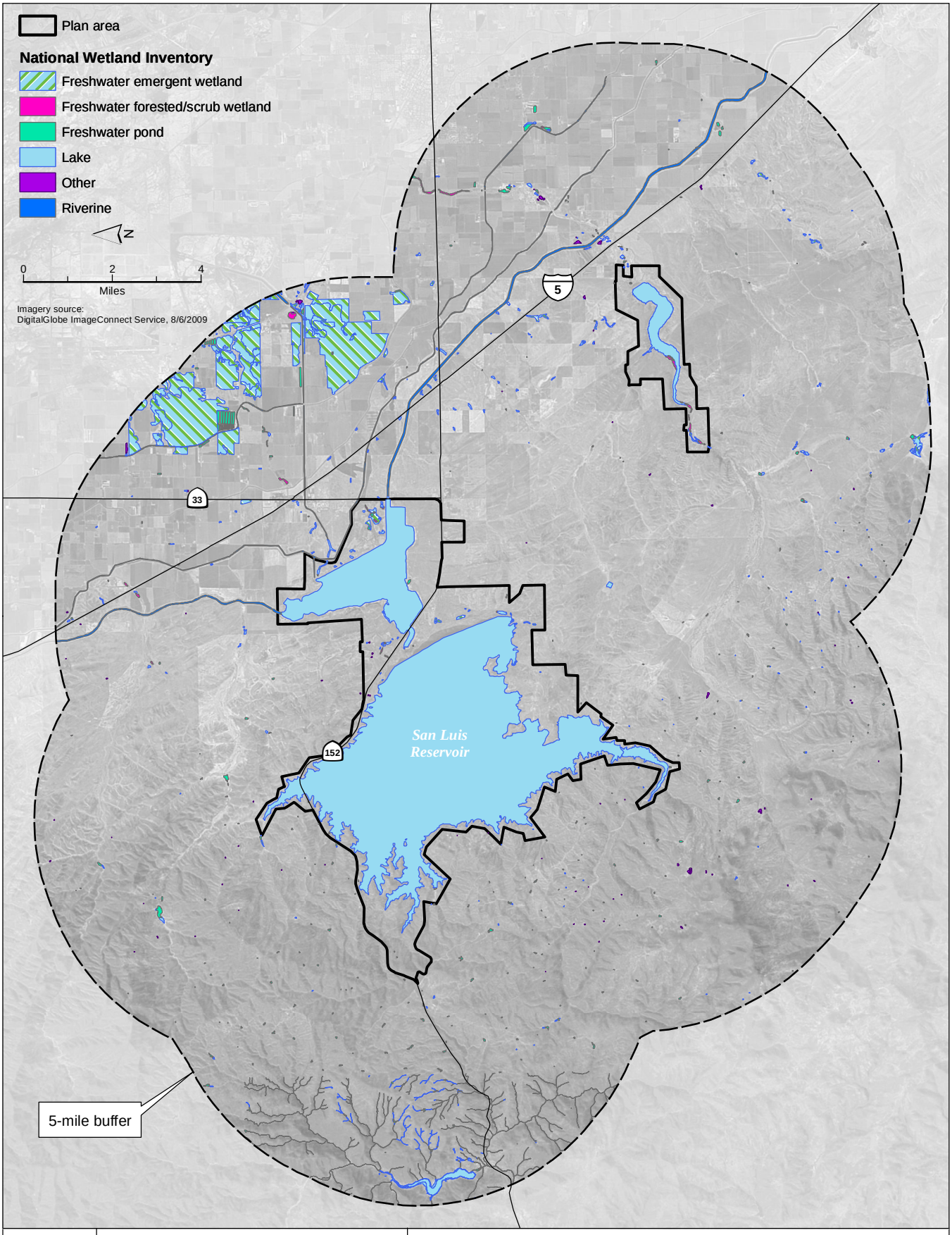
Seventy-five special-status species and seven habitat communities were identified based on a review of the information described in Table 2-17 above. Based on the availability of suitable habitat, 50 special-status species were determined to have the potential to occur in the Plan Area (four amphibians, 14 birds, one invertebrate, eight mammals, six reptiles, three habitat communities, and 18 plants). The distribution of CNDDB observations of amphibians, birds, fish, invertebrates, mammals, reptiles, habitat communities, and plants in a 5-mile radius of the Plan Area is provided in Maps 6c through 6i.

- California tiger salamander (*Ambystoma californiense*) – federally and state listed as threatened
- California red-legged frog (*Rana draytonii*) – federally listed as threatened
- Swainson's hawk (*Buteo swainsoni*) – state listed as threatened
- Bald eagle (*Haliaeetus leucocephalus*) – state listed as endangered
- Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) – federally listed as threatened
- San Joaquin kit fox (*Vulpes macrotis mutica*) – federally listed as endangered and state listed as threatened
- Blunt-nosed leopard lizard (*Gambelia sila*) – federally listed as endangered
- Giant garter snake (*Thamnophis gigas*) – federally and state listed as threatened

Two fully protected raptor species, the white-tailed kite and golden eagle, are known to occur within the Plan Area. Similarly, the northern harrier, tricolored blackbird, loggerhead shrike, and California horned lark are also present. The mountain plover and prairie falcon, listed by the USFWS as Birds of Conservation Concern (BCC), have the potential to be present. Although the single sighting of a yellow rail within the Plan Area occurred prior to 1950, potential habitat is located along the shores of the reservoir. The current status of the burrowing owl and ferruginous hawk within the Plan Area is unknown; however, there is potential for them to occur as well. In addition, the cackling goose and bald eagle, recently delisted under the ESA, occur in the Plan Area and are included in Table 2-17.

The following DFG species of special concern are either known to occur or have potential suitable habitat in the Plan Area:

- Foothill yellow-legged frog (*Rana boylii*)
- Western spadefoot (*Spea hammondii*)
- Pallid bat (*Antrozous pallidus*)

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**Map 6a**
National Wetland Inventory

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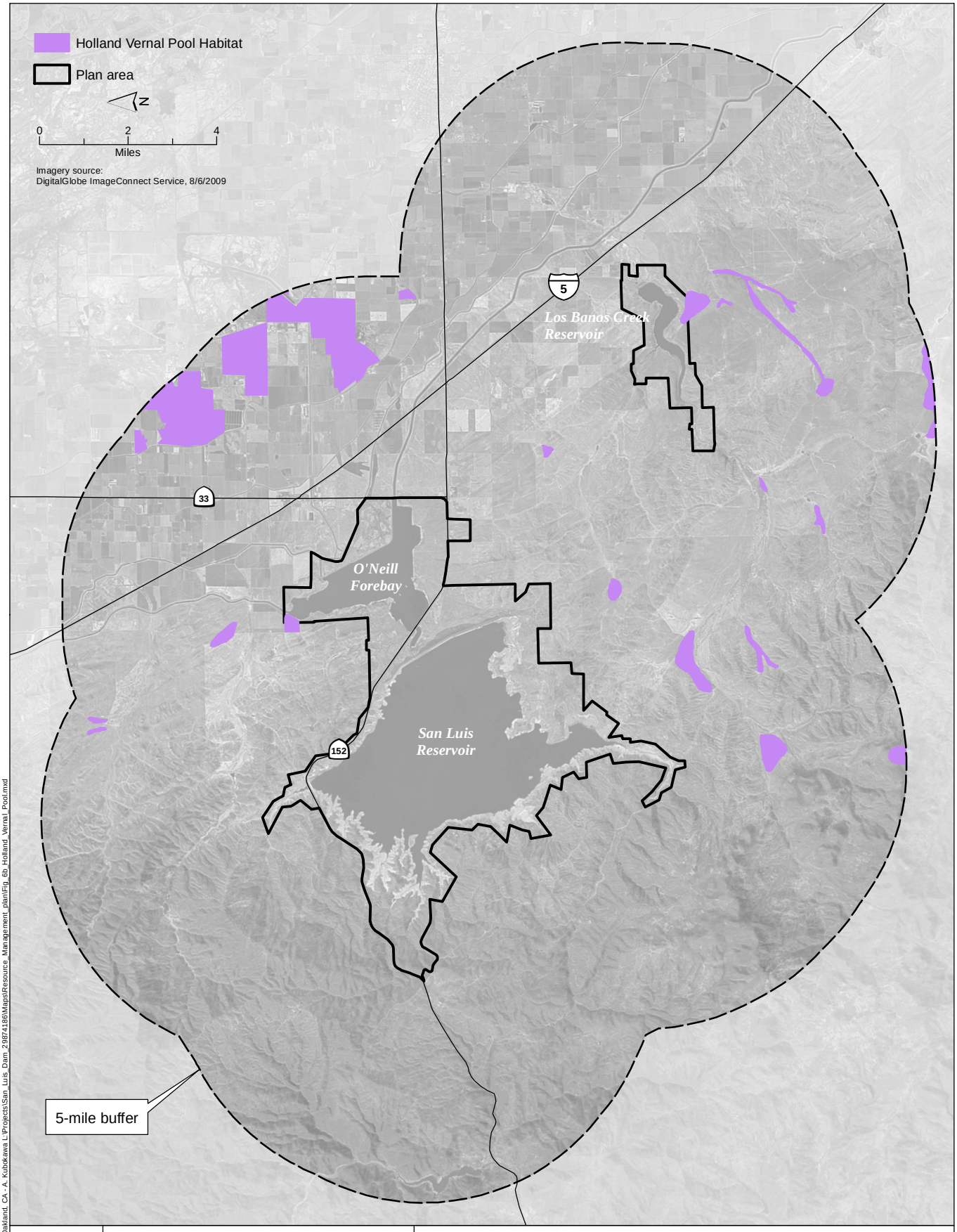


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| | | |
|---|---|---|
| URS | Bureau of Reclamation<br>San Luis Reservoir Resource Management Plan | **Map 6b**<br>Holland Vernal Pool Habitat |

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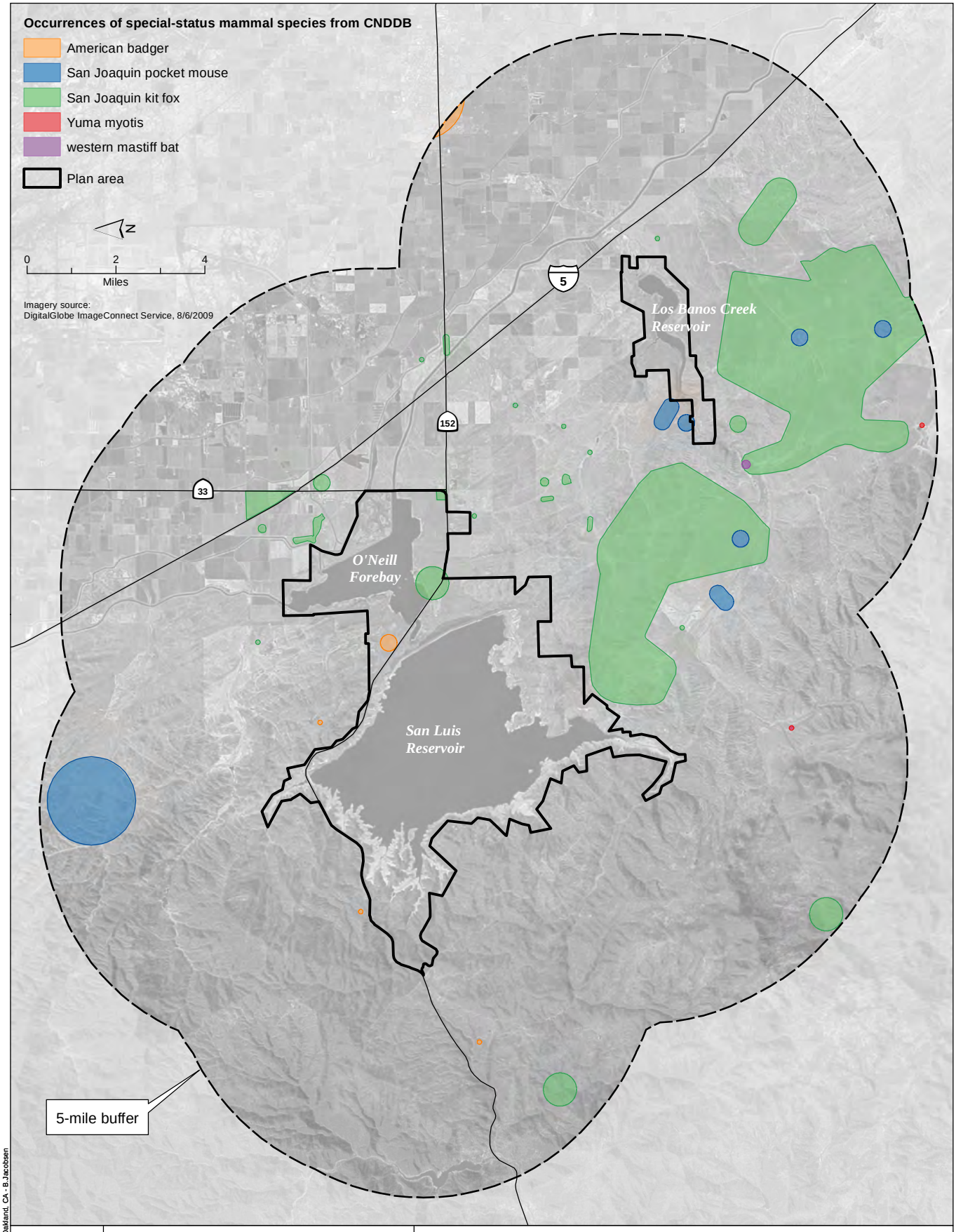


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**Map 6c**
Mammals

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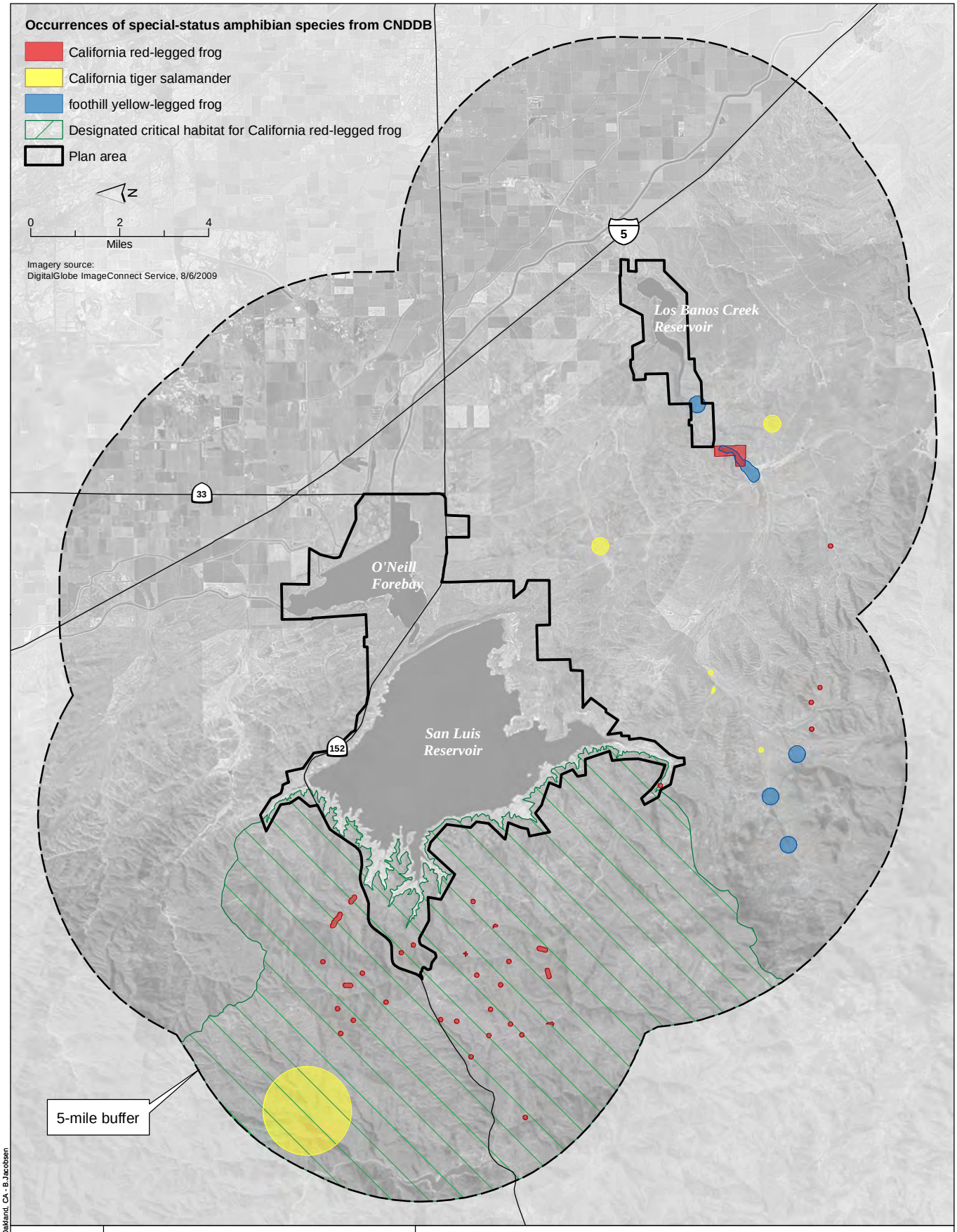


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**Map 6d**
Amphibians and critical habitat

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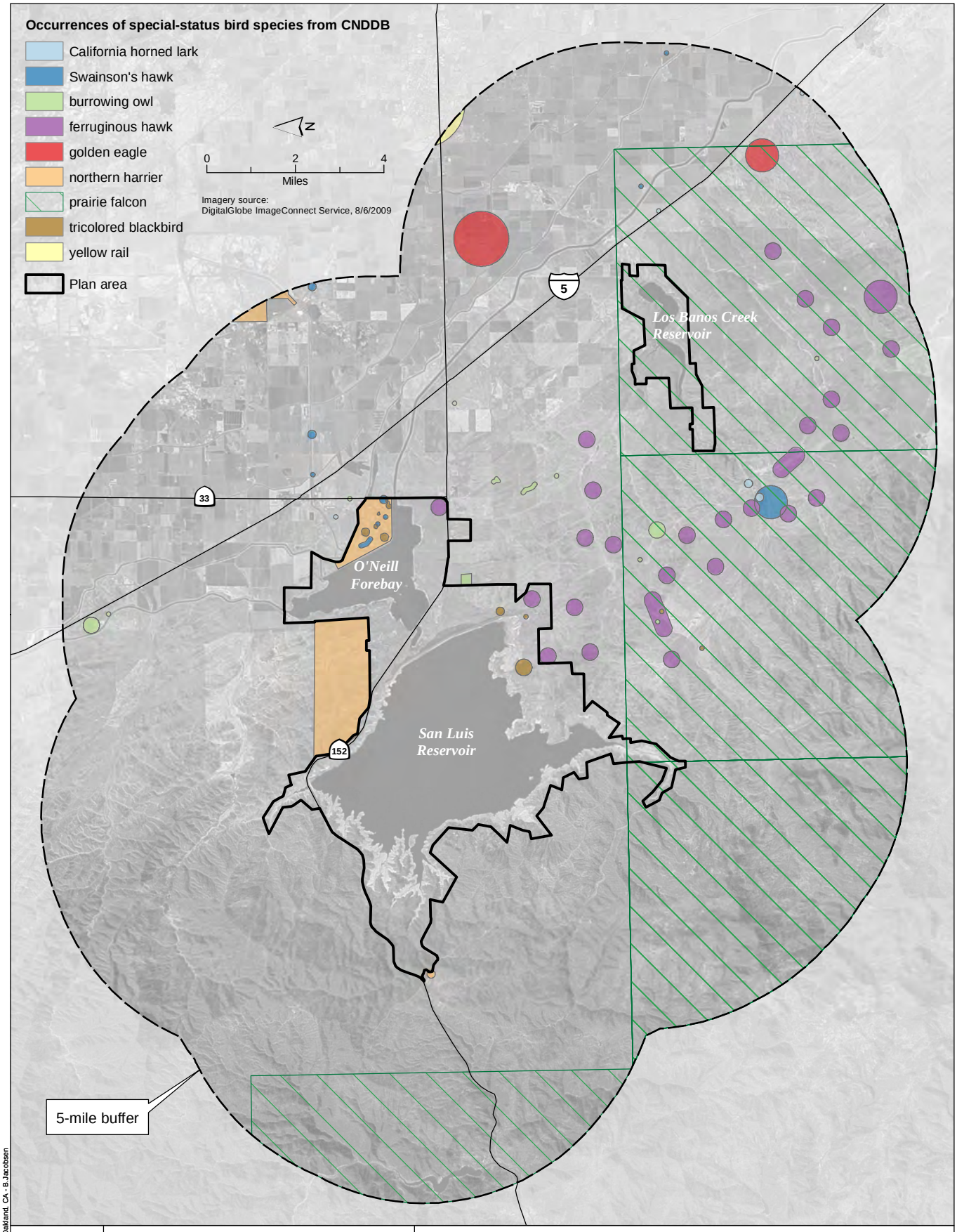


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**Map 6e**
Birds

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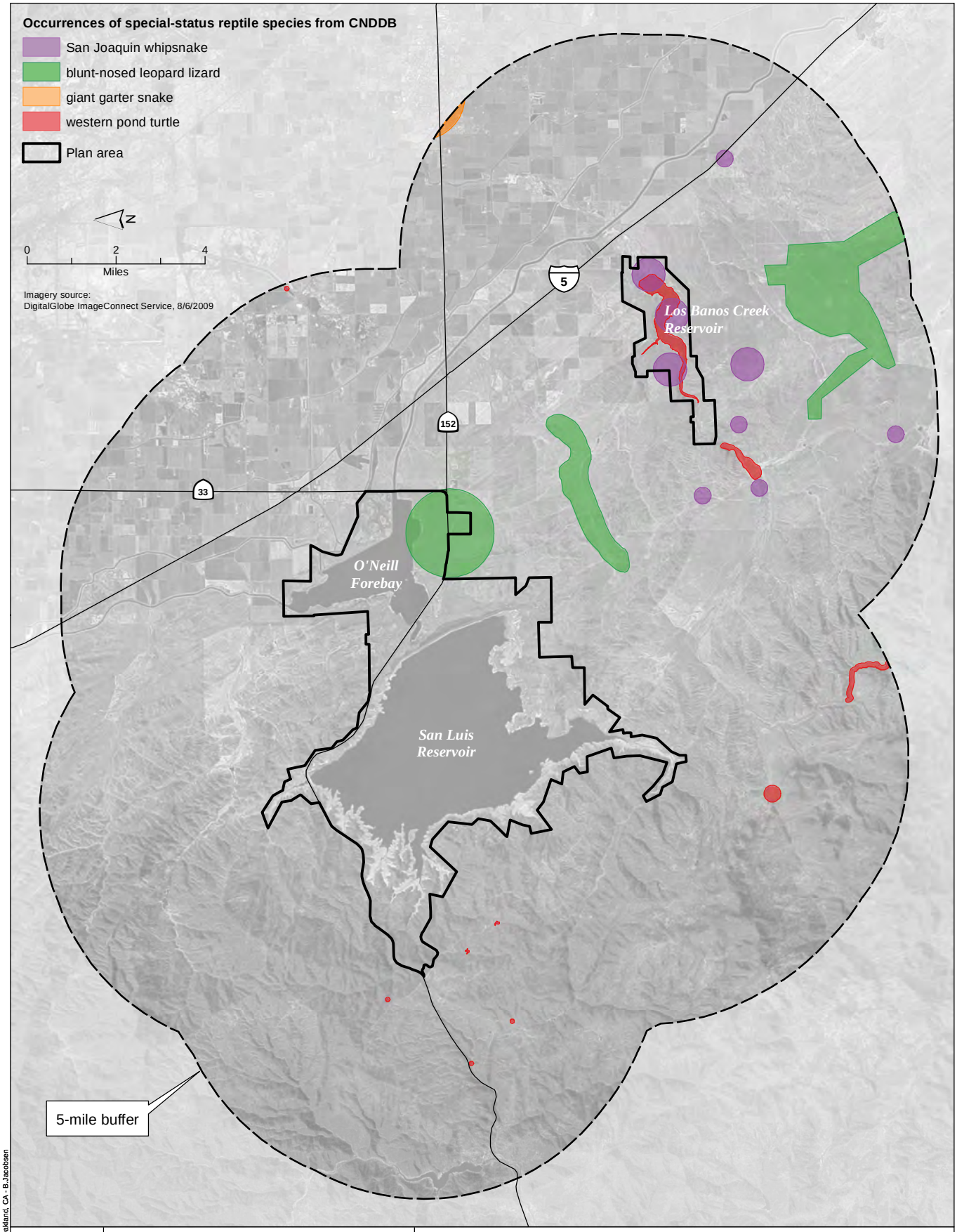


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**Map 6f**
Reptiles

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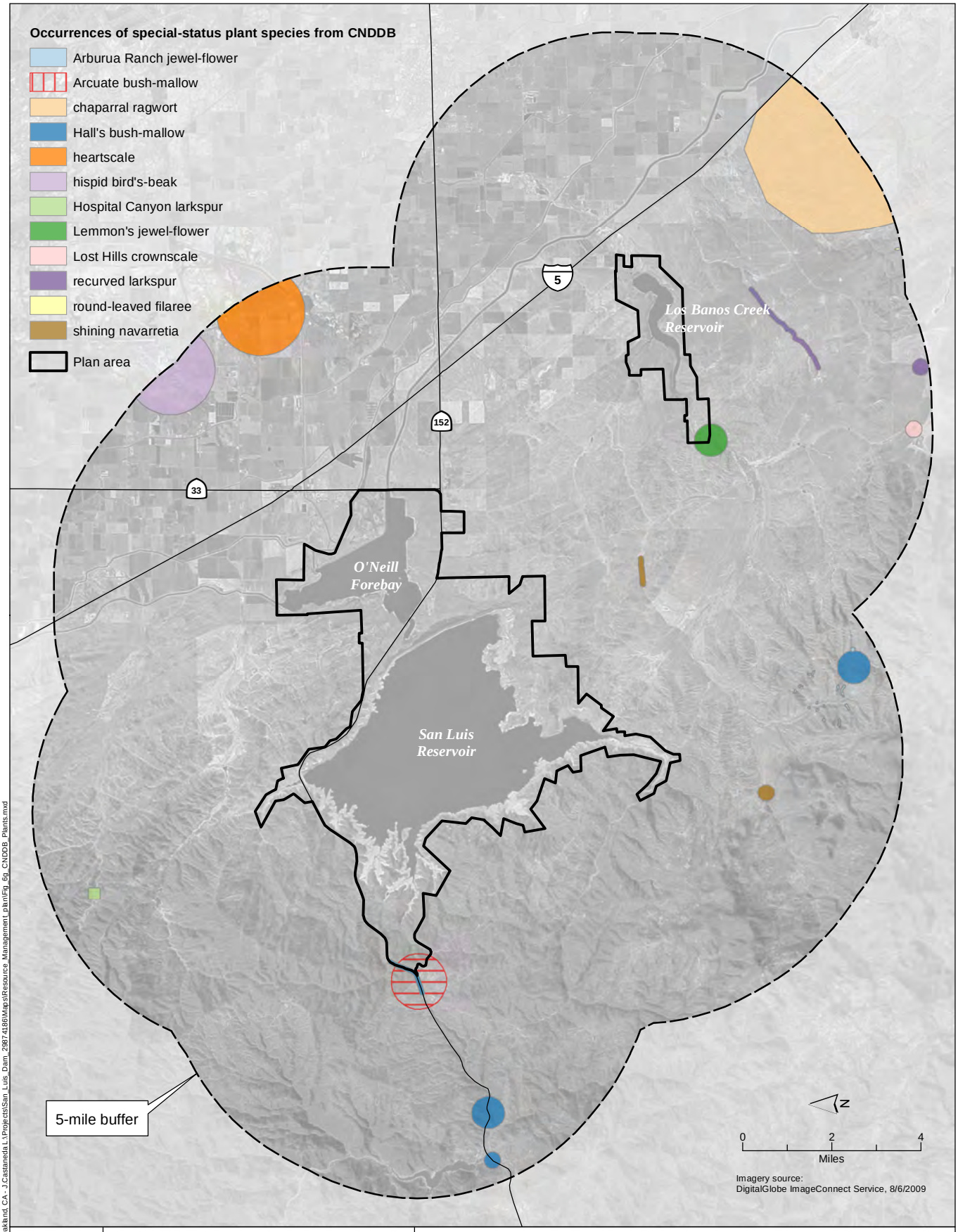


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**Map 6g**
Plants

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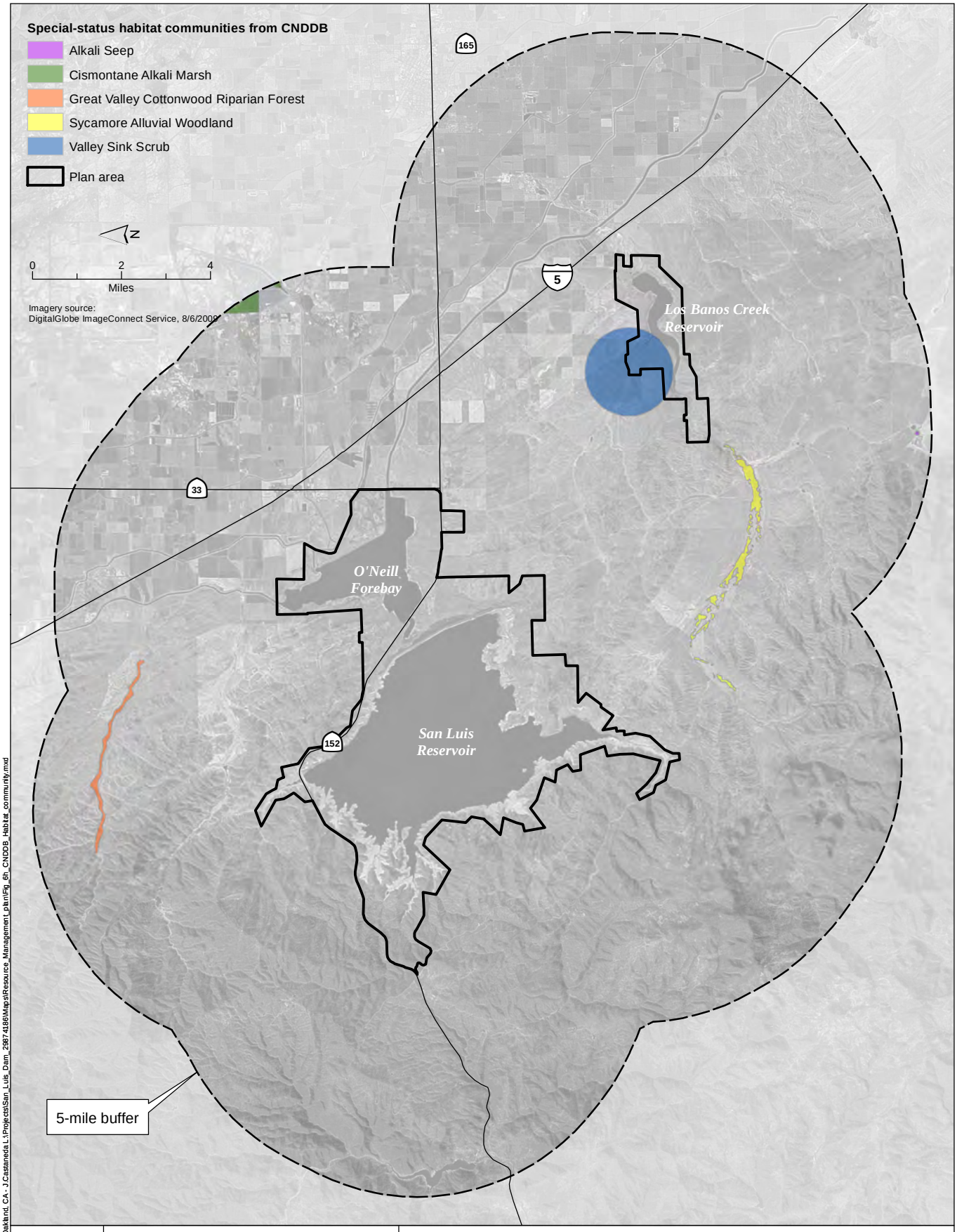


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**Map 6h**
Habitat Communities

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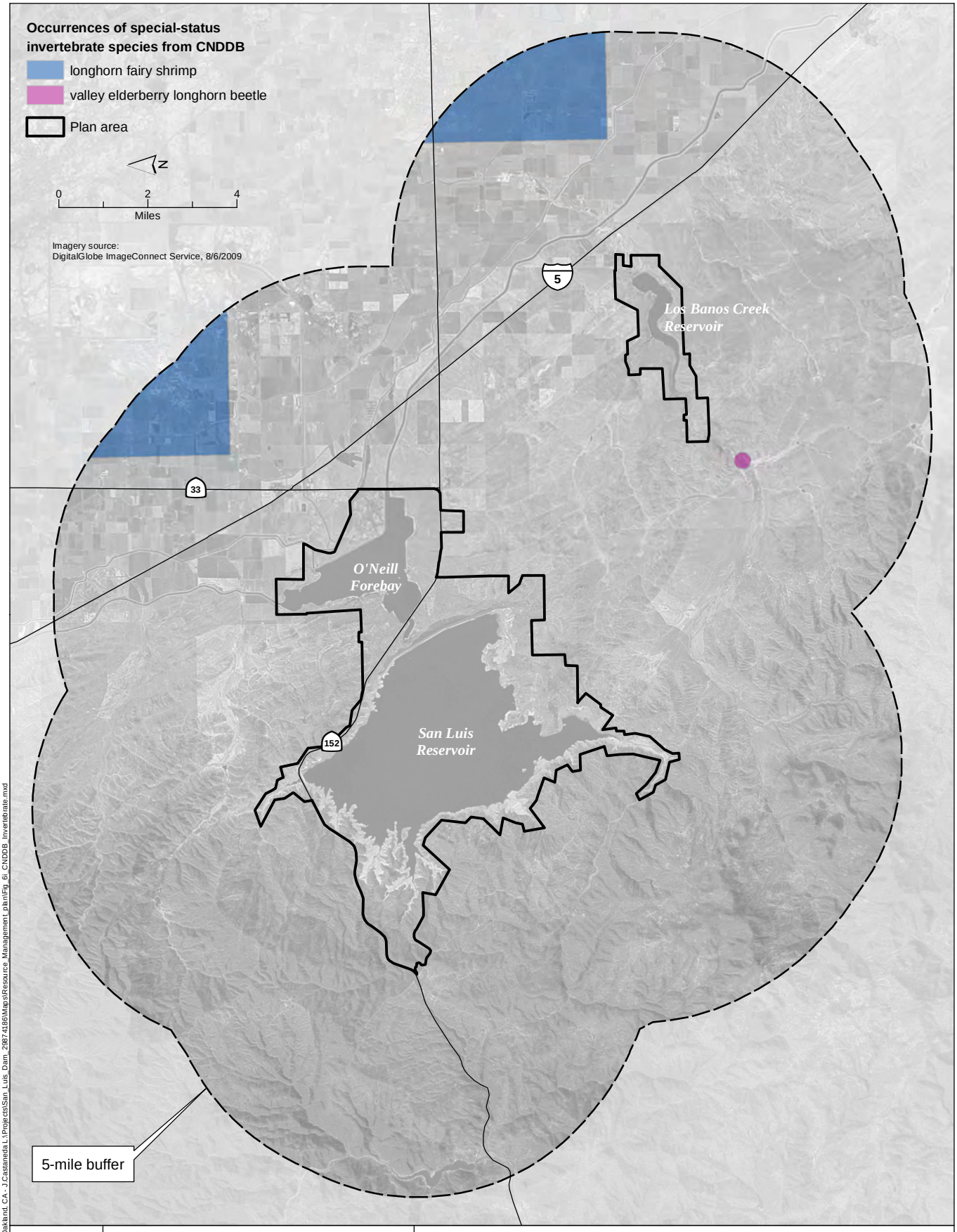


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**Map 6i**
Invertebrates

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- Western mastiff bat (*Eumops perotis californicus*)
- Western red bat (*Lasiurus blossevillii*)
- American badger (*Taxidea taxus*)
- Western pond turtle (*Actinemys marmorata*)
- Silver legless lizard (*Anniella pulchra pulchra*)
- San Joaquin whipsnake (*Masticophis flagellum ruddocki*)
- Coast (California) horned lizard (*Phrynosoma blainvillii*)

Although not listed as a species of special concern, the San Joaquin pocket mouse is known to occur within the Plan Area.

The USFWS species list for the Plan Area included the longhorn fairy shrimp, vernal pool fairy shrimp, vernal pool tadpole shrimp, and Conservancy fairy shrimp. Surveys have not been done to determine if potential habitat is present within the Plan Area. However, according to the Holland Vernal Pool and Nationwide Inventory wetland maps (Holland 2009; NWI 2011), there are potential wetlands within the project area. Additionally, the Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon, there are known extant populations for the first three species in Merced County (USFWS 2005b).

Similarly, the delta smelt, two salmonid runs (Central Valley steelhead evolutionarily significant unit [ESU] and South Central California steelhead ESU) and the California least tern are also included on the USFWS species list. These species are not expected to be present due to a lack of suitable habitat. Additionally, the foothill yellow-legged frog, San Joaquin roach, Nelson's antelope squirrel, giant kangaroo rat, and *Yuma myotis* bat are not expected to be present for the same reason.

During the initial assessment of biological resources, four habitat communities were identified. Three additional habitat communities were identified during reconnaissance-level surveys. Of the seven habitat communities, four habitat communities have the potential to be present within the Plan Area (see Map 6h). Those four habitat communities are sycamore alluvial woodland, valley sink scrub, iodine brush scrub, and purple needle grass.

The following plant species have the potential to be present:

- Listed with a CNPS status of 1B.1 and 1B.2:
  - Alkali milk-vetch (*Astragalus tener* var. *tener*)
  - Heartscale (*Atriplex cordulata*)
  - Brittlescale (*Atriplex depressa*)
  - San Joaquin saltbush (*Atriplex joaquiniana)*
  - Big-scale balsamroot (*Balsamorhiza macrolepis* var. *macrolepis*)
  - Round-leaved filaree (*California macrophylla*)
  - Hispid bird's-beak (*Cordylanthus mollis* ssp. *hispidus*)
  - Hospital Canyon larkspur (*Delphinium californicum* ssp. *interius*)
  - Recurved larkspur (*Delphinium recurvatum*)

  - Congdon's tarplant (*Centromadia parryis* sp. *congdonii*)
  - Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*)
  - Panoche pepper-grass (Lepidium jaredii ssp. album)
  - Hall's bush-mallow (*Malacothamnus hallii*)
  - Marsh microseris (*Microseris paludosa*)
  - Shining navarretia (*Navarretia nigelliformi* ssp. *radians*)
  - Prostrate vernal pool navarretia (*Navarretia prostrata)*
  - Sanford's arrowhead (*Sagittaria sanfordii*)
  - Arburua Ranch jewel-flower (*Streptanthus insignis* ssp. *lyonii*)
- Listed with a CNPS status of 2.1 or 2.2:
  - Slender-leaved pondweed (*Potamogeton filiformis*)
  - Chaparral ragwort (*Senecio aphanactis*)
  - Wright's trichocoronis (*Trichocoronis wrightii* var. *wrightii*)

Although sightings of chaparral harebell and arcuate bush-mallow were recorded within the Plan Area prior to 1950, these species are not expected to be present within the Plan Area due to a lack of suitable habitat. The Lemon's jewel flower, Santa Clara Valley liveforever, Delta button-celery, Napa western flax, and lime ridge navarretia are also not expected to be present for the same reason.

### 2.6.3 Special-Status Wildlife

#### *2.6.3.1 Endangered or Threatened Species*

**California Red-Legged Frog** The California red-legged frog (CRLF) is federally listed as threatened and a California species of special concern. This subspecies of red-legged frog occurs from sea level to elevations near 5,000 feet. It has been extirpated from 70 percent of its former range and now is found primarily in coastal drainages of central California, from southern Marin County to northern Baja California. Potential threats to the species include elimination or degradation of habitat from land development, land use activities and habitat invasion by nonnative aquatic species (USFWS 2002).

The California red-legged frog requires a variety of habitat elements, with aquatic breeding areas typically located within a matrix of riparian and upland dispersal habitats. Breeding sites of the California red-legged frog include freshwater habitats, such as pools and backwaters within streams and creeks, ponds, marshes, springs, and lagoons. Additionally, California red-legged frogs frequently breed in artificial impoundments such as stock ponds both permanent and seasonal (USFWS 2002).

Based on the scarcity of suitable habitat, this species is currently not expected to breed within the Plan Area, but is expected to occur occasionally in the upland and aquatic environments of the Plan Area. Los Banos Creek Reservoir, San Luis Reservoir, and O'Neill Forebay are all considered unsuitable breeding habitats due to abundant populations of nonnative fish that prey on the species. Although suitable breeding habitats do not exist in the Plan Area, California red-legged frogs are known to occur as CNDDB records show occurrences within the

western extent of the Plan Area (Map 6d). In addition, breeding populations have been found near the Plan Area, and red-legged frogs can disperse up to 1 mile from their breeding habitat through upland habitat (USFWS 2002). California red-legged frogs are abundant in many of the stock ponds at Pacheco State Park (Fitzpatrick 2002). From 2005 to 2010, 26 observations of California red-legged frogs have been reported to the CNDDB in the project vicinity, primarily to the northwest and southwest of San Luis Reservoir. Red-legged frogs have also been found in 12 of the 13 large stock ponds at Upper Cottonwood Wildlife Area across SR 152 from the Plan Area; the only pond where they were absent supported a large population of nonnative crayfish. California red-legged frogs were also reported to the CNDDB from the vicinity of Los Banos Creek in 1985. Therefore, despite the lack of suitable breeding ponds, red-legged frogs are expected to occur at least occasionally in both the upland and aquatic environments of the Plan Area.

The western portion of San Luis Reservoir, including the San Luis Wildlife Area and the Dinosaur Point Use Area, is within an area designated as critical habitat for the red-legged frog (USFWS 2010a; see Map 6d). According to the primary constituent elements associated with the critical habitat designation, critical habitat for the red-legged frog includes only aquatic and upland areas where suitable breeding and nonbreeding habitats are interspersed throughout the landscape and are interconnected by unfragmented dispersal habitat .

**California Tiger Salamander** The California tiger salamander (CTS) is listed as a threatened species under the ESA and CESA. This large terrestrial salamander is generally restricted to grasslands below 2,000 feet. California tiger salamanders move from subterranean refuge sites (e.g., small mammal burrows) to breeding sites (e.g., vernal pools, seasonal ponds, etc.) following relatively warm winter and spring rains (October through May). Tiger salamanders can successfully breed in artificial impoundments such as stock ponds if the ponds do not contain fish. Because tiger salamanders have been known to travel long distances to reach suitable breeding ponds, the DFG considers upland habitat within 1 kilometer (0.62 mile) of potential breeding locations as potential habitat for California tiger salamanders (DFG 1997). A minimum of 10 weeks is required to complete development through metamorphosis (Jennings and Hayes 1994).

While breeding by tiger salamanders has been documented in permanent ponds, if predatory fish or bullfrogs occur in the pond, breeding will mostly likely be unsuccessful (Jennings and Hayes 1994). The presence of western newts in ponds also indicates that the ponds may not be suitable sites for tiger salamander breeding. However, herpetologists attribute this to evidence that suggests that western newts and California tiger salamanders generally prefer different breeding and upland habitat, not that one species precludes the presence of the other (Barry 2002). Tiger salamanders are restricted to valley and foothill grasslands; western newts tend to occupy creeks and ponds in open canyons with nearby wooded areas. California newts have not been reported at the Plan Area, but they are common in several of the permanent stock ponds at Pacheco State Park.

The Plan Area does not contain critical habitat for the California tiger salamander. Studies have shown that juvenile CTS can migrate up to 1 mile from breeding areas (Austin and Shaffer 1992; Mullen in USFWS 2000). Surveys for tiger salamanders have not been conducted at the Plan Area. Tiger salamanders were documented at several locations in the vicinity of the Plan Area in the 1980s and 1990 (DFG 2012); however, no observations were recorded in the CNDDB from 1994 to 2010. Suitable breeding habitat for the California tiger salamander is limited at the Plan Area, and focused surveys and a more detailed habitat evaluation would be required to determine the salamander's presence in or use of the Plan Area.

**Swainson's Hawk and Bald Eagle** The bald eagle is state-listed as endangered, and the Swainson's hawk is state-listed as threatened. In the Central Valley of California, Swainson's hawks nest in riparian woodland and in isolated trees near suitable foraging habitat, which includes grasslands and field crops. In California, Swainson's hawks usually arrive at nesting sites in March and April. In the fall, they depart California for wintering locations in Mexico and South America. A Swainson's hawk was observed perched on a fencepost at Medeiros Use Area during the June 2003 field survey. A Swainson's hawk was also observed soaring above the O'Neill Forebay Wildlife Area in June 2003. Nesting was documented at the wildlife area in 2001 and in Los Banos Valley in 1985 (DFG 2012). Suitable nesting habitat for Swainson's hawk is present at the Plan Area.

In California, bald eagles are found in a variety of habitats in winter, with the largest concentrations found in areas with large bodies of water that support abundant prey such as fish or waterfowl. Bald eagles have occasionally been seen during winter at O'Neill Forebay (Milam 2002). They could also occur in small numbers at San Luis and Los Banos Creek reservoirs. Bald eagles are not currently known or expected to nest in the vicinity of the Plan Area. The CNDDB does not include any reports of bald eagles from the Plan Area.

**Valley Elderberry Longhorn Beetle** The valley elderberry longhorn beetle is listed as threatened under the ESA. The beetle is dependent on its host plant, elderberry (*Sambucus* ssp.), which is a common component of the remaining riparian forest of the Central Valley. The amount and distribution of suitable habitat for the valley elderberry longhorn beetle has been reduced by the extensive destruction of California's Central Valley riparian forest that has occurred during the last 150 years due to agricultural and urban development (USFWS 1980). Loss of nonriparian habitat where elderberry occurs (e.g., savanna and grassland adjacent to riparian habitat, oak woodland, mixed chaparral-woodland), and where the beetle has been recorded, suggests further reduction of the beetle's range and increased fragmentation of its upland habitat (Barr 1991).

The status of the valley elderberry longhorn beetle at the Plan Area is unknown. Elderberry shrubs were not found in the Plan Area during 2002 surveys, but these surveys were not conducted at a level of intensity to determine if they are absent. The CNDDB includes a valley elderberry longhorn beetle occurrence near Plan

Area, approximately 1 mile from Los Banos Creek Reservoir. In 1987, two valley elderberry longhorn beetles were collected along Los Banos Creek, approximately 6 miles southeast of San Luis Reservoir. If elderberry shrubs are found at the Plan Area, it is possible that they could support valley elderberry longhorn beetles.

**San Joaquin Kit Fox** The San Joaquin kit fox is a state-listed threatened and federally listed endangered species and therefore receives protection under both CESA and ESA. Prior to 1930, kit foxes inhabited most of the San Joaquin Valley from southern Kern County to northern San Joaquin County. The current range is thought to cover less than half of the original area, with the largest portion of the range remaining in the southern and western parts of the San Joaquin Valley (USFWS 1998). The decline of the kit fox has been attributed to the conversion of natural habitat to agricultural and urban uses, including oil development. The loss of native habitat has resulted in much of the kit fox range becoming fragmented, which is considered a serious threat to their survival (USFWS 1998). Other factors that have been identified as threats to remaining kit fox populations include the following: rodenticide use; disease (e.g., rabies potentially transmitted by urban pests, such as raccoons); competition with larger canids (e.g., coyotes, domestic dogs); competition for food sources and dens from red fox; flooding; drought and associated loss of food sources; reduction in population size of kangaroo rats, a common kit fox food source; and factors related to California's increasing human population (e.g., vehicular mortality) (USFWS 1998).

The USFWS has not designated critical habitat for the San Joaquin kit fox.

*Current Distribution* Currently, north of Kern County, kit foxes primarily occur in a narrow north-south band bordered by I-5 and the Coast Range. A persistent but low-density kit fox population is found on lands just south of Santa Nella, which may be augmented from dispersers from the Panoche Valley kit fox population to the south. Between April 2005 and August 2007, track plate, spotlight, and camera trap surveys were conducted from north of Santa Nella to the Simon-Newman Ranch area in northwestern Merced County. Results, along with historical data, indicate that kit foxes are only intermittently present north of Santa Nella and may largely consist of individuals dispersing from the southern populations. Prey availability (kangaroo rat abundance) and habitat suitability (land use, vegetation cover, and terrain ruggedness) degrades to the north, which may explain the low kit fox presence in the north (Constable et al. 2009).

Kit foxes in the Plan Area will be discussed as related to maintenance of the source population south of Santa Nella, and as related to corridors connecting the southern population with the areas north of Santa Nella.

*Self-Sustaining Population Near Plan Area* San Joaquin kit foxes were documented in the vicinity of the Plan Area on numerous occasions during the 1970s through the 1990s (see Map 6c for spatial distribution of kit fox observations recorded in the CNDDB). Three observations of kit foxes were made in 2005 on Billy Wright Road, which is between San Luis Reservoir and Los Banos Creek Reservoir. No observations in the vicinity have been recorded in the

CNDDB between December 2005 and June 2012. During the extensive ESRP survey that took place between 2005 and 2007, only two unequivocal kit fox signs were observed north of SR 152: one set of tracks and one scat observation. South of SR 152, six kit foxes were detected along Bonturri Ranch, two were detected during spotlight surveys along Billy Wright Road, and two dens were observed on a private ranch south of Los Banos Creek Reservoir (Constable et al. 2009).

The findings of the rigorous April 2005 to August 2007 survey by the ESRP and the lack of natural breeding dens documented in the Plan Area indicate that a breeding kit fox population is unlikely to be present. However, seven artificial kit fox dens were installed at San Luis Reservoir SRA as mitigation for wind warning light upgrades. The northernmost detected resident self-sustaining kit fox population is just to the south of the Plan Area and may include the area between San Luis Reservoir/O'Neill Forebay and Los Banos Creek Reservoir. Kit foxes have been observed in the vicinity of the Plan Area primarily south of San Luis Reservoir (Basalt Use Area), between San Luis Reservoir and O'Neill Forebay, south and east of O'Neill Forebay, and northwest of Los Banos Creek Reservoir (Constable et al. 2009). Preservation of habitat supporting this population is considered the highest priority in kit fox conservation in the area (Cypher 2008).

*Migration Corridor in the Plan Area* The 1998 USFWS *Recovery Plan for Upland Species of the San Joaquin Valley* includes "protect[ing] existing kit fox habitat in the northern, northeastern segments of their geographic range and existing connections between habitat in those areas and habitat farther south." This is primarily based on the ecological concept that, since kit foxes require large habitats and their populations fluctuate over the short term with local extinctions, maintenance of multiple populations is required to maintain the species (USFWS 1998).

The amount of high-quality habitat for kit fox decreases to the north of Santa Nella, which may explain low kit fox numbers (ESRP 2008). An analysis evaluating likely use of space ("least-cost path analysis") indicates that the area between San Luis Reservoir and O'Neill Forebay and the area to the east of O'Neill Forebay may be corridors for San Joaquin kit fox dispersal (Constable et al. 2009). However, during the 2005 to 2007 surveys, kit fox were not detected by the camera traps along these potential corridors. In addition, the least-cost path analysis is based on evaluating the cost of crossing an area and does not necessarily account for the suitability or potential for inhabitation of the corridor, which in this area is low. Kit fox observations and suitable habitat suggest that a small number of kit foxes are present in the Plan Area, at least for short durations, and that the Plan Area may serve as a corridor for kit foxes dispersing from source populations in the south (ESRP 2008). The available biological data do not strongly support the hypothesis that corridors through San Luis Reservoir/O'Neill Forebay will sustain the species, because the data suggest that the corridors may feed sink populations (breeding groups that do not produce enough offspring to maintain the population) north of Santa Nella. Therefore, the ESRP suggests that conservation efforts in western Merced County be focused on the northernmost known self-sustaining population, between SR 152 to the north, Little Panoche

Reservoir to the south, I-5 to the east, and rugged terrain (greater than 15 percent slope) to the west. The ESRP does not specifically define the western limit, but Constable et al. (2009) includes mapping that identifies the locations of high-suitability habitat for the species in the Plan Area vicinity. Those locations generally correlate with the large areas of green on Map 6c, which lie south of the Plan Area boundaries.

*San Joaquin Kit Fox Conservation Efforts in the Local Vicinity* The community of Santa Nella has created a Habitat Conservation Program (HCP) to protect suitable habitat for the San Joaquin kit fox in the area immediately east of the O'Neill Forebay, at the Arnaudo Brothers, Wathen-Castanos, and River East holdings sites within and adjacent to the Santa Nella Community Specific Plan area (Harvey 2004). The Santa Nella Community Specific Plan includes goals of preserving and managing movement corridors between the northern and southern kit fox populations, as well as permanently preserving habitat occupied by kit foxes and considered important to maintaining kit fox source populations (Harvey 2004). In 2000, Merced County initiated creation of an HCP for the portion of the county east of SR 99; however, no HCP was adopted, nor is one in development (Nicholson 2010).

Although the San Joaquin Valley National Cemetery, approximately 1 mile northwest of O'Neill Forebay, does not have an HCP for the San Joaquin kit fox, the cemetery switched from rodenticide to trapping in 2007 to prevent harm to kit foxes from rodenticides. The San Joaquin Valley National Cemetery land was included in the ESRP camera trap kit fox survey (Bennett 2010).

Rodenticide is not currently used in the Plan Area.

**Blunt-Nosed Leopard Lizard** The blunt-nosed leopard lizard is listed as endangered under ESA and CESA. The blunt-nosed leopard lizard is a large lizard with a broad, triangular-shaped head, a truncated snout, a rounded body, well-developed limbs, granular scales, and a rounded tail that is longer than the body. The color is grayish to brown, with cream-colored crossbands and large dark spots. Adults are active during the breeding season between April and July, and typically lay between two and six eggs in mid-June or July. Juveniles hatch from late July to August, and sometimes into September. They remain active typically through October (Montanucci 1965; Stebbins 2003). While dormant during nonbreeding seasons and at night, the blunt-nosed leopard lizard inhabits small mammal burrows of species such as California ground squirrels and kangaroo rats (*Dipodomys* spp.); however, in areas of low mammal burrow density they can construct their own shallow burrows (USFWS 1998).

The blunt-nosed leopard lizard is restricted in range to portions of the San Joaquin Valley, at elevations from the Central Valley floor up to 2,600 feet in the surrounding foothills (Germano and Williams 1992; Stebbins 2003; USFWS 1985b). It occurs in alkali sink scrub, saltbush (*Atriplex* sp.) scrub, Ephedra scrub, and sparse grasslands, often in areas with alkaline or saline soils (Montanucci 1965; Stebbins 2003). Washes and dirt road corridors may be important in

otherwise poor habitat (e.g., thick grass habitat) (Warrick et al. 1998). In general, this species is absent from areas of steep slope, dense vegetation, and seasonal flooding (Montanucci 1965). The species may occur within the following California Wildlife Habitat Relationships (CWHR) wildlife habitat types: alkali desert scrub, annual grassland, and barren.

Threats include habitat disturbance, destruction, and fragmentation from agriculture, water diversion, urbanization and the introduction of non-native grasses. The blunt-nosed leopard lizard is included in the *Recovery Plan for Upland Species of the San Joaquin Valley* (USFWS 1998). A five-year review completed in February 2010 recommended that no change be made to the blunt-nosed leopard lizard's listing status (USFWS 2010b).

The blunt-nosed leopard lizard is known to occur within 5 miles of the Plan Area. The CNDDB includes a sighting from 1931 that was 1 mile southeast of San Luis Reservoir. In 2003, the blunt-nosed leopard lizard was observed south of Los Banos Creek Reservoir. The known home range for the blunt-nosed leopard lizard varies by gender (0.25 to 2.7 acres for males and 0.52 to 4.2 acres for females; USFWS 1998).Therefore, this species is presumed extant in the Plan Area.

**Giant Garter Snake** The giant garter snake has been listed as threatened under the ESA since it was initially listed in 1993. It is one of the largest garter snakes and it can reach lengths in excess of 5 feet. Females tend to be slightly longer and stouter than males.

Endemic to wetlands in the Sacramento and San Joaquin valleys, the giant garter snake inhabits marshes, sloughs, ponds, small lakes, low gradient streams, and other waterways and agricultural wetlands, such as irrigation and drainage canals and rice fields. Giant garter snakes feed on small fishes, tadpoles, and frogs (Hansen 1980). Habitat requisites consist of: (1) adequate water during the snake's active season (early-spring through mid-fall) to provide food and cover; (2) emergent, herbaceous wetland vegetation, such as cattails and bulrushes, for escape cover and foraging habitat during the active season; (3) grassy banks and openings in waterside vegetation for basking; and (4) higher elevation uplands for cover and refuge from flood waters during the snake's dormant season in the winter (Hansen 1980). Giant garter snakes are typically absent from larger rivers and other water bodies that support introduced populations of large, predatory fish, and from wetlands with sand, gravel, or rock substrates (Hansen 1980). Riparian woodlands do not provide suitable habitat because of excessive shade, lack of basking sites, and absence of prey populations (Hansen 1980).

The giant garter snake inhabits small mammal burrows and other soil crevices above prevailing flood elevations throughout its winter dormancy period (i.e., November to mid-March). Giant garter snakes typically select burrows with sunny exposure along south-facing and west-facing slopes. Giant garter snakes also use burrows as refuge from extreme heat during their active period. The Biological Resources Division (BRD) of the USGS (Wylie et al. 1997) has documented giant garter snakes using burrows in the summer as far as 165 feet

away from the marsh edge. Overwintering snakes have been documented using burrows as far as 820 feet from the edge of marsh habitat. During radio-telemetry studies conducted by the BRD, giant garter snakes typically moved little from day to day. However, total activity varied widely between individuals. Giant garter snakes have been documented moving up to 5 miles over the period of a few days (Wylie et al. 1997). The breeding season extends through March and April, and females give birth to live young from late July through early September (Hansen and Hansen 1990).

The giant garter snake once ranged throughout the San Joaquin Valley as far south as the historic Tulare, Kern, and Buena Vista lakebeds, but it has been extirpated from many areas due to habitat conversion. The Plan Area is within the San Joaquin and South Valley Recovery Units for the giant garter snake. Within the San Joaquin Recovery Unit, existing populations are limited to the western side of the Central Valley, and within the South Valley Recovery Unit, no extant populations of the species are known to occur. The Giant Garter Snake Recovery Plan (USFWS 1999) identifies several areas of privately and publicly owned freshwater marshes where repatriation of this species is possible. However, extirpation of the southernmost populations in the San Joaquin Valley has since been confirmed, and the southernmost range of the species is currently restricted to Burrel in Fresno County (USFWS 1999). Although there are no sightings of the giant garter snake within the Plan Area (DFG 2012), this species is known to occur within 10 miles of the area.

#### *2.6.3.2 Other Special-Status Species*

**Foothill Yellow-Legged Frog** The foothill yellow-legged frog (*Rana boylii*), a California species of special concern, was once common in most Pacific drainages throughout the foothills of California extending from the Oregon border south to the San Gabriel River system in Los Angeles County. The species has been recorded at elevations ranging from near sea level to more than 6,000 feet. Foothill yellow-legged frogs inhabit shallow, small to medium sized streams with cobble substrates, beneath which they deposit their eggs (Jennings and Hayes 1994).

The foothill yellow-legged frog has been recorded in the Plan Area along the western end of Los Banos Creek (Map 6d).

**Western Spadefoot** The western spadefoot (*Scaphiopus hammondii*) is a California species of special concern. The western spadefoot primarily inhabits grasslands, frequenting washes, floodplains of rivers, alluvial fans, playas, and alkali flats, but also ranges into foothills and mountain valleys up to 3,000 feet. The species prefers areas of open vegetation and short grasses where the soil is sandy or gravelly (Stebbins 1985). Breeding habitat consists of seasonally inundated pools or occasionally low-gradient, seasonal streams (Jennings and Hayes 1994). This amphibian occurs in the central and southern Coast Ranges, the Central Valley, and the foothills of the Sierra Nevada (Stebbins 1985).

The closest recorded CNDDB occurrence is approximately 8 miles south of Los Banos Creek Reservoir (DFG 2012). As the western spadefoot shares similar habitat requirements with the California tiger salamander, the potential presence of suitable California tiger salamander habitat in the Plan Area indicates that suitable habitat for the western spadefoot may also be present.

**Bats** The pallid bat and western mastiff bat are California species of special concern. The pallid bat occupies a wide variety of habitats (grassland, shrubland, and forest) but is most common in open dry habitats with rocky areas for roosting. The pallid bat occupies both day and night roosts. Day roosts are in caves, crevices, mines, and occasionally hollow trees and buildings, while night roosts are in more open sites. In addition, the pallid bat has hibernation roosts, but the locations are unknown.

Habitat for day roosts may occur in caves, crevices, and mines outside the Plan Area; however, trees in the Plan Area may provide night roosts as well as foraging territory.

The western mastiff bat is not known to use night roosts but utilizes steep cliffs for day roosts. The steep slopes to the west of Los Banos Creek Reservoir may provide day roosts, and they are the location of a CNDDB observation of the western mastiff bat. The Plan Area likely provides foraging territory but not roosts for the western mastiff bat.

**North American Badger** The North American badger, a California species of special concern, is a mammal that historically ranged throughout California, excluding the humid forested areas of the Pacific Northwest, in open grasslands and generally treeless regions characterized by friable soils in drier open shrub land, open forest, and herbaceous habitats (Ahlborn 2005; Larsen 1987). Badgers typically occupy home ranges of differing areas, from 2 (winter) to 50 (autumn) to 850 (summer) acres, and utilize and/or excavate burrows for dens, escape, and predation (foraging). Although some badgers are known to excavate burrows on a nightly basis, especially during the summer months, others routinely reuse burrows (Ahlborn 2005).

The North American badger has been observed in the Plan Area between San Luis Reservoir and O'Neill Forebay. Since the majority of the Plan Area is grassland, the North American badger may occur in the Plan Area. In addition, because of the large sizes of home ranges during the summer season, badgers may occupy portions of the Plan Area grasslands during the summer.

**Tricolored Blackbird** The tricolored blackbird is a California species of concern. Of the world population of tricolored blackbirds, 95 percent occur in California (PRBO 2002). Surveys indicate that populations have been rapidly declining for decades. The main causes for the decline are loss of native wetland habitat for nest building, loss of associated foraging habitat, disturbance and mortality by predators and humans, destruction of colonies by agricultural practices, direct poisoning, and poisoning by selenium (Beedy et al. 1991).

For breeding, this highly gregarious species prefers freshwater marshes with dense stands of cattails and/or bulrushes, and occasionally willows, thistle, mustard, and blackberry tangles. Often, nesting colonies contain only tricolored blackbirds, with perhaps a few red-winged or yellow-headed blackbirds on the periphery. These colonies are very dense and ranged in size from about 50 nesting pairs to over 200,000 pairs (Small 1994). During fall and winter, nomadic flocks join feeding and roosting aggregations of other blackbirds at feedlots and in agricultural fields.

Approximately 1,000 tricolored blackbirds were observed at the Medeiros Use Area during the June 2003 field survey. The birds were found at numerous locations along the O'Neill Forebay shoreline. Smaller flocks were also seen foraging in the fields south of the use area. As many as 200 tricolored blackbirds were presumed to be nesting in a large depression adjacent to the forebay. The nesting site was located within a large area of emergent marsh vegetation surrounded by willows and other woody riparian vegetation. Numerous fledglings were observed being fed by adults, indicating that many of the nesting attempts were successful. It was not determined if tricolored blackbirds were using other riparian and emergent vegetation along the shoreline of the forebay to nest, but many of these areas appeared to be suitable to support at least a small number of nesting pairs. Suitable habitat was also noted at several other locations in the Plan Area.

A few tricolored blackbirds were also observed at the O'Neill Forebay Wildlife Area, which has been identified as one of the eight most important tricolored blackbird nesting locations for potential conservation action (PRBO 2002). The O'Neill Forebay Wildlife Area colony included 7,500 birds in 1993 but was reduced to 130 nonbreeding birds by 2000. The reason for the decline has been attributed to a decline in the Himalayan blackberry, which was used as the nesting substrate, due to rising water (PRBO 2002).

**Western Pond Turtle** The western pond turtle is a California species of special concern. The aquatic turtle is found in a variety of habitats, including lakes, rivers, streams, and stock ponds. The turtles usually leave the aquatic site to reproduce and overwinter. They nest in upland habitat, sometimes 400 meters or more from aquatic sites.

Western pond turtles were not found in the Plan Area during 2002 field surveys conducted by EDAW but are known to occur in O'Neill Forebay. They could also persist in some of the smaller permanent aquatic habitats present at the Plan Area, such as the pond located below the Los Banos Creek Reservoir dam. The CNDDB includes a 1985 occurrence from Los Banos Creek Reservoir, and pond turtles were observed by an EDAW biologist in a stock pond immediately adjacent to San Luis Reservoir at Pacheco State Park in 2002.

**San Joaquin Whipsnake** The San Joaquin whipsnake is a federal species of concern and a California species of special concern. This snake occurs in open, dry, vegetative associations with little or no tree cover. It usually requires one or

more mammal associates because it uses burrows for refuge and probably for egg deposition, and may sometimes depend on mammals for food. Although this snake probably has a high degree of dependence on mammals, the nature of such relationships is vague.

Diet consists of rodents, lizards and eggs, snakes (including rattlesnakes), birds and eggs, young turtles, insects, and carrion. Individuals probably have a relatively large home range, but movement data are lacking. Subterranean overwintering sites are probably located in a burrow system. Mating is thought to occur in May and egg deposition probably occurs in June or early July. Sites where eggs are deposited have not been found but are probably situated in the wall of rodent burrows. Clutch size probably ranges from 4 to 20 (Stebbins 1985). Adults may disappear seasonally as early as the first part of August, perhaps in response to a late-summer decline in food resources (DFG 2006). They hibernate in soil or sand approximately one foot below the surface, sometimes at the bases of plants. The San Joaquin whipsnakes are mainly terrestrial, but occasionally climb trees and bushes to bask, seek prey and cover (CWHR 2002).

The San Joaquin whipsnake ranges from the Delta south to the San Joaquin Valley and Coast Ranges in Kern and Santa Barbara counties. In the western San Joaquin Valley, it occurs in valley grassland and saltbush scrub associations and is known to climb bushes such as fat hen for viewing prey and potential predators. Occurrences of the San Joaquin whipsnake have been recorded around Los Banos Creek Reservoir. Although these observations were from the mid to late 1980s, this species is considered present within this area (DFG 2012).

**Special-Status Raptors** Special-status raptors known or expected to occur in the Plan Area vicinity include golden eagle, prairie falcon, ferruginous hawk, burrowing owl, northern harrier, and white-tailed kite. The white-tailed kite and golden eagle are listed as fully protected by the DFG, while the ferruginous hawk is listed by the DFG as protected under California Fish and Game Code Section 3503. The burrowing owl and northern harrier are California species of concern. The prairie falcon is Watch-Listed by the DFG. With the exception of the ferruginous hawk, which are expected to occur in the Plan Area vicinity only during winter, all of these raptors could potentially use the area as nesting habitat.

Prairie falcons are typically found in open, arid habitats near cliffs suitable for nesting. Prairie falcons were observed upstream from Los Banos Creek Reservoir during 2002 field surveys. The CNDDB also includes several prairie falcon nesting occurrences in the region.

Burrowing owl, golden eagle, ferruginous hawk, and northern harrier are all known, or expected, to occur in the Plan Area vicinity. The northern harrier was observed during 2002 field surveys. Several burrowing owl occurrences in the Plan Area vicinity are recorded in the CNDDB. Golden eagles were not observed during 2002 surveys but are known to occur regularly at Pacheco State Park and San Luis Reservoir (Milam 2002). The ferruginous hawk is a regular winter visitor to the area. All four of these species favor grasslands and other open

country for foraging. Suitable foraging habitat for all four species is abundant throughout the Plan Area vicinity. The area provides suitable nesting habitat for northern harriers and burrowing owls, and marginally suitable nesting habitat for golden eagles, which require steep cliffs or medium to tall trees for nesting sites.

## 2.6.4 Special-Status Habitat Communities and Plants

### *2.6.4.1 Habitat Communities*

A search of the CNDDB identified four sensitive habitat communities as being present or potentially present in the Plan Area: Valley sink scrub, Alkali seep, Great Valley Cottonwood Riparian Forest, and Cismontane alkali marsh. Valley sink scrub was previously recorded near Los Banos Creek Reservoir. Although it was not identified during reconnaissance-level surveys, it has the potential to occur within the Plan Area. The three remaining habitat communities are not expected to occur in the Plan Area. Alkali seep and Great Valley cottonwood riparian forest were not found in reconnaissance-level surveys and Cismontane alkali marsh is typically found on former lakebeds such as the San Joaquin Valley outside of the Plan Area.

Three additional sensitive habitat communities were observed in the Plan Area during reconnaissance-level surveys: Sycamore alluvial woodland, iodine brush scrub and purple needle grass. No CNDDB records for these three communities exist.

### *2.6.4.2 Special-Status Plant Species*

A search of the CNDDB and CNPS database identified 18 plants that could occur in the Plan Area (Table 2-17). Three additional species were added to Table 2-17 based on Robert Edminster's plant species list for nearby Pacheco State Park: big-scale balsamroot (*Balsamorhiza macrolepis* var. *macrolepis*), Santa Clara Valley liveforever (*Dudleya setchelii*), and Congdon's tarplant (*Hemizonia parryi* ssp. *congdonii*). The potential for the special-status species to occur within the study area was assessed based on reconnaissance-level field surveys of habitat or vegetation types conducted in 2003. (Vegetation types observed within the study area are described in Appendix B.) No state or federally listed special-status plant species are known to occur in the Plan Area.

Only gypsum-loving larkspur (*Delphinium gypsophilum* ssp. *gypsophilum*), a CNPS List 4 species, occurs within the study area, found in grassland habitats at O'Neill Forebay. List 4 species are those species that are not currently rare, threatened, or endangered but are sufficiently rare or uncommon that their status may change in the future.

## 2.6.5 Fisheries Resources

San Luis Reservoir is an off-stream storage facility, not originally part of a river or stream system; however, small drainages existed in the area. No documentation exists regarding whether native fish species were present in the drainages that were flooded as part of the construction of San Luis Reservoir and O'Neill Forebay. Water is pumped to the reservoir from the DMC and/or the California

Aqueduct. As a result, fish have been transported into San Luis Reservoir either through water pumped from the DMC or Aqueduct or by direct introduction.

Los Banos Creek Reservoir was constructed to provide flood protection for the city of Los Banos and adjacent areas, and to protect the San Luis Canal portion of the California Aqueduct by controlling the flow of streams crossing the canal. There are no records of aquatic species in Los Banos Creek prior to dam construction. The first water works in the area were constructed in 1871 when a canal brought water from Mendota Dam to Los Banos Creek for agricultural irrigation. Currently, Los Banos Creek Reservoir supports an active warmwater largemouth bass and white crappie fishery. The DFG has periodically stocked rainbow trout, a coldwater species, in Los Banos Creek Reservoir. The trout fishery is limited primarily to the winter months due to the warmer water temperatures in the summer months.

**Potentially Occurring Fish Species** San Luis Reservoir and O'Neill Forebay support several species of fish that have become established within the system either by direct introduction or from the Sacramento–San Joaquin Delta System via pumping from the California Aqueduct and DMC. These species include Sacramento blackfish (*Orthodon microlepidotus*), American shad (*Alosa sapidissima*), threadfin shad (*Dorosoma petenense*), largemouth bass (*Micropterus salmoides*), kokanee salmon (*Oncorhynchus nerka*), green sunfish (*Lepomis cyanellus*), blue gill (*Lepomis macrochiru*), white sturgeon (*Acipenser transmontanus*), and white crappie (*Pomoxis annularis*). During 2001 to 2003 an active striped bass stocking program within San Luis Reservoir was funded by the California striped bass stamp program. The program has since expired.

**Special-Status Fish Species** Although O'Neill Forebay is connected to the San Joaquin River system, screened upstream pumps would prevent the transport of special-status species from the California Aqueduct and DMC into the forebay or San Luis Reservoir. No special-status fish have been recorded in Los Banos Creek Reservoir.

### 2.6.6 Invasive and Nonnative Species

A nonnative species is an organism that has not evolved in a specific geographical area but has been introduced into the area either accidentally or deliberately. These species are considered invasive when they have a detrimental impact on the area. Most nonnative species are not invasive and do not have adverse effects on natural plant and animal communities. Nevertheless, the introduction of certain nonnative plant species has resulted in the conversion of native habitats to a nonnative vegetation type, resulting in a reduction of native plants and the degradation of wildlife habitat.

#### *2.6.6.1 Invasive Species*

Quagga mussels *(Dreissena rostriformis bugensis)* and zebra mussels *(D. polymorpha)* are invasive nonnative species of freshwater mollusk that originated in Eastern Europe and are thought to have been first introduced into the Great Lakes region in the late 1980s. Since then, the species have spread, either by boat

or water movement, throughout the Midwest and the eastern United States (Benson and Raikow 2011). In January 2007, quagga mussels were detected in Lake Mead and the Colorado River water system; more recently, they were found in certain lakes in Southern California (Benson et al. 2011). To prevent the spread of invasive mussels, boating restrictions have been imposed at recreation areas in several states, such as Kansas, Minnesota, Colorado and Arizona.

Invasive mussels can multiply quickly and clog waterways and pipelines, affect lake ecosystems, and create costly maintenance issues. Invasive mussels can be inadvertently transported by a number of means. Mussels can reside on anything that comes in contact with an infested waterbody, ranging from recreational watercraft to shoes and pets. Equipment exposed to infested waters—such as diving gear, nets, waders, and buckets—can also transport mussels or larvae. Water conveyance facilities such as aqueducts can transport mussels from infested to uninfested waters. Research suggests that waterbodies in most of California may be at high risk for infestation because chemical parameters such as calcium levels allow invasive mussel species to survive and reproduce (Whittier et al. 2008).

Zebra mussels were detected in San Justo Reservoir in San Benito County in January 2008. The reservoir and adjacent recreation area have been closed to the public since the presence of zebra mussels was confirmed (San Benito 2009). San Justo Reservoir is approximately 20 miles from the Plan Area.

Reclamation, in coordination with other state and federal agencies, is conducting research and field testing to prevent the spread of invasive mussels. In 2010, the Reclamation Mussel Task Force collected and analyzed 3,326 water samples from 347 water bodies located within the 17 western states for presence of quagga and zebra mussels (Reclamation 2011f). Tow-net samples from each water body were collected at multiple locations during the 2011 warm season, generally on a monthly basis, and sent to Reclamation's Denver Technical Service Center Mussel Laboratory for testing. As of July 2012, neither quagga nor zebra mussels have been observed in San Luis Reservoir, O'Neill Forebay, or Los Banos Creek Reservoir. Additional monitoring and testing will continue to be conducted.

In October 2011, CSP initiated a vessel inspection program in the Plan Area as a precautionary measure to reduce the risk of the importation of invasive mussels. The program is described in more detail in Section 2.9.1. Should the presence of quagga or zebra mussels be confirmed in the future, eradication measures would be subject to additional environmental impact analysis and documentation in compliance with NEPA.

#### *2.6.6.2 Nonnative Species*

Several plant species on the *Most Invasive Wildland Pest Plant* list, developed by the California Exotic Pest Plant Council (CalEPPC 2006, 2007), occur in the Plan Area. These species have the potential to convert native habitats to areas of nonnative vegetation. Asterisks (*) indicate plants that are also listed on the

California Department of Food and Agriculture's list of noxious weeds (California Department of Food and Agriculture 2012).

- Himalayan blackberry (*Rubus discolor*);
- yellow starthistle (*Centaurea solstitialis*);* and
- red brome (*Bromus madritensis* ssp. *rubens*).

In addition, the following species were not observed in these areas but may be present:

- perennial pepperweed (*Lepidium latifolium*);*
- fennel (*Foeniculum vulgare*); and
- medusahead (*Taeniatherum caput-medusae*).

Nonnative plants that occur at these wildlife areas and are classified as *Wildland Plants of Lesser Importance* by the California Exotic Plant Protection Council (CalEPPC 1999):

- bull thistle (*Cirsium vulgare*) and
- poison hemlock (*Conium maculatum*).

Other species that are potentially present:

- tall fescue (*Festuca arundinacea*);
- Italian thistle (*Carduus pycnocephalus*);* and
- red starthistle (*Centaurea melitensis*).

At the O'Neill Forebay Wildlife Area, some nonnative species may provide valuable nesting habitat and are not likely to threaten native species. The grassland and cultivated areas of the O'Neill Forebay Wildlife Area consist almost entirely of nonnative species. Some of these species have been planted, such as a species of *Elgaria*, a nonnative bunch grass, while others have colonized this area after farming ceased. The Himalayan blackberry may provide valuable nesting and roosting habitat for blackbirds. Poison hemlock may also provide nesting habitat for birds.

### 2.6.7 Tule Elk

Tule elk (*Cervus elaphus nannoides*) are one of the largest land mammals endemic to California. Though not a federal or state special-status species, tule elk are a notable wildlife feature of the Plan Area.

Although the smallest subspecies of elk, the tule elk is a large mammal, with the bulls weighing up to 500 pounds or more. They consume a wide variety of plants but prefer grasses and forbs. The massive antlers of the bull elks are shed and regrown annually. Calves are generally born in May and June.

Approximately half a million tule elk were distributed throughout the Sacramento and San Joaquin valleys and the oak-woodlands and oak-grasslands of the Coast Range at the time the early European explorers arrived (McCullough 1969). By

the 1860s, the population was nearly extirpated due to market hunting, competition from introduced livestock, conversion of perennial grasslands to annual grasslands, and the change of large amounts of their habitat to agricultural land use (McCullough 1969).

In 1874, a small group of elk was found on the Miller-Lux Cattle Ranch near Los Banos (Fowler 1985). Ranch owner Henry Miller ordered a complete protection of the tule elk on his land. By the turn of the century, however, the elk were causing extensive damage to the ranch (Fowler 1985). Relocation efforts began in 1914. By 1940, various agencies had succeeded in establishing three elk herds in California (McCullough 1969). The numbers continued to increase through relocation efforts of DFG and protection of habitat.

The California Fish and Game Code was amended in 1971 to prohibit the take of any tule elk until the population exceeded 2,000 animals (Koch 1989). At the time there were about 500 animals. With increasing numbers, damage to private property continued to rise. Total protection of tule elk was removed, and in 1989 regulated hunting resumed. As of 2009, there were almost 4,000 tule elk in 22 separate herds spread throughout California.

In the early 1990s, as part of a continuing effort to expand the tule elk population throughout its historic range, DFG reintroduced tule elk to a private ranch (Wild Rose Ranch) on the southwest side of San Luis Reservoir. The population has slowly increased to the upper 200s, with over half of the elk spending most of their time in Pacheco State Park. This group generally stays west of a line between Dinosaur Point to south of Portuguese Cove. When the water level in San Luis Reservoir is low and there is green vegetation along the shoreline, these individuals will move down to the reservoir from Pacheco State Park. A group of more than 60 elk roams below the B.F. Sisk (San Luis) Dam and eastward to I-5. Approximately 70 more elk are scattered elsewhere in and near the Plan Area (Gerstenberg 2011; Hobbs 2011).

Tule elk in the Plan Area are best observed around dawn and 2 to 3 hours before sunset, when they are most active.

## 2.7 Cultural Resources

### 2.7.1 Regulatory Setting

Cultural resources are archaeological, built environment, and traditional resources that include, but are not necessarily limited to districts, buildings, sites, structures, or objects, which may have historical, architectural, archaeological, cultural, or scientific/engineering importance. Numerous laws, regulations, and statutes, on both the federal and state levels, seek to protect and target the management of cultural resources. All activities in the Plan Area (i.e., under the aegis of Reclamation) that have a potential to affect cultural resources must comply with Section 106 of the National Historic Preservation Act (NHPA) as implemented by the regulations at 36 CFR Part 800 (Revised August 5, 2004). Historic properties

are those cultural resources listed on or determined eligible for the National Register of Historic Places (NRHP). All cultural resources located within the Plan Area that have not been evaluated under the criteria of eligibility for the NRHP (36 CFR Part 63) are assumed to be eligible, and therefore historic properties, until such time as a formal determination of NRHP eligibility in completed. Agencies that have management responsibilities for/on federal lands (through agreements or contracts) are required to follow federal law and regulation on federal lands. Any undertakings on Reclamation lands must follow, without exception, Reclamation's Section 106 cultural resources directives and standards manuals LND P01, LND 02-01, and LND 07-01. The Reclamation Mid-Pacific Office (regional office) will serve as the point of contact for all cultural resource issues. This office will be responsible for directing the federal compliance processes on all undertakings on Reclamation lands.

To determine if an undertaking could affect NRHP eligible properties, all cultural resources within the area of potential effect of that undertaking must be inventoried and evaluated for inclusion in the NRHP. 36 CFR Section 800.13 provides guidelines for the treatment of post-review cultural resource discoveries.

Section 110 of the NHPA lays out the broad historic preservation responsibilities of federal agencies and is intended to ensure that historic preservation is fully integrated into the ongoing programs of all federal agencies. The intent of Section 110 is that historic properties under the jurisdiction or control of a federal agency are managed and maintained in a way that considers the preservation of their historic, archaeological, architectural, and cultural values and the avoidance of unnecessary damage to them. It also declares that the costs of preservation activities are eligible project expenditures in all undertakings conducted or assisted by a federal agency.

The Archaeological Resources and Protection Act (ARPA) of 1979 was enacted to secure the protection of archaeological resources on federal and Indian lands. ARPA describes prohibited activities regarding archaeological resources and the financial and incarceration penalties for violators. It also sets forth the regulations that describe the requirements that must be met before federal agencies can issue a permit to excavate or remove any archaeological resource on federal or Indian lands.

The Native American Graves Protection and Repatriation Act (NAGPRA) (25 USC 3001 et seq.) only applies to actions on federal lands and requires federal agencies and certain recipients of federal funds to document Native American human remains and cultural items within their collections, notify native groups of their holdings, and provide an opportunity for repatriation of these materials. This Act also requires planning for dealing with potential future discoveries and collections of Native American human remains and associated funerary objects, sacred objects, and objects of cultural patrimony. NAGPRA also provides for the possibility that such remains could be found on property owned or otherwise administered by federal agencies such as Reclamation.

CEQA and California Public Resources Code (PRC) Sections 5024 and 5024.5 offer guidelines regarding impacts on cultural resources. Whether of historic or prehistoric age, cultural resources are referred to as historical resources. "'Historical resource' includes, but is not limited to, any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California" (PRC §5020.1[j]).

Sections 5024 and 5024.5 of the PRC state that "each state agency shall formulate policies to preserve and maintain, when prudent and feasible, all state-owned historical resources under its jurisdiction listed in or potentially eligible for inclusion in the National Register of Historic Places or registered or eligible for registration as a state historical landmark pursuant to Section 5021 of the PRC." The PRC requires state agencies to formulate policies to preserve and maintain, when prudent and feasible, all state-owned historical resources under their jurisdiction that are listed or potentially eligible for inclusion in the NRHP. The criteria for inclusion are essentially equivalent to those for the California Register of Historical Resources (CRHR). Agencies may not undertake projects that adversely affect such resources without prior consultation with the SHPO. The CSP's policies for ensuring compliance with these requirements are included in a Memorandum of Understanding with the SHPO and are incorporated in a Department Notice (DN 2002-3 and amendments).

CEQA states that if implementation of a project would result in significant impacts on important cultural resources, then alternative plans or mitigation measures must be considered. However, only significant cultural resources need to be addressed. The State CEQA Guidelines define a significant historical resource as a resource listed or eligible for listing on the CRHR. In addition, the State CEQA Guidelines require consideration of unique archaeological sites. If an archaeological site does not meet the criteria for inclusion on the CRHR but does meet the definition of a unique archaeological resource as outlined in CEQA (PRC §21083.2), it may be treated as a significant historical resource. Cultural resources that have not been formally evaluated for inclusion on the CRHR (or the NRHP) will be treated as significant for planning purposes until such evaluation takes place.

The preferred treatment option for both eligible and unique archaeological resources under CEQA (PRC §21083.2) is preserving such resources in place in an undisturbed state. Other acceptable methods of mitigation include excavation and curation or study in place without excavation.

The California Health and Safety Code (§7050.5) requires that excavation activities be stopped whenever human remains are uncovered and that the county coroner be called in to assess the remains. If the county coroner determines that the remains are those of Native Americans and if the remains have been identified on lands that are not federal, the Native American Heritage Commission (NAHC) must be contacted within 24 hours. When the discovery is made on federal lands,

the provisions set forth in NAGPRA apply rather than the California Health and Safety Code. The NAHC will immediately notify those persons it believes to be most likely descended from the deceased Native American, and direct the lead agency to consult with the appropriate Native Americans to develop an agreement for the treatment and disposition of the remains (PRC §5097.98).

For historic structures, public agencies follow the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings (1995), or the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings (1992).

As a state agency, CSP is obligated to conform to the cultural resource provisions of CEQA. However, CEQA standards are, in large part, superseded by the federal regulatory framework because the Plan Area lands are entirely on federal property (in this case, Reclamation land). Although Reclamation maintains ownership of the land, a Memorandum of Understanding (MOU) between Reclamation and CSP applies. The MOU requires that any cultural resource studies conducted within the Plan Area conform to Section 106 of the NHPA standards.

### 2.7.2 Cultural Setting

The Plan Area is rich in traces of its prehistoric and historic cultural heritage. Located in two valleys at the eastern base of the Diablo Range on the edge of the Central San Joaquin Valley, the landscape within and around the Plan Area was important for Native Americans and, subsequently, Euro-American settlers and entrepreneurs. The varied natural setting and accessibility to the San Joaquin Valley and the coast provided a diversity of settings and resources that have attracted a wide range of native and immigrant cultural groups for thousands of years.

Although evidence of prehistoric and historic patterns of land use have been documented in the Plan Area in at least 32 studies dating from 1960 to 2010 (Table 2-18), the San Luis Reservoir area has never been subjected to a systematic archaeological survey. Its construction period of 1963-1967 predated the enactment of the major environmental and cultural resources statutes such as NHPA (1966), NEPA (1969), CEQA (1970), and ARPA (1979) and only limited preconstruction and construction period archaeological surveys and excavations were completed.

Topography, vegetation, water sources, and proximity of the Plan Area to diverse ecosystems make it highly likely that the area was heavily utilized throughout prehistoric and historic times. Given such a landscape, it is almost certain that many undocumented archaeological sites, features, and artifacts are present within the Plan Area.

**Table 2-18**
**Cultural Resource Studies Conducted within the Plan Area**

| Reservoir | Date | Authors | Study Title |
|---|---|---|---|
| O'Neill Forebay | 4-1-83 | Wm. Pritchard | Archaeological Testing of Three Kahwatchwah Yokuts Dwelling Structures at the San Luis Forebay Site (CA-Mer-119), Merced County, CA (in: *Papers on Merced County Prehistory, California Arch. Reports No. 2*) (CSP) |
| O'Neill Forebay | 1-1-84 | Betty Rivers | CA-Mer-119 Site Stabilization Project, San Luis Reservoir State Recreation Area (CSP) |
| San Luis Res.[1] | May 2003 | DPR, Architectural Conservation, LLC, & Past Forward, Inc. | Gonzaga Adobe Stabilization Study Cultural Stewardship Project Pacheco State Park, Santa Clara County, California |
| O' Neill Forebay | 10-10-03 | Mike Bielicki & Warren Wulzen | Trail Along O'Neill Forebay at San Luis Creek Campground (CSP) |
| O'Neill Forebay | 1-5-06 | Warren Wulzen & Joanne Karlton | Accessibility Modifications (CSP) |
| O'Neill Forebay | 1-16-07 | Dan Millsap & Jeff Brooke | San Luis Reservoir Americans with Disabilities Act (ADA) Improvements (San Luis Creek) |
| O'Neill Forebay | 1-18-07 | Steven Nawrath, Warren Wulzen & Jeff Brooke | San Luis Creek Accessible Trail Improvements |
| O'Neill Forebay & San Luis Reservoir | 1-24-2008 | Warren Wulzen | Archaeological Survey Report, 2007-08 Deferred Maintenance Program Projects, Sewage Lift Stations and Water Treatment Facilities, San Luis Reservoir State Recreation Area, Merced County, CA |
| O'Neill Forebay & San Luis Reservoir | 1-13-09 | Warren Wulzen | Archaeological Survey Report, Basalt Trail Accessibility improvements, San Luis Reservoir State Recreation Area, Merced County, CA |
| San Luis Res. & O'Neill Forebay | 2-28-82 | Dan Foster | An Archaeological Reconnaissance of the Gonzaga Conservation Camp, Merced County, California (Cal Fire) |
| San Luis Res. | 1975 | C. Nissley | Archaeological Investigations at CA-Mer-27: Phase II (CSP) |
| San Luis Res. | 4-1-83 | Wm. Olsen & Louis Payen | Excavations at CA-Mer-130: A Late Prehistoric Site in Pacheco Pass (in: *Papers on Merced County Prehistory, California Archaeological Reports No. 2*) (CSP) |
| San Luis Res. | 7-1-77 | Jeff Bingham & Peter Schulz | The Effects of Prolonged Freshwater Inundation on Cultural Resources – Preliminary Report and Recommendations (CSP) |
| San Luis Res. | 5-1-69 | Wm. Olsen & Louis Payen | Archaeology of the Grayson Site, Merced County, California *(Archaeological Report 12*) (CSP) |
| San Luis Res. | 7-25-02 | Gary Smith & W. Wulzen | Soil and Ground Water Investigation (CSP) |
| San Luis Res. | 4-30-03 | J. Collins & W. Wulzen | Basalt Parking Lot (CSP) |
| San Luis Res. | 4-1-83 | W.I. Follett | Fish Scales from the Los Banos Site (CA-Mer-14), Merced County, California (in: *Papers on Merced* |

**Table 2-18**
**Cultural Resource Studies Conducted within the Plan Area**

| Reservoir | Date | Authors | Study Title |
|---|---|---|---|
| Rec. Area | | | *County Prehistory, California Arch. Reports No. 2*) (CSP) |
| San Luis Res. | 1960 | A. Treganza | Archaeological Investigations in the San Luis Reservoir Area, Merced County, California. Report to the California Department of Parks and Recreation, Sacramento |
| San Luis Res. | 4-6-06 | Jim Trapani & Warren Wulzen | Basalt Campground Restroom 1 &2 (CSP) |
| San Luis Res. | 10-22-04 | Mike Bielicki & Warren Wulzen | Accessibility Retrofit, Basalt Campground and Day Use Area |
| San Luis Res. | 2-27-07; revised 10-29-08 | Bissonnette | San Luis Gonzaga Ranch |
| San Luis Res. | January 2010 | ICF International | B.F. Sisk Dam Corrective Action Project Cultural Resources |
| Los Banos Res. | 1970 | Frank Riddell | A Symposium on the Culture Sequence of the Kawatchwa Yokuts Area: The Archaeology of the Western San Joaquin Valley (7 articles) (CSP) |
| Los Banos Res. | 3-1-94 | David Scott | Archaeological Assessment of Site CA-Mer-68, Merced County, California (CSU Bakersfield) |
| Los Banos Res. | 1986 | Chavez & Associates | Cultural and Paleontological Resources Evaluation for the Los Banos-Gates Transmission Project |
| Los Banos Res. | 1-28-93 | Helen McCarthy | Survey of Ethnographic Resources and Native American Consultation for the South of the Delta Res. Project (CSP) |
| Los Banos Res. | 8-1-90 | P. Mikkelson & William Hildebrandt | Archaeological Inventory and Evaluation for the Proposed Los Banos Grandes Reservoir, Merced County, California (Far Western Anthropological Group) |
| Los Banos Res. | 8-1-90 | Donald Wren | Los Banos Grandes Offstream Storage Project: An Archaeological Reconnaissance (CSU Fresno) |
| Los Banos Res. | 10-15-79 | M.I. Russo & K.C. McBride | A Phase I Cultural Resources Planning Summary and Preliminary Field Work Proposal for Three Reservoir Locations in Central California: Los Vaqueros, Los Banos, and Glenn Complex (DWR) |
| Los Banos Res. | 8-1-72 | Anonymous | Resources Inventory, Los Banos Creek Reservoir |
| Los Banos Res. | 6-1-70 | Wm. Pritchard | Archaeology of the Menjoulet Site, Merced County, California (CSP) |
| Los Banos Res. | 8-1-66 | Wm. Pritchard | The Archaeology of Lower Los Banos Creek, Merced County, California (CSP) |

[1] The Gonzaga Adobe was originally located within the Plan Area at San Luis Reservoir but has been relocated to Pacheco State Park, which borders the Plan Area to the west (CSP 2004).

To place the prehistoric and historic sites of Plan Area into a broader context, they need to be examined from within a larger cultural framework. The presence of a variety of natural resources, topography, and general locations made the area an important economic center and transportation corridor for centuries.

Consequently, cultural traces on the landscape reflect an equally diverse range of peoples and activities.

**Prehistoric Archaeological Context** The Plan Area has benefited from extensive archaeological work conducted in the vicinity. During the 1960s, in anticipation of the construction of the nearby San Luis, Los Banos, and Little Panoche reservoirs, numerous early Native American sites were recorded. Sites documented at Little Panoche, while not included in this study, are important to reference as they are located near the San Luis and Los Banos study areas and contributed greatly to the archaeological record of the area. In several cases, the more substantial sites found in these areas were the focus of intensive subsurface investigations (Nissley 1975; Olsen and Payen 1968, 1969, 1983; Pritchard 1970, 1983; Romoli and Ruby 1963). Olsen and Payen (1969) and Moratto (1984), based on some of this research, have postulated estimated dates for the prehistoric cultural sequence of the area that includes the Positas, Pacheco, and Gonzaga complexes. Varying occurrences of typologically and technologically distinct artifacts have provided archaeologists with a general sequence of cultural change over time. The causes of these changes tend to be varied, complex, and intricately interrelated, and can include factors such as climate change and shifting degrees of external cultural contact.

**Paleo-Indian (ca. 12,000–7,500 BP).** Although humans may have been present in North America long before this time, the best available archaeological evidence indicates that the first inhabitants in the New World arrived sometime around 12,000 years ago or earlier. Although somewhat controversial, a recent redating (Johnson et al. 2000) of the "Arlington Springs Woman," a Native American burial found on Santa Rosa Island (Orr 1962a,b), indicates that these remains may date as early as 13,000 BP, suggesting a much earlier occupation of California than previously supposed.

Paleo-Indian groups were probably small in size, consisting of extended families that ranged within large areas based on the seasonal availability of various plant and animal species. While sites or artifacts dating to this early period have yet to be found within or in the vicinity of the Plan Area, they could be present in the area.

**Positas Complex (ca. 5,300–4,600 BP).** This cultural manifestation represents the earliest period for which extensive archaeological evidence has been noted in the area of San Luis Reservoir. In general, little is known of this period, and its relationship to earlier and later manifestations is somewhat unclear (Olsen and Payen 1969). However, by this time, early Native Americans appear to have adopted a somewhat more settled lifeway. The lower cultural deposits from CA-Mer-94 at San Luis Reservoir (Olsen and Payen 1969) suggest that extensive trade networks had already been established by this time. Obsidian from distant sources and beads made from marine *Olivella* shells have been recovered from sites dating to this period. Other distinctive artifacts include small stone mortars, short cylindrical pestles, milling stones, and a wide range of flaked stone tools.

**Pacheco Complex (ca. 4,600 BP–1,700 BP).** This period, best represented at CA-Mer-94 (Olsen and Payen 1969), has been divided into two phases based primarily on tool and shell bead forms. Pacheco B (extending until about 3,600 BP) exhibits characteristic foliate-shaped bifaces, rectangular marine *Haliotis* ornaments, and thick rectangular *Olivella* beads. Pacheco A, occurring after ca. 3,600 BP, includes a much wider variety of *Olivella* and *Haliotis* bead and ornament forms, perforated canine teeth, bone tools and whistles, and large stemmed and side-notched points. Abundant milling stones, mortars, and pestles indicate an increased reliance on gathered seed and nut foodstuffs. Evidence for trade also increases during this time, with the bone and shell industries bearing marked similarities with those noted in the Delta "Middle Horizon" and traits from western and southern assemblages (Moratto 1984:192; Olsen and Payen 1969).

**Gonzaga Complex (ca. 1,700–1,000 BP).** Noted from several sites in the Plan Area (CA-Mer-3 and CA-Mer-94), this cultural manifestation has been noted throughout the west side of the valley (Moratto 1984:192). Distinctive features include a mix of extended and flexed human burials, bowl mortars, squared and tapered-stem projectile points, grass saws, and characteristic *Haliotis* and *Olivella* beads and ornaments. Bone and shell artifacts closely resemble those from the Delta "Late Horizon," Phase I (Moratto 1984:192; Olsen and Payen 1969). However, relatively little is known of this period, as the only excavated occurrences have consisted of funerary sites, and the majority of the artifacts have consisted of grave goods (Breschini et al. 1983:79).

**Panoche Complex (ca. 500–150 BP).** Although the Panoche and Gonzaga are fairly well documented in the area and have been found at a limited number of sites, there appears to be a hiatus of approximately 500 years between these distinctive manifestations. During this time, there is a possibility that environmental conditions in the region were unfavorable, and could not support oaks and a subsistence system focused on the gathering and processing of acorns. However, direct archaeological evidence of a dramatic decrease in acorn-bearing oaks during this period has yet to be documented, and only additional research may shed some light on the apparent abandonment of the region between approximately 1,000 and 500 BP (Olsen and Payen 1969; Moratto 1984:191–193).

While a Gonzaga/Panoche 500-year occupation hiatus may be apparent based on the excavations of sites in the Pacheco Pass area, according to Breschini and Haversat (1987), this apparent abandonment may have been somewhat limited and more local in nature. Breschini and Haversat have suggested, based in part on excavations conducted at CA-Fre-1333, that the Gonzaga complex dates should probably be extended several hundred years, considerably narrowing the gap between the Gonzaga and Panoche in the region. However, evidence for a period of abandonment in the late Panoche/early Gonzaga complexes can be discerned at CA-Fre-1333 and a concurrent dramatic change in site function from a small village to a sporadically utilized camp or shelter (Breschini and Haversat 1987:39). Although additional research would be necessary to confirm this

hypothesis, such shifts in site function, population density, and intensity of land use could be related to a decrease in the density of acorn-bearing oaks in the region during this time.

The late prehistoric to early historic Panoche complex (or Late Period Phase II) has been documented at a number of western San Joaquin Valley sites (Breschini et al. 1983:79). Large circular structures occur frequently, along with flexed burials and primary and secondary cremations. Bone and shell artifacts, including *Haliotis* epidermis disk beads and side-ground and rough disk *Olivella* beads, appear similar to those noted from the Delta "Late Horizon" period. Small side-notched arrow points are found on sites dating to this period, and many features of this complex extend well into the historic period, as contacts with Euro-Americans increased in frequency and intensity (Moratto 1984; Olsen and Payen 1969).

Although Pritchard (1970) noted some proto-historic and early historic materials at CA-Mer-3, early accounts suggest that Pacheco Pass and the area around San Luis Reservoir had been largely abandoned by the local Native Americans by the early 19th century (Latta 1949; Olsen and Payen 1968). Much of this was likely due to the increased Spanish, Mexican, and, ultimately, American use of the pass as an important transportation route. Bands of cattle and horse thieves apparently made frequent use of the pass, and military expeditions also made incursions into the area in search of runaway coastal mission Indians or in search of new workers. Collectively, these pressures proved too much for the local Native American inhabitants, who soon fled the area, their flight precipitated by Euro-American settlement beginning in the 1840s and by a short-lived gold rush in the Pacheco Pass area in 1851 (Hill et al. 1996; Shumate 1977:22).

**Ethnographic Setting** Ethnographic and archaeological evidence indicates that, at least in later prehistoric and early historic times, Native American populations residing in the San Luis area belonged to the Yokut tribe and, more specifically, the Northern Valley Yokuts (Wallace 1978:462–470; Kroeber 1925; Olsen and Payen 1968:65–66). Although the Yokuts appear to have been the predominant group in the region, evidence suggests strong coastal influences by Costanoan (Ohlone) groups, and Olsen and Payen (1969) suggest that a Western Yokut division from the Pacheco Pass area had just as much in common with the Costanoan as it did with the Yokuts—a situation recognized by Kroeber (1925) as well. Contact between coastal and interior tribal groups would have been facilitated by the presence of routes through Pacheco Pass, providing for an easy exchange of goods and cultural traits in prehistoric and early historic times. Archaeological materials uncovered by Treganza (1960), Riddell and Olsen (1964), Olsen and Payen (1969), Pritchard (1966, 1970, 1983), and Riddell (1970), although analyzed and interpreted according to the Valley cultural and temporal scheme, may have much in common with manifestations from the west side of the Diablo Range. If this is indeed the case, the late prehistoric and early historic inhabitants of the San Luis area may have been affiliated just as much with the Ohlone as they were with the Yokuts.

Based on current interpretations of archaeological and ethnographic evidence, the conventional interpretation of the cultural associations of the Native Americans from the San Luis area is that the Yokuts were the predominant tribe. The Yokuts' Penutian language was spoken by some 40 groups using distinctive but closely related dialects. These groups inhabited three main geographic locales in central California: the Southern Valley (Tulare Lake), the Northern Valley (San Joaquin Valley), and the foothills (Sierra Nevada) (Kroeber 1925; Wallace 1978).

The San Luis Reservoir area, historically a broad, well-watered grassy plain, offered a diverse range of natural resources within a transition zone between the oak savanna and grassland environments. These varied ecosystems provided a wide array of floral species, such as acorns, oats, and other seeds that served as staple foods, and various grasses utilized for basketry. Faunal resources found in the area include numerous fish species, shellfish, turtles, waterfowl, deer, tule elk, pronghorn antelopes, lagomorphs, rodents, reptiles, land birds, and insect species that would have provided sustenance and sources of various materials such as hide, bone, feathers, and ligaments.

The influence of Ohlone and Ohlone-descendent groups can be seen in the San Luis area and throughout the Central Valley in the form of exotic materials not found in the region. Abalone shell is found at many archaeological sites, and accounts indicate that salt, mussels, and dried abalone were frequently traded with interior groups (Davis 1961:23). Linguistic evidence of extensive contact between the coastal Ohlone and valley tribes can be found as well. For example, some Valley Miwok terms are the same as those found in Ohlone groups and suggest an exchange network involving not only material goods but more diverse cultural traits as well. Trade and contact between the coastal and interior groups was not simply a one-way exchange. For example, Davis (1961:23) notes that piñon nuts found their way to coastal tribes from inland sources, and clam shell beads were traded from the coastal areas to regions far inland.

Yokut groups lived in small seasonal camps geared toward hunting or the gathering and processing of acorns and a variety of grasses, or in larger settlements established near perennial water sources, including the San Joaquin River, and smaller drainages and springs. Dwellings in the larger villages consisted of circular tule-covered structures and more elaborate semi-subterranean pit houses. Ceremonial sweat houses and assembly chambers were often constructed within the more substantial villages. These larger settlements might include approximately 200 inhabitants constituting a small subtribe of the Yokuts. A headman, while not necessarily possessing absolute powers, served as an advisor to these self-contained communities (Cook 1960:249–250, Wallace 1978:466). In general, open conflict or warfare appears to have been rare, and even when confronted with often-hostile Euro-American contact, the Yokuts preferred to flee to remote canyons or tule marshes (Cook 1960:249–250, 260, 263; Gayton 1936:83; Wallace 1978:467)

Yokut material culture and technological systems were as varied as the environments in which the Yokuts resided and reflected the diversity of the

available resources. Mortars and metates, both portable and bedrock, were used for the processing of acorns and other gathered seeds and nuts. Baskets were produced in a wide variety of sizes and shapes, each suited to a particular task and adorned with patterns characteristic of Yokut artistic expressions. Exotic materials such as marine shell, ocean fish, and shellfish were obtained from Ohlone contact, and obsidian was acquired from distant sources.

Although little is known regarding traditional pre-European spiritual life, early-historic-period religious and spiritual practices among the Yokut are somewhat better documented and are closely related to those of the Costanoan groups (Kroeber 1907; Levy 1978). Based on some early ethnographic research (Kroeber 1925), it appears that the Yokuts living in the San Luis Reservoir area participated in the Kuksu ritual system during the historic period. Other spiritual components of Yokut culture, such as shamanism, although not specifically described for inhabitants of the San Luis area, were almost certainly important elements contributing to the physical and spiritual stability and well-being of the people in prehistoric and early historic times.

**Historic Setting** The history of the Plan Area is inextricably linked with the history of Pacheco Pass itself and its prominence as an important transportation route. Although the pass was clearly a well-known and heavily utilized corridor in prehistoric times, historic-era use first occurred shortly after the Spanish coastal missions began to be established. Starting in the late 18th century, the pass and the rolling hills of Los Banos Creek watershed immediately to the southeast served as a direct route from Mission San Juan Bautista to the Central Valley. The watershed area has since become known as the “Path of the Padres,” with the established trails and the perennial water of the creek (the Spanish *los baños* roughly translates to “the baths”) being a major attraction. The path was most notably employed by the Franciscan mission representatives and friars from San Juan Bautista, and it was likely followed by others associated with the Spanish colonial and later Mexican governments as well.

Spurred by mining in the Sierra foothills and expanding agriculture in the Central Valley during the early American period, at least five formal roads were built through the pass, including the original pass toll road constructed by Andrew Firebaugh in the late 1850s. Merced County built a new road by Firebaugh’s grade in the 1870s, and the general route of Firebaugh’s highway was also followed by the state in the early 1900s, again in the 1930s, and finally with construction of SR 152 in the 1960s. Although SR 152 is the predominant route through the pass today, traces of the earlier roads can still be seen and, in some cases, are still utilized for local traffic.

The first documented European expedition into the pass occurred when Gabriel Moraga and Father Pedro Munoz traveled through the area in 1806. This encampment likely occurred along Cottonwood Creek at the San Luis waterhole on the night of June 21, the feast day of San Luis de Gonzaga. As was tradition with Spanish explorers of the day, Moraga and Munoz named the area in the saint’s honor (Hill et al. 1996). Moraga and Munoz’s expedition essentially

cleared the way for future development of the pass as a transportation route, and throughout the early decades of the 19th century, the pass served as an escape route for Native Americans who were attempting to leave the coastal missions or, conversely, who went through the pass to attack coastal missions. Many of these Indians, trained as vaqueros, had previously been through the region when driving herds into the Central Valley, making the area an ideal refuge. In fact, Native American familiarity with the pass clearly predated historic periods, and the pass likely served as an important transportation route between the Central Valley and the coast (Cook 1960; Kyle 2002; Shumate 1977; Pilling 1955).

One of the most important historical developments to occur in relation to the San Luis Reservoir area occurred in September 1843 when Jose Mejia and Juan Perez Pacheco petitioned the governor for rights to over 48,000 acres in and around the pass that had previously been granted to Francisco Jose Rivera in 1841. The establishment of their ranch and their occupation and development of the property was presented as an "aid in the defense against hostile Indians." The Rancho San Luis Gonzaga was granted in November of that year and bordered the ranch (Rancho Ausaymas y San Felipe) that had been owned by Pacheco's father since 1833. Through additional grants and the purchase of additional lands in the region, the Pacheco family holdings exceeded 150,000 acres by the middle of the 19th century (CSP 1973; Hill et al., 1996).

To support the establishment of the new Rancho San Luis Gonzaga and run the agricultural and herding operations, the Pachecos saw to the construction of the area's first adobe building around 1844, near the spot where Moraga and Munoz had camped 40 years earlier. In later years, it served as a stage stop, a café, a gambling hall, and eventually a gas station and roadside stop for travelers heading through the pass (Hill et al. 1996). The original location of the adobe, and of the entire Rancho complex, was destroyed during construction of San Luis Dam and associated facilities. Paula Fatjo, a fifth-generation Pacheco descendent, attempted to have the adobe building moved to her new ranch facilities (now contained within Pacheco State Park) prior to the construction of the reservoir. During transit, large portions of the structure collapsed as a result of unseen termite damage, and all that remains today are the two end walls currently on display at the Pacheco State Park headquarters (Hill et al. 1996; Crosby et al., 2003).

During the gold rush of 1849 and following the discovery of gold in the Kern River in 1853, the San Luis Reservoir area saw a dramatic increase in the number of travelers. Another gold rush, albeit a brief and unsuccessful one, occurred in the Pacheco Pass area in 1851. With the consistent flow of would-be miners and travelers, the area became a favorite haunt for bandits and outlaws, including Joaquin Murietta and his gang, who reportedly frequented the San Luis *aguajes* (water hole) (Shumate 1977). In light of the rugged and often lawless nature of his new rancho, Francisco Pacheco moved his family away to the safety of Monterey in 1851. Shortly following this period, Pacheco leased the rancho to his son-in-law, Mariano Malarin, to operate a herding operation to supply meat to San Francisco and miners in Sierra Nevada foothill towns (Hill et al. 1996, Shumate

1977). Following the Pachecos' departure, the rancho headquarters and the adobe may have been abandoned, becoming an ideal hideout for Murietta. It was at this location in 1853 that Captain Harry Love, a deputy sheriff of Los Angeles County, and a contingent of State Rangers cornered Murietta and his gang, who were apparently on their way to the Mother Lode region to stage a large horse-theft raid. Although the raid itself was thwarted, Murietta and all of his men still managed to escape, despite eyewitness accounts that Love had most of them cornered in the Pacheco ranch adobe (Latta 1980:363, 368).

Although several preliminary moves to establish a railroad through Pacheco Pass were made during the 19th century (Adler and Wheelock 1965; Eldredge 1915), transportation through the area remained centered on trails and roadways. These routes became more formalized in 1857, when Andrew Firebaugh constructed a tavern and completed a toll road that went over the pass. A year later, the Butterfield Overland Mail stage started regular runs along this roadway but these only lasted until 1861 (Shumate 1977:4). The Pachecos' San Luis Ranch at the eastern end of the pass became a regular stop for the stage, and an inn and stables were soon constructed to service travelers. In the 1860s, Lafayette Bell purchased a tavern and stage stop at the western end of the pass, and Bell's Station was established; at the same time, there was another stage stop at the top of the pass, operated by William Hollenbeck (Shumate 1977:3). The original buildings are no longer extant and Bell's Station is now closed, but it once served as a popular stopping point at the base of Pacheco Pass (CSP 1973; Hill et al. 1996; Wulzen 2002).

Since the pass was such an important transportation route between the coast and the Central Valley, the stage stops and roadways attracted the attention not only of private entrepreneurs such as Bell, but of government concerns as well. Merced County eventually went on to purchase the toll road; and present-day Whiskey Flat Road, constructed by the County in 1878, follows portions of the original toll road alignment. In later years, the State of California developed a new highway through the pass, finally leading to further realignments and construction of present day SR 152 (Shumate 1977:3; Wulzen 2002).

Ranching continued to be the predominant economic pursuit within and in the vicinity of the Plan Area throughout the 20th century. Paula Fatjo, owner of San Luis Gonzaga, moved into the new ranch headquarters, located just to the north of the original Rancho adobe, in 1948. Over the coming years, Ms. Fatjo sold some parcels of the ranch. By the early 1960s, construction began on San Luis Reservoir, and large portions of the Fatjo ranch and properties belonging to other local residents were to be inundated. As planned, San Luis Reservoir construction was also going to destroy the 1844 ranch headquarters site and the adobe building. Ms. Fatjo reestablished her operations 12 miles to the east near the summit of Pacheco Pass (Hill et al. 1996) and moved a number of structures from the old ranch complex to this new location, including an addition she had attached to the adobe sometime after 1948. With no surviving family members, Paula Fatjo bequeathed the entire remaining acres of Rancho San Luis Gonzaga to the State in 1992. Ultimately, this gift led to the establishment of Pacheco State Park, situated

immediately adjacent and to the west of San Luis Reservoir (CSP 1973; Hill et al. 1996; Wulzen 2002).

### 2.7.3 Documented Cultural Resources

Within the Plan Area, a total of 51 prehistoric and historic cultural resources have been documented (Table 2-19). The resources include 40 in or around the immediate vicinity of San Luis Reservoir, 10 at Los Banos Creek Reservoir, and one at O'Neill Forebay. At the time most of these sites were recorded, there were no federal or state regulations in place designed to protect cultural resources. Despite the absence of laws at the time requiring that such studies be conducted prior to the implementation of projects such as San Luis Reservoir, archaeologists recognized the importance of the area and studied a number of sites and areas within the present-day Plan Area.

**Table 2-19**
**Cultural Resources Documented in Plan Area**

| Site Number (CA-Mer-) | Date Recorded | Site Type | Comments | USGS Quad. |
|---|---|---|---|---|
| 14 | 5-15-62 | Prehistoric – village site | Under San Luis Dam: destroyed | San Luis Dam |
| 15 | 9-5-63 | Prehistoric – midden | Extant and typically above high-water line | Pacheco Pass |
| 16 | 9-5-63 | Prehistoric – habitation | Destroyed | San Luis Dam |
| 17 | 10-10-63 | Prehistoric – housepits, midden | Destroyed | San Luis Dam |
| 18 | 5-27-64 | Prehistoric – midden | Extant and typically above high-water line | Pacheco Pass |
| 19 | 5-28-64 | Prehistoric – midden | Inundated at least part of the year | Pacheco Pass |
| 20 | 5-28-64 | Prehistoric – midden | Inundated at least part of the year | Pacheco Pass |
| 21 | 5-28-64 | Prehistoric – midden | Inundated at least part of the year | Pacheco Pass |
| 22 | 5-28-64 | Prehistoric – midden | Inundated at least part of the year | Pacheco Pass |
| 23 | 5-28-64 | Prehistoric – midden | Inundated at least part of the year | Pacheco Pass |
| 24 | 5-28-64 | Prehistoric – BRMS, midden, housepits | Inundated at least part of the year | Pacheco Pass |
| 26 | 4-15-64 | Prehistoric – midden | Inundated at least part of the year | Pacheco Pass |

**Table 2-19**
**Cultural Resources Documented in Plan Area**

| Site Number (CA-Mer-) | Date Recorded | Site Type | Comments | USGS Quad. |
|---|---|---|---|---|
| 27 | 6-25-65 | Prehistoric – midden | Excavated by Riddell, 1965 (outside Plan Area under tunnel spoils) | Pacheco Pass |
| 28 | 6-25-65 | Prehistoric – midden | Inundated at least part of the year | Pacheco Pass |
| 29 | 6-25-65 | Prehistoric – midden | Inundated at least part of the year | San Luis Dam |
| 30 | 6-25-65 | Prehistoric – lithic artifacts | Inundated at least part of the year | San Luis Dam |
| 31 | 6-25-65 | Prehistoric – midden | Inundated at least part of the year | San Luis Dam |
| 32 | 6-25-65 | Prehistoric and historic | Extant and typically above high-water line | San Luis Dam |
| 41 | 6-2-66 | Prehistoric – midden | Inundated at least part of the year | Pacheco Pass |
| 42 | 6-2-66 | Prehistoric – midden | Inundated at least part of the year | Pacheco Pass |
| 56 | 10-11-63 | Prehistoric – midden | Under/adjacent to San Luis Dam – destroyed | San Luis Dam |
| 82 | 6-2-66 | Prehistoric – midden | Inundated at least part of the year | Pacheco Pass |
| 83 | 6-2-66 | Prehistoric – midden | Extant and typically above high-water line | Pacheco Pass |
| 94 | 6-13-69 | Prehistoric – midden | Excavated by Olsen & Payen, 1969; inundated at least part of the year | Pacheco Pass |
| 96 | 9-20-68 | Prehistoric – midden | Inundated at least part of the year | Pacheco Pass |
| 99 | 10-11-63 | Prehistoric – midden | Destroyed – located near San Luis Dam | San Luis Dam |
| 130 | 6-13-69 | Prehistoric – berms, midden | Excavated by Olsen & Payen, 1968 | Pacheco Pass |
| 131 | 6-13-69 | Prehistoric – midden, housepit | Inundated at least part of the year | Pacheco Pass |
| 132 | 6-13-69 | Prehistoric – midden | Inundated at least part of the year | Pacheco Pass |
| 133 | 6-13-69 | Prehistoric – midden | Inundated at least part of the year | Pacheco Pass |

**Table 2-19**
**Cultural Resources Documented in Plan Area**

| Site Number (CA-Mer-) | Date Recorded | Site Type | Comments | USGS Quad. |
|---|---|---|---|---|
| 134 | 10-11-63 | Prehistoric – midden | Partially destroyed by pond | Pacheco Pass |
| 135 | 10-11-63 | Prehistoric – midden | Inundated at least part of the year | Pacheco Pass |
| 136 | 10-11-63 | Prehistoric – midden | Extant and typically above high-water line | Pacheco Pass |
| 137 | 10-11-63 | Prehistoric – midden, housepit | Inundated at least part of the year | Pacheco Pass |
| 138 | 10-11-63 | Prehistoric – midden | Extant and typically above high-water line | Pacheco Pass |
| 139 | - | Prehistoric – midden | Extant and typically above high-water line | Mariposa Peak |
| 261 | 1-21-82 | Historic – rock footings, refuse | Inundated at least part of the year | San Luis Dam |
| 3 | - | Prehistoric – village site with house pits | Inundated at least part of the year – Menjoulet site; Pritchard 1970 | Ortigalita Peak NW |
| 25 | 9-27-64 | Prehistoric – midden | Destroyed by Los Banos Dam | Ortigalita Peak NW |
| 33 | 4-30-90 | Prehistoric – BRM | Extant and typically above high-water line | Ortigalita Peak NW |
| 34 | 10-10-63 | Prehistoric – BRM | Inundated at least part of the year | Ortigalita Peak NW |
| 35 | 10-10-63 | Prehistoric – midden | Inundated at least part of the year | Ortigalita Peak NW |
| 36 | 10-10-63 | Prehistoric – house pit | Inundated at least part of the year | Ortigalita Peak NW |
| 37 | 10-10-63 | Prehistoric – housepit | Inundated at least part of the year | Ortigalita Peak NW |
| 68 | 7-9-93 | Prehistoric – midden, housepits | Excavated by Riddell, extant | Ortigalita Peak NW |
| 97 | 10-11-63 | Prehistoric – village site | Inundated at least part of the year | Ortigalita Peak NW |
| 98 | 10-11-63 | Prehistoric – Village site | Inundated at least part of the year | Ortigalita Peak NW |
| 277 | 4-30-86 | prehistoric – midden, lithic scatter | Extant and typically above high-water line | Ortigalita Peak NW |

**Table 2-19**
**Cultural Resources Documented in Plan Area**

| Site Number (CA-Mer-) | Date Recorded | Site Type | Comments | USGS Quad. |
|---|---|---|---|---|
| 38 | 1-21-82 | Prehistoric – BRM, midden, housepits | "Indian Point" site extant and above high-water line | San Luis Creek |
| 451H | 3-26-08 | Historic (Domengine Sheep Ranch) – Possible house pad, improved spring, two water tanks and three rock alignments. | Site condition is described as "poor" | San Luis Dam |
| P-24-001856 (no trinomial assigned) | 9-10-04; revised 9-12-08 | Ranch and remaining undeveloped historic ranch landscape. | Site condition is described as retaining sufficient integrity to convey a sense of time and place. | Pacheco Pass & Pacheco Peak |

The primary focus of the 1960s inventories and excavations was on sites related to early Native American habitation of the San Luis area. Sites such as CA-Mer-3 and 94 proved to be highly significant due to their extensive cultural deposits. Their intact stratigraphy, presence of diagnostic cultural materials, human remains, and datable organics on these sites contributed to the definition of several important phases of early cultural manifestations in the region.

A number of sites have never been formally recorded or investigated, including the original site of Rancho San Luis Gonzaga. Although much of this site, related to the Pacheco family's 1843 grant from the Mexican government, was destroyed by construction of San Luis Dam, considerable traces of this early operation may still exist in the area.

The Rancho San Luis Gonzaga is a Historic District/Cultural Landscape potentially eligible for listing on the CRHR/NRHP. It is located primarily in Pacheco State Park, with small portions extending into the Plan Area from the eastern and northern boundaries of Pacheco State Park. Rancho San Luis Gonzaga is one of the oldest, largest and few remaining historic stock ranch landscapes in central California, and one of the largest Mexican-U.S. land grants passed down in 150 years. Its quiet hillsides, framed by rock outcrops and ridges on the west and south, are studded with oaks, carpeted with native and naturalized Mediterranean forage plants, and lined with trails. The ranch has few visible modern intrusions, and vistas to the east, south, and west retain their historic appearance. The 1843 adobe ruins, 1962 wood frame residence, horse barn and corral, late 1800s windmills, Spanish place names, cactus gardens, mosaic tile panels, miles of wooden post and barbed wire fencing and other artifacts convey

the character and feeling of the original historic landscape and evoke California's ranch history and Hispanic heritage. Rancho San Luis Gonzaga is representative of protohistoric California, Hispanic California, the State of California's formative years, and the Fatjo family's long stewardship. The Ranch retains sufficient historical integrity of location, setting, design, materials, and workmanship to convey a sense of time and place (CSP 2008a; Bissonnette 2010).

Other existing and potential historic resources within the Plan Area have also not been formally recorded. Portions of Firebaugh's 1857 toll road can be seen in several areas within the Plan Area but have not yet been documented. Other historic sites, many related to the ranching history of the area, may be found throughout the Plan Area and include quarries, road grades, ranch fences, ponds, windmills, and water tanks.

Despite the number of studies conducted within and in the vicinity of the Plan Area, and the number of cultural resources recorded, additional prehistoric and historic sites likely remain to be discovered and documented. The topography, climate, diverse natural habitats, and accessibility of the area to valley and coastal ecosystems made the San Luis Reservoir area a region uniquely suited to intensive prehistoric and historic occupation and activities. As such, and due to the fact that the Plan Area has never been subjected to an inclusive and systematic cultural resources survey, the known sites within San Luis Reservoir cannot necessarily be considered a representative sample of site locations, types, or cultural or temporal affiliations.

Apart from the recorded prehistoric and historic sites and features situated within the Plan Area, collections of materials associated with the Plan Area and vicinity are presently being curated by CSP, while early collections from the sites are curated at Reclamation's New Melones facility. These include artifacts from some of the resource survey and excavation projects mentioned above and items without origin found within and in the vicinity of the Plan Area.

## 2.8 Aesthetic Resources

The Plan Area offers open, scenic vistas of undeveloped land and open water. The scenic qualities are represented by the surrounding undeveloped landscape, open grassland, expansive vistas of the rolling terrain and the adjacent Diablo Range. Most shoreline areas allow for uninterrupted views of the open water from the three reservoirs. In some cases, such as at Los Banos Creek Reservoir, the views from the north and south plateaus provide a vista opportunity of the water and adjacent landscape.

The layout and configuration of the built structures in the Plan Area are clustered in succinct areas, reducing the sense of sprawl and visual clutter. Portions of the Plan Area, especially near the dams and the operations facilities, contain many built structures with an engineered character. This contributes to the understanding of those areas as water storage and distribution facilities.

Recreation area signage portrays an image and identity for the Plan Area and contributes to the aesthetic experience. The Plan Area viewshed also includes wind turbines along the ridgelines of neighboring Pacheco State Park to the west.

The Merced County Year 2000 General Plan (Chapter VI: Open Space/ Conservation) and the Caltrans Officially Designated Scenic Highways list designates SR 152 west of I-5 as a state scenic highway because of its scenic vistas.

According to the Santa Clara County General Plan, 1995–2010, SR 152 is considered one of the most dramatically scenic gateways into Santa Clara County. Policy R-RC(i) 36 of the Santa Clara County General Plan is intended to protect the scenic value of several major county thoroughfares and entranceways through state scenic highway designation, including Pacheco Pass (SR 152 east of Gilroy).

## 2.9 Recreational Resources

### 2.9.1 Recreational Activities

The Plan Area is one of the most popular recreation areas associated with the CVP and is noted for boating, windsurfing, camping, picnicking, and fishing. Boating and other water-based recreation is allowed on all three water bodies in accordance with speed limits and access restrictions. Land-based recreation in the Plan Area is focused into five waterside use areas: Basalt, Dinosaur Point, San Luis Creek, Medeiros, and Los Banos Creek (Map 7). A sixth use area is the designated Off Highway Vehicle (OHV) area, which is south of, and separated from, Medeiros Use Area by Gonzaga Road. Additionally, San Luis and O'Neill Forebay wildlife areas offer hunting and hiking opportunities.

Fishing takes place in all three reservoirs. The DFG periodically stocks Los Banos Creek Reservoir with trout. CSP is not involved with the stocking of trout, and there is no known schedule for how often this occurs. Los Banos Creek Reservoir is known primarily for its fishing, although boating (in accordance with the 5 miles per hour [mph] maximum speed limit) and swimming are also popular. Bass fishing derbies are held at all three reservoirs. At O'Neill Forebay, crappie and bluegill are also caught. All fishing derbies require special event permits from both DFG and CSP. Table 2-20 details the primary activities in each of the use areas.

**Table 2-20**
**Plan Area Primary Activities**

| Use Area | Primary Activities |
|---|---|
| Basalt Use Area | Fishing, camping, hiking, boating, day use |
| Dinosaur Point Use Area | Fishing, boating, day use |
| San Luis Creek Use Area | Fishing, windsurfing, swimming, boating, camping, day use, group activities |
| Medeiros Use Area | Fishing, windsurfing, camping, day use |

**Table 2-20**
**Plan Area Primary Activities**

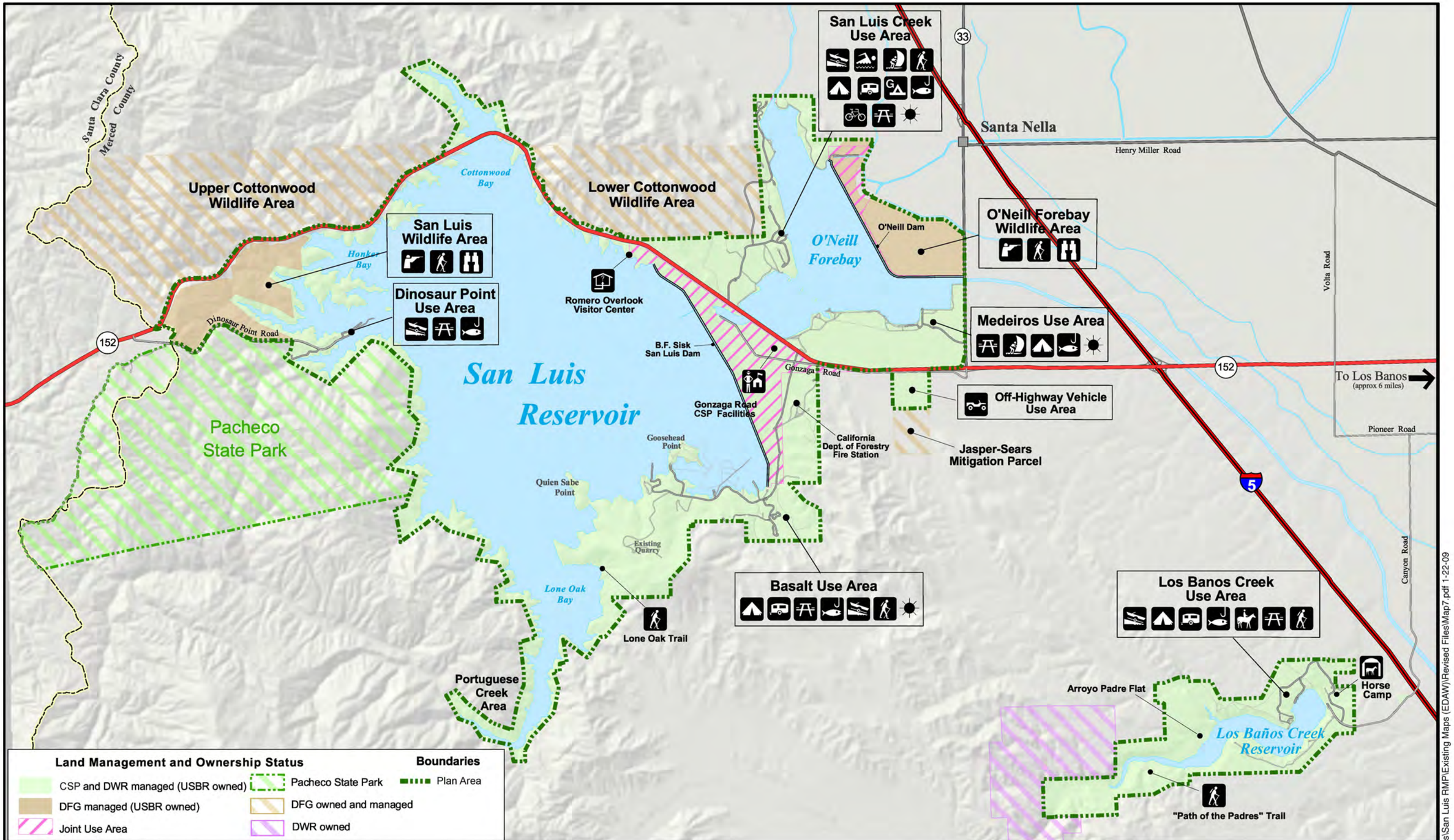
| Use Area | Primary Activities |
|---|---|
| OHV Use Area | OHV use |
| Los Banos Creek Use Area | Fishing, boating, camping, hiking, horseback riding |
| O'Neill Forebay Wildlife Area | Hunting, hiking, nature study |
| San Luis Wildlife Area | Hunting, hiking, nature study |

CSP has introduced a three-year pilot program designed to prevent the introduction or spread of invasive quagga and zebra mussels into the Plan Area. These invasive mussels are responsible for devastating damage to the California water system. Once introduced, they can quickly take over a waterway, destroy natural plankton and native fish habitat, and ultimately end recreational access to a waterway. San Justo Reservoir, located approximately 20 miles southwest of the Plan Area, has been closed since 2008 due to a zebra mussel infestation (San Benito 2009).

Beginning October 1, 2011, all vessels must be inspected for quagga and zebra mussels prior to entering San Luis Reservoir, O'Neill Forebay, and Los Banos Creek Reservoir from any of the boat launch facilities. Boats, personal watercraft, kayaks, canoes, sailboards, inflatables, and float tubes all must undergo this mandatory inspection to ensure they are clean of any aquatic vegetation, or other aquatic organisms. The vessels must have all storage areas, ski lockers, engine areas, ballast tanks, and live wells completely drained of water. No moisture of any kind can be in or on a vessel including on equipment, lifejackets, towels, ropes, or wetsuits. The inspection takes about seven to ten minutes.

A boat that passes the inspection will receive an inspection band to attach between the boat and trailer, which, if unbroken, will allow exemption from inspection at the next visit to San Luis Reservoir, O'Neill Forebay, or Los Banos Creek Reservoir. If a vessel fails the inspection, it will be quarantined and will not be permitted to launch anywhere in the Plan Area for seven calendar days. After seven days, the vessel must meet all the inspection criteria before it will be allowed to launch in the Plan Area. Tampering with quarantine seals or attempting to launch a vessel within the seven day quarantine period is a violation of California law and will result in a citation.

This pilot program will remain in place for three years until October 2014, at which time it may continue if funding is available. If no funding is available after 2014, a voluntary watercraft operator self-inspection program will be implemented to meet the requirements of California Fish and Game Code Section 2302. This self-inspection program is discussed further in Sections 4.4.1 and 4.4.2.




Source: USGS DRG

1 0.5 0 1 2 Miles

Scale 1 : 79,200
1" = 1.25 miles

N

**Existing Recreation Resources and Uses**

**Facilities**
- Ranger Station
- Visitor Center
- Wind Warning Light

**Camping**
- Tenting
- Recreational Vehicle
- Group Site
- Horse Camping

**Recreation Uses and Activities**
- Boat Launch
- Windsurfing
- Swimming
- Fishing
- Hunting
- Equestrian
- Bicycling
- Off-Highway Vehicle
- Wildlife Viewing
- Hiking
- Day Use

U.S. DEPARTMENT OF THE INTERIOR BUREAU OF RECLAMATION

CALIFORNIA STATE PARKS SINCE 1864

**San Luis Reservoir State Recreation Area**

**MAP 7**
**Existing Recreation**

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### 2.9.2 Use Area Recreation Facilities

The majority of visitation to the Plan Area occurs between Easter and Labor Day each year. The frequency of visitation is generally highest on Fridays, Saturdays, Sundays, and holidays. On weekends and holidays (particularly during the high use season), public use areas often reach their capacities.

Each of the main use areas provides a range of recreation facilities, as detailed below. In addition, the Romero Visitor's Center offers educational information, literature, and visitor programs, along with viewing stations equipped with telescopes. Map 7 illustrates existing recreation in the Plan Area. Day use facilities and boating are permitted from sunrise to sunset. Camping check-in is at 2 PM and check-out is at noon.

#### *2.9.2.1 Basalt Use Area*

The Basalt Use Area is located at the southeastern corner of San Luis Reservoir. The area includes 79 tent/RV campsites, including 8 that are Americans with Disabilities Act (ADA) compliant, with piped water, fire grills, picnic tables, and storage lockers. A sewer dump station, flush toilets, showers, and a fish cleaning station help make Basalt a popular use area. The Basalt Use Area also provides trail access, a campfire center, and a four-lane boat launch with an 80-foot boarding float. In 2008–2011, numerous upgrades were constructed at the Basalt Use Area campgrounds and day use picnic sites to make the area more ADA compliant, including the completion of two ADA restrooms with toilets and showers.

A 1.5-mile loop trail known as the Basalt Campground Trail begins at the campground entrance and climbs to a hilltop area with an interpretive exhibit, map, and views of San Luis Reservoir, Basalt Hill, and the San Joaquin Valley. West of Basalt Use Area, the Lone Oak Bay Trail is a 6-mile out-and-back trail to the south side of San Luis Reservoir. The trailhead is just before the end of the park road at the boat launch and parking area, 2 miles west of Basalt Campground.

#### *2.9.2.2 Dinosaur Point Use Area*

Dinosaur Point, located on the western edge of San Luis Reservoir where Dinosaur Point Road ends, offers lake access, including a four-lane boat ramp with an 80-foot boarding float and parking for 123 vehicles, with additional parking on the boat launch ramp. Dinosaur Point also provides five shade ramadas and chemical toilets. The length and gentle but steady slope of Dinosaur Point Road provide suitable terrain for street luge, which currently only takes place as a special event and requires permission from CSP Four Rivers Sector. Other activities provided in this area include fishing and bicycling.

#### *2.9.2.3 San Luis Creek Use Area*

The San Luis Creek Use Area is west of O'Neill Forebay and is the most popular use area. The area provides two large beaches, a life guard stand, a large irrigated

lawn with 148 shade ramadas with barbecues, a three-lane boat launch ramp with two 80-foot boarding floats, a fish-cleaning station, a picnic area, trail access including a 1.5-mile ADA-compliant trail to Check 12, and 171 parking spaces for vehicles with boat trailers and 390 spaces for single vehicles. In addition, camping facilities include 53 tent and RV campsites (including six ADA accessible) with electric and water hookups, fire pits, and picnic tables. San Luis Creek has five group picnic facilities and two group campsites. The first group campsite, which can accommodate 60 campers, provides a large cooking/gathering shelter with lights and electricity, eight shade ramadas with fire rings and picnic tables, and restrooms with showers. The second, which can accommodate 30 campers, provides a smaller cooking shelter with lights and electricity, five shade ramadas with fire rings and picnic tables, and restrooms with showers. The group campsites also share an irrigated lawn area and a parking area with approximately 36 single-vehicle spaces. In 2008, numerous upgrades were constructed at the San Luis Creek campgrounds and day use picnic sites to make the area ADA compliant.

#### *2.9.2.4 Medeiros Use Area*

The Medeiros Use Area is located on the southeastern shore of O'Neill Forebay. The area provides 50 campsites with shade ramadas, picnic tables, and barbecues, approximately 300 informal parking spaces, as well as approximately 350 primitive campsites for tents and RVs. The day use and camping areas have potable water from four portable water tanks (water is trucked in), and chemical toilets. The boat launch at the Medeiros Use Area was closed in 2001 for security reasons. Although security is no longer a concern, the boat launch remains closed because shallow water in the area prevents year-round launching.

#### *2.9.2.5 OHV Use Area*

The OHV Use Area is located south of Gonzaga Road and approximately 2 miles east of the CSP administrative offices. The OHV Use Area is an open, flat, partially vegetated parcel that is developed with an OHV track consisting of unpaved trails. The area also has parking and chemical toilets. In accordance with emission standards regulations for OHVs, noncompliant vehicles (Red Sticker OHVs) are seasonally restricted (see Section 2.5.1.2).

#### *2.9.2.6 Los Banos Creek Use Area*

The Los Banos Creek Use Area surrounds Los Banos Creek Reservoir. The main use area at Los Banos Creek Reservoir is located at the northeast end of the reservoir and includes 14 campsites with shade ramadas, barbecues, and picnic tables. The Los Banos Creek Use Area also includes a two-lane boat launch ramp with a 60-foot boarding float, an equestrian camp, and parking for approximately 40 vehicles with boat trailers, chemical toilets, hiking and equestrian trail access, and a swimming area. The "Path of the Padres" historic hiking trail is located at Los Banos Creek Reservoir, and guided tours of the trail as well as a boat tour are led by volunteer and CSP staff.

#### *2.9.2.7 Other Areas*

DFG staff based at the Los Banos Wildlife Area field office in Los Banos manages the two wildlife areas in the Plan Area. The San Luis Wildlife Area is located at the northwest edge of San Luis Reservoir, south of SR 152, and is accessed from a parking area off of Dinosaur Point Road. Some visitors to the wildlife area also park in pull-outs west of the parking area but within the Plan Area boundary. As such, access to the pull-outs is restricted to between sunrise and sunset.

The O'Neill Forebay Wildlife Area is at the eastern side of O'Neill Dam and is accessible from a parking area off of SR 33.

Both sites have a self-registration system at the entry points and permit nature study, hiking, and hunting. Hunting for waterfowl, pheasants, quail, doves, rabbits, and crows is allowed at O'Neill Forebay Wildlife Area; and hunting for all legal species, including deer, pig, dove, quail, turkey, and small game, subject to DFG regulations, is allowed at the San Luis Wildlife Area. Portions of the O'Neill Forebay Wildlife Area are cultivated to provide forage and habitat for various game species. Crops grown consist of safflower, wheat or vetch, and turkey mullen.

### 2.9.3 Plan Area Infrastructure

#### *2.9.3.1 Visitor's Center*

The Romero Visitor's Center, operated by the DWR, is located on the eastern side of San Luis Reservoir at the Romero Overlook. The visitor's center provides extensive information on the reservoirs and water projects through audio-visual and printed materials. Telescopes are also available for viewing the area.

#### *2.9.3.2 Entrance Stations*

There are four vehicular access points with an entrance station: the Basalt, Los Banos Creek, Medeiros, and San Luis Creek use areas. Entrance stations are located in the roadway, with windows on both sides to serve traffic entering and leaving the recreation area. All entrance stations provide climate-controlled work space for staff, some with multiple rooms. The Basalt and San Luis Creek Use entrance stations are equipped with restroom facilities. Entrance stations are staffed during the peak season when funding is available. Self-registration is used to collect fees at other times.

#### *2.9.3.3 Operations Facilities*

The SRA administrative offices are located on Gonzaga Road, south of SR 152. CSP facilities at this location include the administrative office building, the ranger office building, and a number of storage and maintenance buildings, including a multipurpose building, CSP's maintenance shop, an auto shop, and a large warehouse. In addition, a large fuel tank and propane tank are at this location. Finally, there is one trailer used to house visiting specialists and SRA seasonal workers.

The CSP operations area on Gonzaga Road formerly contained an underground fuel storage tank and a waste oil tank. After removal of the tanks, releases to soil and groundwater were detected. Remediation including groundwater monitoring and soil vapor extraction has been ongoing at the site and will continue independent of Plan implementation until the case file is closed by the oversight agencies, the Merced County Division of Environmental Health and RWQCB (SWRCB 2012).

Other CSP operations facilities include water treatment facilities, sewer lift stations, and wind warning lights located at the Basalt, San Luis Creek, and O'Neill Forebay areas. Water tanks are located at each of the use areas.

#### *2.9.3.4 Concessions*

Concessions within the Plan Area are limited. No buildings are used for concessions, however, an ice cream concession stand is in operation at San Luis Creek Use Area on a two-year trial basis. The concessionaire also sells water between Easter and September 30.

#### *2.9.3.5 Employee Housing*

Employee housing is located at Basalt and Los Banos Creek use areas and the SRA administrative offices. The Basalt Use Area has one mobile home pad. The Los Banos Creek Use Area has one CSP-owned mobile home trailer, which is usually occupied by the unit ranger. Some staff are currently housed at Pacheco State Park. The SRA administrative offices also provide one CSP-owned mobile home trailer; however, it has no full-time residents and typically is used to house visiting specialists and seasonal workers.

#### *2.9.3.6 Restrooms*

Restrooms are available at the Romero Visitor's Center and each use area, excluding the wildlife areas. The Basalt Use Area has three restrooms: two ADA-accessible restrooms with showers, and one non-ADA-accessible stand-alone bathroom. The Dinosaur Point Use Area has one vault toilet that is ADA accessible, and the Los Banos Creek Use Area provides eight to 16 chemical toilets and one vault toilet. The Medeiros Use Area provides four vault toilets, three of which are ADA accessible; and the San Luis Creek Use Area provides seven restrooms in the day use area, four vault toilets throughout the campground and day use areas, and one restroom with showers in the group camp. Chemical toilets are available at the OHV area. In addition, there are a number of chemical toilets located throughout high-use areas during the peak season.

### 2.9.4 Interpretive and Educational Resources

A visitor's center at the Romero Overlook, operated by the DWR, provides educational information on the CVP and SWP, the local reservoirs and dams, and statewide water projects through audio-visual and printed materials. The location of the center is high above San Luis Reservoir and provides spectacular views to the east, west, and south. Telescopes are available for viewing the area.

A campfire center that seats about 75 visitors is located in the Basalt Campground, and interpretive staff or rangers conduct Saturday evening programs during the summer months when budget and staffing permit. The group campsite facilities at San Luis Creek and O'Neill Forebay are used occasionally for more informal presentations to scouts and other groups that request a ranger program. School field trips to the Plan Area primarily from April through June have used the picnic facilities, swim beach, and expansive turf areas at San Luis Creek, although no formal program is offered. A variety of special events, including Kids' Fishing Day (a joint DWR/CSP program) and the California Police Activities League (CalPAL) Northern California Camporee, also make use of the group and family picnic facilities at the north beach. Freestanding outdoor exhibit shelters house interpretive displays in six locations throughout the Plan Area, and informational bulletin boards are provided at most restrooms.

The Path of the Padres all-day guided boat ride and hike at Los Banos Creek Reservoir takes visitors on the route once used by the padres of Mission San Juan Bautista to travel to and from the Central Valley. Along the way, there are stops by Native Californian acorn grinding rocks, and the pools that gave the town of Los Banos its name. Cultural history and natural history are both featured in this popular all-day hike, which is booked solid 4 days each week during March and April. Thursday and Friday dates are held for school group hikes, and on Saturdays and Sundays the route is open to the public. The CSP's pontoon boat carries the hikers to the trailhead at the west end of Los Banos Creek Reservoir, which limits group size into the backcountry area.

Additionally, the following interpretive themes are used to tell the story of the area through campfire programs, boat tours, guided hikes, audio-visual programs, and outdoor exhibits:

- Wind and Water: Strong winds are common at the Plan Area, making the area a treacherous location for boaters and anglers. Signage and wind danger signals are provided to assist in informing visitors of this climatic factor.
- Big Fish: San Luis Reservoir holds the world record for land-locked striped bass.
- Life in the Rain Shadow: Despite an abundance of imported water, the Plan Area receives less than 10 inches of rainfall each year. Roadrunners, tarantulas, kangaroo rats, and kit foxes are among the desert-adapted species that inhabit the area.
- San Luis Reservoir: The reservoir stores water for state and federal water projects, supplying drinking water to Santa Clara County, the San Joaquin Valley, and Southern California, as well as providing irrigation to farmers as far south as the Imperial Valley.

## 2.9.5 Visitation Data and Trends

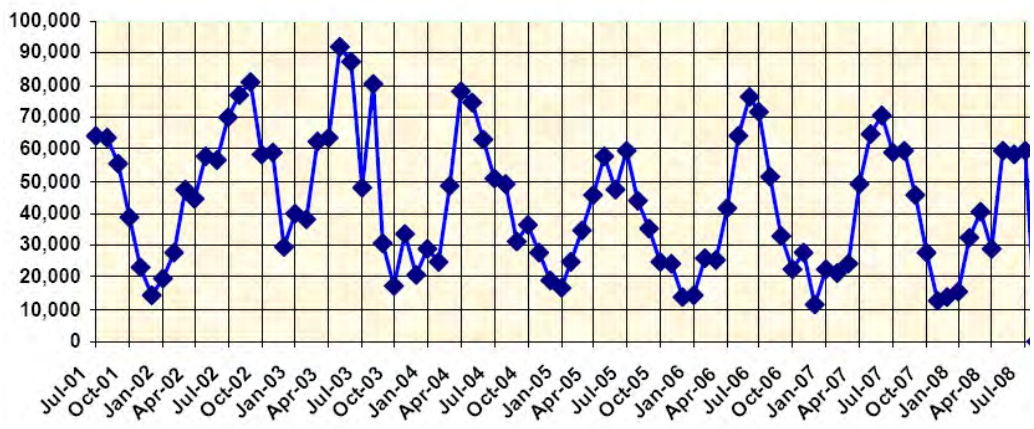
### *2.9.5.1 Visitor Attendance and Seasonal Fluctuations*

Total visitor attendance figures (Table 2-21) show large fluctuations between fiscal year (FY) 2005–2006 and FY 2010–2011. The average total attendance per fiscal year over that period was just over 327,000, consisting of approximately 268,700 visitors for paid day use, 36,350 visitors for free day use, and 27,000 visitors for camping. The average number of boat launches per fiscal year during that period was approximately 9,000. In all fiscal years, the greatest number of visitors come to the Plan Area for paid day use, followed by free day use and camping, in that order.

The highest fiscal year attendance in the past decade was in FY 2002–2003 (757,330; CSP 2012a). The lowest attendance was in FY 2009–2010 (144,222), likely due to the nationwide economic downturn.[5]

In general, the Plan Area has substantially higher numbers of visitors during spring and summer months and lower numbers during fall and winter (see Chart 2-1). Based on historic use patterns, San Luis Creek and Basalt are the most popular use areas, with up to 40,000 visitors a month at San Luis Creek Use Area during peak use. The Dinosaur Point, Los Banos Creek, and Medeiros use areas experience similar seasonal fluctuations, although visitor attendance is typically lower.

**Chart 2-1**
**San Luis Reservoir SRA Monthly Attendance, Fiscal Years 2001 - 2008**




**Note:** For FY 2008-2009 through 2010-2011, no monthly data are available.

Table 2-21 summarizes visitor attendance data for the Plan Area between FY 2005–2006 and 2010–2011.

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[5] Visitor data presented in this section is based on use fees paid at Plan Area entrance stations. The ability to staff entrance stations is based on the availability of CSP funding. During some periods, the entrance stations were staffed only on peak period weekends, and at other times visitors were requested to place fees in payment collection boxes. Some of the apparent visitation trends may be related to fluctuations in visitor payment rather than actual attendance.

**Table 2-21**
**San Luis Reservoir State Recreation Area Fiscal Year Attendance Data: Fiscal Years 2005 - 2010**

| Month | 2005 - 2006 | | | | | 2006 - 2007 | | | | | 2007 - 2008 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Paid Day Use | Free Day Use | Overnight Use | Boats Launched | Total Attendance | Paid Day Use | Free Day Use | Overnight Use | Boat Use | Total Attendance | Paid Day Use | Free Day Use | Overnight Use | Boat Use | Total Attendance |
| July | 48,002 | 5,589 | 5,413 | 644 | 59,274 | 60,270 | 6,594 | 4,773 | 1,089 | 71,637 | 50,154 | 6,307 | 2,748 | 915 | 59,209 |
| August | 36,770 | 4,203 | 2,734 | 720 | 43,707 | 43,179 | 5,103 | 3,419 | 867 | 51,701 | 50,388 | 5,763 | 3,438 | 774 | 59,589 |
| September | 28,776 | 3,495 | 2,968 | 714 | 35,239 | 24,463 | 3,007 | 5,201 | 1,059 | 32,671 | 38,441 | 4,898 | 2,103 | 644 | 45,442 |
| October | 50,585 | 2,652 | 1,661 | 975 | 24,898 | 16,868 | 2,828 | 2,654 | 1,097 | 22,350 | 23,385 | 2,737 | 1,503 | 871 | 27,625 |
| November | 19,737 | 2,392 | 2,127 | 1,191 | 24,256 | 22,051 | 2,887 | 2,701 | 1,296 | 27,639 | 7,995 | 2,607 | 2,277 | 985 | 12,879 |
| December | 11,427 | 1,645 | 761 | 582 | 13,833 | 8,561 | 1,960 | 1,109 | 658 | 11,630 | 11,550 | 1,197 | 1,197 | 707 | 13,944 |
| January | 12,178 | 1,456 | 1,020 | 618 | 14,654 | 14,895 | 6,431 | 1,296 | 672 | 22,622 | 13,116 | 1,509 | 1,116 | 671 | 15,741 |
| February | 21,601 | 2,597 | 1,707 | 872 | 25,905 | 17,433 | 2,469 | 1,419 | 904 | 21,321 | 28,434 | 3,045 | 1,125 | 609 | 32,604 |
| March | 20,883 | 2,522 | 1,966 | 671 | 25,371 | 20,640 | 2,146 | 1,647 | 1,157 | 24,433 | 32,214 | 4,959 | 3,283 | 809 | 40,456 |
| April | 34,590 | 4,018 | 2,842 | 774 | 41,450 | 41,068 | 4,943 | 3,218 | 776 | 49,229 | 24,453 | 3,313 | 1,262 | 887 | 29,028 |
| May | 53,573 | 6,040 | 4,732 | 974 | 64,345 | 54,364 | 5,995 | 4,605 | 939 | 64,964 | 50,171 | 5,669 | 3,914 | 914 | 59,754 |
| June | 64,270 | 7,225 | 4,953 | 778 | 76,222 | 59,532 | 6,593 | 4,185 | 786 | 70,309 | 50,867 | 5,253 | 2,327 | 835 | 58,447 |
| **Fiscal Year Totals** | **402,392** | **43,834** | **32,884** | **9,513** | **449,154** | **383,324** | **50,956** | **36,227** | **11,300** | **470,506** | **381,168** | **47,257** | **26,293** | **9,621** | **454,718** |

| Fiscal Year | Paid Day Use | Free Day Use | Overnight Use | Boats Launched | Total Attendance |
|---|---|---|---|---|---|
| 2008 - 2009 | 229,135 | 30,913 | 26,381 | 9,774 | 286,429 |
| 2009 - 2010 | 105,690 | 18,697 | 19,835 | 6,748 | 144,222 |
| 2010 - 2011 | 110,518 | 26,363 | 20,093 | 6,898 | 156,974 |

**Source:** CSP 2012a.

**Note:** For FY 2008-2009 through 2010-2011, no monthly data are available.

#### *2.9.5.2 Visitor Demographics*

Table 2-22 summarizes visitor demographics on CSP-managed lands by age, gender, ethnicity, education, and income.

**Table 2-22**
**Visitor Demographics**

| Age (Years) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | No Response | 0 – 18 | 18 – 24 | 25 – 34 | 35 – 44 | 45 – 54 | 55 – 64 | 64+ |
| % Visitors | 13.80% | 1.10% | 3.50% | 8.60% | 14.50% | 18.70% | 19.50% | 20.20% |

| Gender | | | |
|---|---|---|---|
| | No Response/Other | Male | Female |
| % Visitors | 18.10% | 50.40% | 31.50% |

| Ethnicity | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | No response | Asian | Native American | Black | Filipino | Hispanic | Pacific Islander | White | Other |
| %Visitors | 23.20% | 3.00% | 3.20% | 2.70% | 0.90% | 8.80% | 0.90% | 54.20% | 3.20% |

| Education | | | | | |
|---|---|---|---|---|---|
| | No response | Some High School | High School Graduate | Some College | College Graduate |
| % Visitors | 16.50% | 3.70% | 17.00% | 29.00% | 33.80% |

| Income | | | | | | | |
|---|---|---|---|---|---|---|---|
| | No response | $0 – $14,999 | $15,000 – $29,999 | $30,000 – $44,999 | $45,000 – $59,999 | $60,000 – $75,000 | Over $75,001 |
| % Visitors | 29.90% | 5.00% | 11.70% | 15.00% | 11.50% | 10.30% | 16.60% |

**Note:** Based on responses to voluntary surveys. Total number of respondents: 565.
**Source:** CSP 2008b.

## 2.10 Circulation

### 2.10.1 Regional Transportation

The Plan Area is between two of California's primary north-south conduits, U.S. Highway 101 (US 101) and I-5, and is adjacent to one of the main east-west routes through the Diablo Range, SR 152. I-5 lies approximately 5 miles east of the reservoir and provides a direct route from the Stockton and Sacramento areas to Los Banos and further south. US 101 is located 35 miles west of the reservoir and provides a relatively direct route from the San Francisco Bay and San Jose to the Salinas area. Numerous smaller roads and highways, SR 33, SR 99, SR 156, and SR 25, located east and west of the recreation area, connect with SR 152 in the general vicinity of the Plan Area. These routes provide access from Fresno, Modesto, Hollister, Monterey, Santa Cruz, Castroville, and surrounding areas.

SR 152 between the Merced–Santa Clara County line and the junction with I-5 has been designated as a High Emphasis and Focus Route for the Interregional Road System (IRRS), a designation that highlights the route's critical importance to interregional travel and to the state as a whole. SR 152 carries industrial,

commercial, agricultural, recreational, and private vehicle traffic. In addition to the IRRS designation, the segment of SR 152 in the project vicinity is a designated Bike Route on State Highway (Caltrans 2009).

Public transportation along SR 152 near the recreation area includes the Merced Area Regional Transit System (MARTS) and Greyhound-Trailways bus lines, though neither stops within the Plan Area. In addition, a high-speed rail line has been proposed and is being evaluated by the California High Speed Rail Authority (see description below under "Regional Planning Influences") that may pass through Pacheco Pass, northeast of San Luis Reservoir. Public transportation is recognized as an important alternative to private vehicles.

### 2.10.2 Plan Area Access and Roads

The locations of Plan Area access points are noted in Table 2-23. In addition to the roads accessing use areas, there are numerous roads within the recreation area that provide access to San Luis Dam and the associated operations facilities, areas along the western shore of O'Neill Forebay, and areas along the southeastern shore of San Luis Reservoir in Basalt Use Area. Access roads are all two-lane paved roads, but roads extending past designated use areas include a variety of two-lane paved, single-lane paved, gravel, and unimproved roads.

**Table 2-23**
**Plan Area Entrance Points**

| Entrance | Location | Nearest Primary Rd. | Entrance Road |
|---|---|---|---|
| Basalt Use Area | Southeast corner of San Luis Reservoir | SR 152 | Basalt Road |
| Dinosaur Point | Northwest corner of San Luis Reservoir | SR 152 | Dinosaur Point Road |
| San Luis Wildlife Area | West side of San Luis Reservoir | SR 152 | Parking area off Dinosaur Point Road |
| San Luis Creek Use Area | Western edge of O'Neill Forebay | SR 152 | San Luis Creek Service Road, South Loop |
| O'Neill Forebay Wildlife Area | East of O'Neill Forebay and dam | SR 33 | Parking area off SR 33 |
| Medeiros Use Area | South side of O'Neill Forebay | SR 33 | Entry road off SR 33. |
| Los Banos Creek Use Area | Around Los Banos Creek Reservoir | SR 152 | Unnamed (off of Canyon Road) |

### 2.10.3 Traffic Volumes and Operations

#### *2.10.3.1 Traffic Volumes*

In 2007, the annual average daily traffic (AADT) on SR 152 just north of its intersection with SR 33 was 24,400. The intersection borders the Plan Area to the

east. The AADT on SR 33 (east of SR 152) was 9,000 (Caltrans 2007b).[6] Table 2-24 lists the peak daily vehicle trips to the five use areas at the SRA for each month for the 2007–2008 fiscal year and the average of the peak vehicle trips to each area.

The combined average of peak daily trips to use areas at the SRA in fiscal year (FY) 2007–2008 was 1,167. This total is approximately 5 percent of FY 2007–2008 AADT on SR 152 and 13 percent of the AADT on SR 33.

**Table 2-24**
**Peak Vehicle Daily Trips for the Five Use Areas in the San Luis Reservoir State Recreation Area for Fiscal Year 2007–2008**

| Month | Daily Trips | | | | | |
|---|---|---|---|---|---|---|
| | Basalt | Dinosaur Point | Los Banos Creek | Medeiros | San Luis Creek | Total |
| July 2007 | 444 | 263 | 103 | 253 | 1,221 | 2,284 |
| August 2007 | 294 | 187 | 121 | 248 | 747 | 1,597 |
| September 2007 | 183 | 191 | 59 | 142 | 759 | 1,334 |
| October 2007 | 137 | 74 | 26 | 61 | 284 | 582 |
| November 2007 | 60 | 78 | 21 | 38 | 110 | 307 |
| December 2007 | 69 | 70 | 31 | 52 | 124 | 346 |
| January 2008 | 103 | 89 | 143 | 26 | 204 | 565 |
| February 2008 | 167 | 132 | 125 | 108 | 417 | 949 |
| March 2008 | 184 | 138 | 47 | 168 | 1416 | 1,953 |
| April 2008 | 227 | 141 | 110 | 133 | 674 | 1,285 |
| May 2008 | 242 | 173 | 90 | 265 | 588 | 1,358 |
| June 2008 | 176 | 109 | 68 | 173 | 908 | 1,434 |
| Total Trips | 2,286 | 1,645 | 944 | 1,667 | 7,452 | 13,994 |
| Average Peak Daily Trips | 191 | 137 | 79 | 139 | 621 | 1,167 |

Source: CSP Four Rivers Sector 2008

#### *2.10.3.2 Traffic Operations*

The Merced County Association of Governments (MCAG) evaluates existing and potential future deficiencies in the regional road network in terms of Level of Service (LOS). LOS is a metric used to describe the traffic flow conditions of a road segment in relation to the capacity of the roadway. LOS characterizes traffic conditions in terms of speed and travel time, volume and capacity, traffic interruptions, and safety. LOS for a road may range from LOS A to F with LOS A being free-flow and LOS F being heavily congested. MCAG has set the standard

[6] In 2010, the AADT on SR 152 near its intersection with SR 33 was 23,800, and the AADT on SR 33 (east of SR 152) was 5,900 (Caltrans 2010). AADT data for 2007 are included to allow comparison with the most recent Plan Area trip data, which is for FY 2007–2008.

of LOS D for the entire regional road network. Any segment of roadway that is worse than LOS D is considered to be a deficiency in the transportation system. These deficiencies are considered when prioritizing projects in the county's capital improvement program. Caltrans has set the thresholds of LOS C for SR 152 and LOS D for SR 33 (MCAG 2010a).

Existing LOS data for SR 152 and SR 33 near the Plan Area are not available. According to the *Route 152 Trade Corridor Study Summary Report*, however, SR 152 east of Gilroy and on the eastbound ascent to Pacheco Pass is nearing capacity and will exceed capacity by 2015 (VTA 2010).

MCAG's 2011 Regional Transportation Plan forecasts that by 2035, both SR 152 and SR 33 in the Plan Area vicinity will operate at LOS F (MCAG 2010a).

### 2.10.4 Parking

In addition to the roads throughout the Plan Area, CSP maintains public parking areas at each of the use areas. Parking capacity is listed by use area in Table 2-25.

**Table 2-25**
**Use Area Parking Capacity**

| Location | Capacity | Description |
|---|---|---|
| Basalt Use Area (511 Total) | | 511 auto spaces, 54 spaces for autos with trailers |
| Fisherman's Point | 115 | |
| Willow Point | 125 | |
| Goosehead | 115 | |
| Main Boat Ramp | 156 | |
| Dinosaur Point Use Area | 123 | Auto spaces, with additional auto and boat trailer parking on boat ramp |
| San Luis Creek Use Area (698 Total) | | 698 auto spaces, 181 spaces for autos with boat trailers |
| South Beach | 110 | |
| North Beach | 204 | |
| Main Boat Ramp | 189 | |
| Upper Boat Lot | 118 | |
| Group Camp | 40 | |
| Check 12 | 37 | |
| Medeiros Use Area | 300 | Informal, unpaved parking along existing roads |
| OHV Use Area | 30 | Informal, unpaved parking |
| Los Banos Creek Use Area | 40 | All for autos or autos with boat trailers |
| TOTAL | 1,702 | |

**Source:** CSP Four Rivers Sector 2012.

The Plan Area currently experiences parking shortages only in certain areas during peak visitation periods. Sufficient parking is available at Basalt and Dinosaur Point use areas that capacity is never exceeded. Medeiros Use Area has no formally designated parking areas (visitors park at their campsites), and adequate space for parking is available to accommodate much higher levels of visitation than currently exist. Parking lots at San Luis Creek and Los Banos

Creek use areas reach capacity frequently, and overflow parking is directed to dirt lots. At Los Banos Creek, CSP staff restrict entry of additional vehicles when parking capacity is reached.

## 2.11 Utilities and Emergency Services

### 2.11.1 Utilities

#### *2.11.1.1 Sewage and Water Treatment*

The Plan Area has two water treatment facilities. The 72,000 gallons per day (gpd) San Luis Reservoir Water Treatment Plant, located in the Basalt Use Area, serves the campground and dump station. A new raw water intake line and pump for water utilization at Basalt Day Use and campgrounds were completed in 2008. The 72,000 gpd O'Neill Forebay Water Treatment Plant, located in the San Luis Creek Use Area, serves the day use areas and campgrounds. Sewage treatment at both facilities routes waste through sewer grinders and uses lift station pumps to move wastewater to evaporation/percolation ponds, located at the facilities. Chemical and vault toilets located throughout the Plan Area are serviced by pumper trucks on a regular basis.

#### *2.11.1.2 Water Storage Tanks*

A total of seven water storage tanks are located throughout the Plan Area. Table 2-26 details tank locations, sizes, and purposes.

**Table 2-26**
**Plan Area Potable Water Storage Facilities**

| Location | Tank Size (Gallons) | Tank Purpose |
|---|---|---|
| Basalt Use Area | 100,000 | Storage at Treatment Plant |
| Dinosaur Point Use Area | 1,000<br>1,000 | Potable Water<br>Irrigation |
| San Luis Creek Use Area | 260,000 (total storage) | Storage (2 tanks) at Treatment Plant<br>Potable Water at Group Camp |
| Medeiros Use Areas | 2 x 1,400<br>2 x 1,000 | Potable Water: Campgrounds |
| Los Banos Creek Use Area | 3,000<br>3,000<br>3,000 | Potable Water: Residences<br>Potable Water: Boat Launch<br>Potable Water: Campgrounds |

**Source:** CSP Four Rivers Sector 2011

#### *2.11.1.3 Electricity*

Electricity throughout the Plan Area is provided by the Pacific Gas and Electric Company (PG&E). Reclamation has a PG&E substation (the San Luis Substation) next to the Gianelli Pumping-Generating Plant. The substation is interconnected

with a double circuit, 230-kilovolt (kv) transmission line that connects to PG&E‘s Los Banos Substation.

Distribution lines enter the San Luis Creek area from the north, paralleling the Plan Area’s western boundary and terminating at the San Luis Creek entrance station kiosk. Electricity is provided to the Medeiros Use Area by the same distribution network, with lines terminating at the entrance station. Distribution lines enter the Basalt Use Area from the east, paralleling the Basalt entrance road and terminating at the San Luis Reservoir Water Treatment Plant and Quien Sabe wind warning lights. Los Banos Creek receives electricity from distribution lines on Canyon Road, which enter the use area and terminate at the residence area. No electricity is provided at the Dinosaur Point area.

#### *2.11.1.4 Other Utilities*

Other utilities within the Plan Area include propane tanks located at the SRA administrative offices, Basalt campground, and Los Banos Creek residences. In recent years, solar panels have been used to power gates in some Plan Area locations, but have been subject to theft.

### 2.11.2 Emergency Services

#### *2.11.2.1 Fire Protection*

Emergency fire protection is provided by Cal Fire, stationed south of Gonzaga Road, east of the SRA Administrative Offices, with supplemental protection provided by the County of Merced. Fire protection includes fire prevention efforts, which range from signs to public education, as well as emergency response in the event of a fire, rescue, or other incident.

#### *2.11.2.2 Security*

Rangers and lifeguards perform law enforcement duties at the Plan Area. Use areas and camping areas are patrolled daily. Patrol shifts vary according to the season; patrols are longer, more frequent, and at later hours during peak use seasons. Seasonal lifeguard staff is added during peak seasons as funds are available. A patrol boat patrols the reservoirs on weekends during high use seasons as staffing is available. In addition, general CSP staff aid in Plan Area security by performing camp checks, collecting fees, assisting rangers, and reporting disorderly or suspicious activity to ranger staff.

#### *2.11.2.3 Medical Aid*

All rangers and lifeguards are trained for emergency medical response. At times, advanced life support services may be delivered and rendered by Cal Fire, which is equipped to respond to all medical emergencies and holds cooperative contracts and agreements with other state and local emergency response agencies that provide supplemental resources when needed. Their primary mission, however, is fire protection services.

## 2.12 Socioeconomics

The proximity of SR 152 places the Plan Area within travel distance of not only nearby cities such as Los Banos and Gustine in Merced County but locations in the Bay Area, particularly from adjacent Santa Clara County, as well as the Stockton, Fresno, and Sacramento metropolitan areas. Existing and projected demographic data play an important part in planning for the Plan Area. Therefore, this discussion considers population and economic influences for both Merced County and the greater regional area. This section considers the following:

- Regional population trends and projections
- Local population trends and projection
- Demographic and economic projections and trends

### 2.12.1 Regional Population Trends and Projections

The population change in Merced County from 1970 to 2010 was 144.5 percent and in neighboring Santa Clara County, 67.3 percent. Over the long term, regional growth could contribute to higher use demand at the Plan Area. Between 2000 and 2010, the Bay Area added 366,979 residents, an increase of more than 5 percent, for a total current population of approximately 7.2 million (ABAG 2011a). The Association of Bay Area Governments (ABAG) projects that growth in the region will accelerate, adding another 1.2 million residents by 2025, an increase of more than 16 percent (ABAG, no date).

In Santa Clara County, the closest Bay Area county to the Plan Area, most population growth is expected to occur in San Jose and to a lesser extent in the south county, while the north and west valley cities are expected to experience relatively little growth. Santa Clara County's projected growth rates for the periods of 2000 to 2010 and 2010 to 2020 are much lower than Merced County, 12 percent and 7 percent, respectively. In 2010, the population of Santa Clara County reached 1.8 million persons, nearly 285,000 more than in 1990 (ABAG 2011b). Annual growth rates during that period ranged from 12,000 to 22,000 persons per year. From 2010 to 2040, the population of Santa Clara County is expected to grow by 21 percent (DOF 2012).

### 2.12.2 Local Population Trends and Projections

#### *2.12.2.1 Population Growth*

Population growth in the San Joaquin Valley and for Merced County in particular could also contribute to higher use demand at the Plan Area. The County's 2010 population of 258,495 is distributed among six incorporated cities: Atwater (27,755), Dos Palos (5,041), Gustine (5,250), Livingston (14,051), Los Banos (36,421), and Merced (80,985). The remaining 88,992 residents are in unincorporated areas.

Table 2-27 depicts population growth during the past decade among jurisdictions in Merced County. Population shifts in Los Banos are especially noteworthy. The catalyst for its rapid growth (78.1 percent between 1990 and 2000 and 40.8

percent between 2000 and 2010) was migration from Santa Clara and other Bay Area counties, as families pursued affordable housing on the west side of Merced County. In 2010, Merced County's total population was 258,495, a 22.8 percent increase over the population in 2000 (210,554).

**Table 2-27**
**Merced County Census Population Estimates and Percent Change 2000-2010**

| Jurisdiction | 2000 | 2010 | Percent Change |
|---|---|---|---|
| Merced County Total | 210,554 | 258,495 | 22.8% |
| Atwater | 23,113 | 27,755 | 20.1% |
| Dos Palos | 4,385 | 5,041 | 15.0% |
| Gustine | 4,698 | 5,250 | 11.7% |
| Livingston | 10,473 | 14,051 | 34.2% |
| Los Banos | 25,869 | 36,421 | 40.8% |
| Merced | 63,893 | 80,985 | 26.8% |
| Unincorporated areas | 78,123 | 88,992 | 13.9% |

**Source:** California Department of Finance 2010.

#### *2.12.2.2 Population Forecast*

**Merced County** Population projections for Merced County and its cities and communities are shown in Tables 2-28 and 2-29. The county is projected to grow by 27 percent between 2010 and 2020, and 26 percent between 2020 and 2030. From 2010 to 2040, the population of Merced County is projected to grow by a total of 98 percent (DOF 2012). The actual growth rates may be affected by the recent downturn in housing and the economy. The majority of the county's population lives in incorporated areas including Atwater, Dos Palos, Gustine, Livingston, Los Banos, and Merced, all of which have shown steadily increasing population growth over recent decades.

**Table 2-28**
**Merced County Population and Employment Forecast**

| | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 |
|---|---|---|---|---|---|---|
| Population | 260,000 | 287,000 | 331,000 | 372,000 | 417,500 | 465,500 |
| Employment | 85,200 | -- | 110,800 | -- | 138,200 | 155,300 |

**Source:** Merced County Association of Governments 2010a.

**Table 2-29**
**Population Forecast by City or Community Growth Area Boundaries**

| | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 |
|---|---|---|---|---|---|---|
| **City or Community** | | | | | | |
| Atwater | 28,100 | 30,100 | 34,200 | 37,700 | 41,600 | 45,400 |
| Dos Palos | 5,000 | 6,700 | 7,100 | 7,500 | 8,000 | 8,500 |
| Gustine | 5,300 | 5,600 | 6,200 | 6,700 | 7,300 | 8,000 |
| Livingston | 141,000 | 16,400 | 19,900 | 22,900 | 26,200 | 29,500 |
| Los Banos | 36,600 | 41,000 | 48,100 | 54,300 | 61,200 | 68,000 |
| Merced | 81,500 | 91,500 | 107,600 | 121,800 | 137,400 | 152,100 |
| Delhi | 10,900 | 12,400 | 14,800 | 16,800 | 19,000 | 21,300 |
| Franklin/Beachwood | 4,500 | 4,800 | 5,400 | 5,900 | 6,400 | 7,100 |
| Hilmar | 5,600 | 6,100 | 7,000 | 7,800 | 8,600 | 9,500 |
| Le Grand | 1,800 | 1,800 | 1,900 | 2,000 | 2,100 | 2,300 |
| Planada | 4,800 | 5,000 | 5,500 | 5,900 | 6,300 | 6,800 |
| Santa Nella | 1,800 | 2,600 | 3,600 | 4,500 | 5,400 | 6,400 |
| Winton | 9,900 | 10,300 | 11,300 | 12,100 | 13,000 | 14,100 |
| UC Merced & UC Community | 1,900 | 4,700 | 9,400 | 15,600 | 22,500 | 31,300 |
| Remainder of Unincorporated | 48,200 | 48,000 | 49,000 | 50,500 | 52,500 | 55,200 |
| **Totals** | | | | | | |
| Incorporated | 170,600 | 191,300 | 233,100 | 250,900 | 281,700 | 311,500 |
| Unincorporated | 89,400 | 95,700 | 107,900 | 121,100 | 135,800 | 154,000 |
| Merced County | 260,000 | 287,000 | 331,000 | 372,000 | 417,500 | 465,500 |

**Source:** Merced County Association of Governments 2010a.

**Notes:**

Population for years 2010 through 2030 are rounded to nearest 100.

South Dos Palos/Midway assumed to be annexed into Dos Palos as of 2010 (shift of 1,500 persons from "Remainder Unincorporated" to "Dos Palos")

Population and forecast data are from MCAG, which prepares and maintains population and employment forecasts for use in regional planning and relies on the latest Department of Finance (DOF) projections for the county-wide total. DOF's latest forecasts were published in 2007; however, MCAG staff calculated an alternate forecast using decentennial growth rates implied by the DOF 2007 projections, but started from a lower base population to account for the recent slowdown in growth associated with the economic downturn (MCAG 2010a).

**City of Los Banos** The City of Los Banos General Plan used shift-share projections from the ABAG to formulate population projections. This data was adjusted to fit probability trends, and then further projected for Los Banos using a constant share method. Population growth estimates are included in Table 2-30. The actual population of Los Banos in 2010 was 35,972 (U.S. Census Bureau 2011).

**Table 2-30**
**Los Banos Population Projections: 2020-2030**

| Year | Population |
|---|---|
| 2020 | 60,700 |
| 2030 | 90,400 |

**Source:** City of Los Banos General Plan 2007.

**Santa Nella** In 1990, the community of Santa Nella had 584 residents living in 273 dwelling units. In 2010, the Santa Nella population was 1,380 residents in 493 dwelling units (U.S. Census Bureau 2011). The current Santa Nella Community Specific Plan, published in May 2000, proposes development with a buildout population of 18,941, but most of the planned development has not yet occurred.

## 2.12.3 Demographic and Economic Projections and Trends

### *2.12.3.1 Demographic Diversity*

Merced County has a relatively young population, with a median age of 29.6 years. Santa Clara County has a slightly older population, with a median age of 36.2 years (2010 data). Of the Merced adults age 25 and older, 68.6 percent are high school graduates and 12.3 percent have a bachelor's degree or higher. Of those in Santa Clara County, 86.4 percent are high school graduates and 46.1 percent have a bachelor's degree or higher (2010 data). Merced County has a diverse ethnic profile: 58.0 percent white, 3.9 percent black or African American, 1.4 percent Native American or native Alaskan, 7.4 percent Asian, and 54.9 percent Hispanic or Latino (of any race) (2010 data). A language other than English is spoken in 51.9 percent of households; 24.5 percent of the county population is foreign-born (2010 data). Santa Clara County is 47.0 percent white, 2.6 percent black or African American, 0.7 percent Native American or Native Alaskan, 32.0 percent Asian, and 26.9 percent Hispanic or Latino (of any race) (2010 data). A language other than English is spoken in 51.1 percent of Santa Clara County households; 37.1 percent of the county population is foreign-born (2010 data) (U.S. Census Bureau 2011; American Community Survey 2010).

### *2.12.3.2 Employment (Local Market Analysis)*

Merced County's economy has historically been based on agriculture and related industries, along with a substantial tourist trade, leading to highly seasonal employment patterns and high rates of unemployment. The county's economy is now primarily based on the health, education, and social services industries. The median household income is $42,449 (2010 data). Unemployment is 18.2 percent and 23.0 percent of the population lives below the poverty level (2010 data). In recent years, the county has sought to develop a broader economic base by expanding the tourist trade, such as recreational opportunities associated with the Plan Area. The county's primary employers include health, education, and social services (20 percent), retail (13 percent), agriculture and natural resources (12

percent), manufacturing (11 percent), and professional and managerial services (6 percent). Minor employers include construction, arts and entertainment, recreation and tourism, transportation, utilities, finance, insurance, real estate, wholesale trade, and the state and federal governments (U.S. Census Bureau 2011, American Community Survey 2010).

Santa Clara County, by comparison, has a higher median household income of $85,002 (2010 data). Santa Clara County has a broader economic base, and its primary employers are health, education, and social services (19.3 percent), manufacturing (18.7 percent), and professional and managerial services (18.5 percent). At 11.2 percent, the unemployment rate in Santa Clara County is lower than in Merced County, as is the poverty level, with 10.5 percent of the population living below the poverty level (U.S. Census Bureau 2011, American Community Survey 2010).

ABAG estimated that the Bay Area economy supported nearly 3.5 million jobs during 2010 (ABAG 2009). The majority of jobs in the nine-county Bay Area in 2010 were distributed among the health and education services industry (17 percent), the manufacturing and wholesale industry (16 percent), the professional and managerial services industry (15 percent), and the arts, recreation, and related industries (13 percent). The remaining 39 percent of the region's jobs were distributed among the following industry categories: retail, financing and leasing, construction, transportation and utilities, information, government, agriculture, and natural resources. (Employment refers to the number of full- and part-time jobs by category or sector for the Bay.)

## 2.13 Environmental Justice

To comply with Executive Order 12898, Federal Action to Address Environmental Justice in Minority and Low-Income Populations, data were compiled for the ethnic composition and income and poverty levels of the State, Merced County, and Santa Clara County.

### 2.13.1 Race and Ethnicity

A minority community is defined as a distinct population that is composed of predominantly one or more racial or ethnic group that is nonwhite. Table 2-31 presents racial/ethnic composition data for the State of California and Merced and Santa Clara Counties. In 2020, nonwhites are projected to comprise approximately 72 percent of the population of Merced County, which is about 9 percent higher than the total percentage of nonwhites in California (63 percent). In Santa Clara County, the percentage of nonwhites (63 percent) is about equal to the State percentage of nonwhites. In both Merced and Santa Clara Counties, the Hispanic population will form the greatest portion of the nonwhite population (63 and 28 percent of the total population, respectively, for 2020). The percentages of nonwhite and Hispanic populations have increased in California, and Merced and Santa Clara Counties since 2000 and are projected to increase, with the most

significant increase occurring in Merced County (California Department of Finance 2007).

In 2030, California's population is projected to be approximately 67 percent nonwhite, with 45 percent of the total population being Hispanic. In Merced County in 2030, the percentages of nonwhite residents (77 percent) is projected to be greater than the State average (67 percent), while the percentage of nonwhite residents in Santa Clara County is anticipated to be lower (66 percent) than both Merced County and the State. In both Merced and Santa Clara Counties, the Hispanic population will continue to form the greatest portion of the nonwhite population (69 and 31 percent of the total population, respectively), for 2030 (California Department of Finance 2007).

**Table 2-31**
**Population Ethnicity Estimates for California, Merced and Santa Clara Counties**

| | Population | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Year | White | Hispanic | Asian | Pacific Islanders | Black | American Indian | Multi-Race | % Non-White | Total |
| **California** | | | | | | | | | |
| 2000 | 16,134,334 | 11,057,467 | 3,761,994 | 110,355 | 2,218,281 | 185,996 | 637,010 | | 34,105,437 |
| Percent | 47.3% | 32.4% | 11% | 0.3% | 6.5% | 0.5% | 1.9% | 52.7% | |
| 2010 | 16,438,784 | 14,512,817 | 4,684,005 | 149,878 | 2,287,190 | 240,721 | 822,281 | | 39,135,676 |
| Percent | 42% | 37.1% | 12% | 0.4% | 5.8% | 0.6% | 2.1% | 58% | |
| 2020 | 16,508,783 | 18,261,267 | 5,527,783 | 196,576 | 2,390,459 | 299,599 | 951,456 | | 44,135,923 |
| Percent | 37.4% | 41.4% | 12.5% | 0.5% | 5.4% | 0.7% | 2.2% | 62.6% | |
| 2030 | 16,377,652 | 22,335,895 | 6,334,719 | 246,363 | 2,475,477 | 350,649 | 1,120,136 | | 49,240,891 |
| Percent | 33.3% | 45.4% | 12.9% | 0.5% | 5% | 0.7% | 2.3% | 66.7% | |
| **Merced County** | | | | | | | | | |
| 2000 | 88,105 | 95,961 | 14,738 | 307 | 7,718 | 1,177 | 3,475 | | 211,481 |
| Percent | 41.7% | 43.4% | 7% | 0.2% | 3.7% | 0.6% | 1.6% | 58.3% | |
| 2010 | 91,799 | 153,698 | 15,949 | 350 | 6,920 | 1,232 | 3,987 | | 273,935 |
| Percent | 33.5% | 56.1% | 5.8% | 0.1% | 2.5% | 0.5% | 1.5% | 66.5% | |
| 2020 | 97,109 | 220,060 | 18,055 | 395 | 7,009 | 1,306 | 4,756 | | 348,690 |
| Percent | 27.9% | 63.1% | 5.2% | 0.1% | 2% | 0.4% | 1.4% | 72.1% | |
| 2030 | 101,543 | 304,592 | 19,191 | 427 | 6,984 | 1,321 | 5,847 | | 439,905 |
| Percent | 23.1% | 69.2% | 4.4% | 0.1% | 1.6% | 0.3% | 1.3% | 76.9% | |
| **Santa Clara County** | | | | | | | | | |
| 2000 | 761,619 | 405,854 | 434,437 | 5,345 | 45,712 | 5,487 | 34,674 | | 1,693,128 |
| Percent | 45% | 24% | 25.7% | 0.3% | 2.7% | 0.3% | 2% | 55% | |
| 2010 | 744,753 | 475,255 | 500,916 | 15,733 | 47,092 | 8,517 | 45,095 | | 1,837,361 |
| Percent | 40.5% | 25.9% | 27.3% | 0.9% | 2.6% | 0.5% | 2.5% | 59.5% | |
| 2020 | 738,743 | 560,058 | 548,927 | 30,498 | 47,586 | 12,589 | 54,404 | | 1,992,805 |
| Percent | 37.1% | 28.1% | 27.6% | 1.5% | 2.4% | 0.6% | 2.7% | 62.9% | |
| 2030 | 742,591 | 672,298 | 598,866 | 48,166 | 47,096 | 17,407 | 70,077 | | 2,192,501 |
| Percent | 33.9% | 30.7% | 27.3% | 2.2% | 2.2% | 0.8% | 3.2% | 66.1% | |

Source: State of California, Department of Finance, Race/Ethnic Population with Age and Sex Detail, 2000–2050. Sacramento, CA, July 2007.

### 2.13.2 Income and Poverty

The U.S. Census Bureau uses a set of income thresholds that vary by family size and composition to determine which families are living in poverty. Poverty thresholds do not vary geographically but are updated annually for inflation using the Consumer Price Index. According to the U.S. Census Bureau, the average

poverty threshold in 2010 was $11,139 for an individual and $22,314 for a family of four.

Table 2-32 shows estimated median household income and poverty levels for California, and Merced and Santa Clara Counties. According to the 2010 U.S. Census, the percentage of the population of Merced County at income levels below the poverty threshold (23 percent) was greater than the State average of 15.8 percent. The median household income in Merced ($42,449) was also below the State household median income of $57,708 (U.S. Census Bureau 2010). On the other hand, the percentage of the population of Santa Clara County at income levels below the poverty threshold (10.5 percent) is about 5 percent lower than the State average. The median household income in Santa Clara County ($85,002) is significantly higher than the median household income of California.

**Table 2-32**
**Median Household Income and Poverty Levels, 2010**

| Location | Median Household Income | Percent in Poverty |
|---|---|---|
| California | $57,708 | 15.8% |
| Merced County | $42,449 | 23% |
| Santa Clara County | $85,002 | 10.5% |

Source: U.S. Census Bureau, 2010 American Community Survey

# 3 Planning Influences

This chapter presents a description of previous planning documents for the Plan Area as well as a summary of system-wide and regional planning influences.

## 3.1 Previous Plans

When approved, the management direction and actions set forth in this Plan will replace those from a series of previous planning documents dating from 1962 to 1985. These documents are summarized as follows, and specific actions proposed in each document are described in Appendix A, Table A-1.

- *Recreation Land Use and Acquisition Plan, San Luis Reservoir and Forebay* (DWR, June 1962). In response to projected increases in recreational demands (to exceed 4 million visitor-days annually by 2020), the report recommended the acquisition of 13 recreation areas totaling 3,308 acres, 768 acres of which would be specifically for recreation, and described potential uses for each area. The report also recommended the acquisition of a 300-foot-wide strip of land bordering the entire perimeter of the reservoir and forebay to ensure unhindered use of the shoreline and reservoir surface for recreation. Once acquired, recreational lands considered for leasing were to be protected for future recreational use. The plan was coordinated with the Division of Beaches and Parks, DFG, and Reclamation.
- *San Luis Reservoir and Forebay Recreation Development Plan* (DWR, May 1965). This report to the State legislature presented a plan for recreational development to support budget requests to construct initial facilities. The report also provided future recreation projections from 1960 through 2020.
- *Los Banos Creek Reservoir Recreation Development Plan* (CSP Division of Beaches and Parks, November 1966, revised December 1969). The plan recommended that the State legislature appropriate $486,650 from the General Fund for initial recreation development of the area from 1969 to 1970. The Plan also described future development for each decade up through 2020 to accommodate estimated use of 425,000 visitor-days annually.
- *Los Banos Reservoir Recreation Development Plan* (DWR, April 1971). This report described general plans for recreational facilities to accommodate boating, fishing, camping, picnicking, swimming, riding and hiking. Initial recreation facilities would be constructed in 1970-1980 and would accommodate 425,000 recreation days of use annually by the year 2020.

- *Boating Plan, San Luis Reservoir State Recreation Area* (Department of Navigation and Ocean Development, March 1972). This plan addressed the development of boating facilities and information to support budget requests to construct facilities. The projected number of visitor days for each decade from 1960 through 2020 was calculated using existing use data at a comparable reservoir, Millerton Lake (310,000 visitor-days in 1960, reaching 4,058,000 visitor-days in 2020). The total maximum number of boats on the San Luis Reservoir at any time was set at 2,090 boats, and at O'Neill Forebay, 523 boats.
- *San Luis Reservoir State Recreation Area, General Development Plan* (CSP, Design & Construction Division, November 1971, revised 1973). This plan focused on the development of O'Neill Forebay Unit for all-year recreational use due to gentler terrain, wind protection, and more sustained pool level than San Luis Reservoir.
- *Amendment to General Plan* (CSP, December 1985). The amendment changed the undesignated land use of the northern portion of the O'Neill Forebay Unit to allow day and overnight use of the Meadows and Grant Line areas.

## 3.2 System-Wide Planning

Planning for the Plan Area must be wide ranging to consider issues that cross regional, local, community, and Plan Area boundaries. Federal, state, county, and community agencies are responsible for providing oversight and review of various planning-related laws and policies, such as the NEPA, CEQA, ADA, as well as RWQCB and Air Quality Management District (AQMD) regulations.

Additionally, numerous Reclamation and CSP resource management directives guide the Plan Area planning process. Most of the following apply to San Luis Reservoir SRA lands managed by CSP, as they have the greatest management responsibility in the Plan Area. However, each of the managing agencies has individual management directives that should be consulted during Plan implementation. These directives consist of the following:

- Mission statements
  - Reclamation Mission and Vision Statement
  - CSP Mission Statement
  - DFG Mission Statement
  - DWR Mission Statement
- California Public Resources Code
- CSP policies, publications, and directives
  - CSP Operations Manual
  - CSP Administrative Manual
  - Planning Milestones for the Park Units and Major Properties Associated with the California State Parks System
  - Park and Recreation Trends in California

  - California Recreational Trails Plan—Phase I
  - California State Parks Accessibility Guidelines
  - California State Parks System Plan
  - Concessions Program Policies
  - California Outdoor Recreation Plan (CORP) 2002
  - Central Valley Vision Draft Implementation Plan
  - Public Opinions and Attitudes on Outdoor Recreation in California (2003)
  - California's Recreation Policy
- National Fire Plan
- Cal Fire Vegetation Management Program

Key directives are described in more detail below.

### 3.2.1 Mission Statements

#### *3.2.1.1 Reclamation Mission and Vision Statement*

The Reclamation Mission Statement is "to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public." Additionally, their vision is "through leadership, use of technical expertise, efficient operations, responsive customer service, and the creativity of people, Reclamation will seek to protect local economies and preserve natural resources and ecosystems through the effective use of water."

#### *3.2.1.2 CSP Mission Statement*

The CSP Mission Statement is "to provide for the health, inspiration, and education of the people of California by helping to preserve the state's extraordinary biological diversity, protecting its most valued natural and cultural resources, and creating opportunities for high quality outdoor recreation."

#### *3.2.1.3 DFG Mission Statement*

The Mission of the DFG is "to manage California's diverse fish, wildlife, and plant resources, and the habitats upon which they depend, for their ecological values and for their use and enjoyment by the public."

#### *3.2.1.4 DWR Mission Statement*

The Mission of the DWR is "to manage the water resources of California in cooperation with other agencies, to benefit the State's people, and to protect, restore, and enhance the natural and human environments."

### 3.2.2 California Public Resources Code

The PRC defines the organization and general powers of CSP and related Public Resources agencies, as well as the general provisions, definitions, and committees for State Public Resources.

### 3.2.3 CSP Policies, Publications, and Directives

#### *3.2.3.1 CSP Operations Manual/CSP Administrative Manual*

The CSP Operations Manual (last updated July 2008) and CSP Administrative Manual are CSP's primary guidance documents. The manuals contain all CSP policies and procedures. The Interpretation and Education Chapter of the CSP Operations Manual was updated in March 2010 and gives policy and guidance on a broad range of interpretation-related topics.

#### *3.2.3.2 Planning Milestones for the Park Units and Major Properties Associated with the California State Parks System*

This July 2009 report provided a record of CSP's milestones and accomplishments in planning and land use management on state park lands throughout California. It includes historical information about park units and properties and related land use planning and management activities. The report also serves as an inventory of all state park units, lands, and properties, totaling 278, that constitute the State Park System.

#### *3.2.3.3 Park and Recreation Trends in California*

This 2005 report detailed recreation trends affecting CSP units, programs, and services. It is intended to help decision makers conduct needs assessments, analyze market demands and niches, and identify programs that are likely to be successful so as to meet the changing and varied demand for recreation opportunities. The report notes that California's rising population and changing demographics will be the overriding factors affecting future CSP recreation opportunities. The report details the increasing racial and cultural diversity of California; its growing senior and retiree population; new recreation habits among young adults; and the need to adapt recreation opportunities to the needs and conditions of California's contemporary youth population. The report notes that as California's population continues to grow and diversify, demands for a variety of recreation opportunities will be virtually unbounded despite limited resources.

#### *3.2.3.4 California Recreational Trails Plan*

The California Recreational Trails Plan (Phase I) was prepared by CSP and released in June 2002. It identifies 12 trail-related goals and lists general action guidelines designed to reach those goals. The goals and their action guidelines will direct the future actions of CSP's Statewide Trails Office regarding trail programs. This Plan is Phase I of a more comprehensive statewide trails plan (Phase II) to be developed. Phase I should serve as a general guide for trail advocates and local trail management agencies and organizations in planning future trails and developing trails-related programs. Phase II will utilize the best of Phase I as a guide and will incorporate hard data and generally accepted planning practices, including additional public input and comment. The 2009 Progress Report on Phase I has been submitted to the State legislature and is available on the CSP website. The 2009 Progress Report includes status updates for each of the 12 trail-related goals and the three California Trail Corridors.

The Statewide Trails Office has as its mission to "promote the establishment and maintenance of a system of trails and greenways that serves California's diverse population while respecting and protecting the integrity of its equally diverse natural and cultural resources. The system should be accessible to all Californians for improving their physical and mental well-being by presenting opportunities for recreation, transportation, and education, each of which provides enhanced environmental and societal benefits."

#### *3.2.3.5 California State Parks Accessibility Guidelines*

The California State Parks Accessibility Guidelines were issued in October 2009 and are scheduled for release as part of the Architectural Barriers Act Accessibility Standards (ABAAS) sometime this year (United States Access Board 2009). These design standards specifically address campgrounds, picnic areas, trails, and other facilities and will apply to all federal recreation areas including those managed for the federal government by non-federal entities. These standards will be used in the upgrade and management of recreation facilities.

#### *3.2.3.6 California State Park System Plan*

The California State Park System Plan addresses the needs and operations of the State Park System through 2020. According to the plan's Executive Summary, it "addresses the System with an emphasis on informing decision-makers, concerned organizations, and a variety of stakeholders" and is "intended to guide staff members who keep the System functioning through its major programs and park operations. It is an important internal tool for communicating advances currently taking place in the State Park System's core programs and key initiatives for future growth and success." Core programs discussed in the plan include natural heritage preservation, cultural heritage preservation, outdoor recreation, education and interpretation, facilities, and public safety. The plan addresses the following key statewide initiatives: state parks in urban areas, acquisition, development, staffing a cohesive system, and funding.

#### *3.2.3.7 Concession Program Policies*

The CSP's Concession Program Policies have provisions for leases and permits, program conflict resolution, an integrated management plan, outsourcing, contracts, interpretive concessions, a request for interest (RFI) process, public stakeholder meetings, performance bonds and sureties, and concessionaire conflict resolution. An "interpretive concession" is defined as a concession that provides an educational service to the public by practicing skills reflective of the interpretive period or interpretive theme of a park unit through products sold, services rendered, or interpretive programs provided.

Concession activities in the Plan Area will meet all Reclamation standards for concessions management by non-federal partners set forth in the Directives and Standards of CSP's Manual (Reclamation 2002).

#### 3.2.3.8 California Outdoor Recreation Plan (CORP) 2008

The *California Outdoor Recreation Plan* (CORP), prepared by CSP, describes federal and state land management agencies and their programs for managing public recreation resources. The report also summarizes local, nonprofit, and private sector providers of recreation within the state.

The CORP discusses demographic trends and challenges that are affecting and will continue to affect California's recreation in the future. Trends include robust population growth, urbanization, and growth of inland counties. Demographic shifts include a continuing increase of Hispanic and Asian populations as a percentage of the total state population. The "baby boom" generation is expected to become a more active senior population than today's seniors.

The popularity of nature study, adventure-based activity, and high-technology recreation are all trends that will influence future recreation numbers and types of recreation participation. Outdoor recreation is very important to Californian lifestyles in general. Recreational walking was the number one activity among surveyed California residents. There is a high, unmet demand for several activities: recreational walking, camping at developed sites; trail hiking; attending outdoor cultural events; visiting museums and historic sites; swimming in lakes, rivers, and the ocean; general nature and wildlife study; visiting zoos and arboretums; camping in primitive areas; beach activities; use of open grass or turf; freshwater fishing; and picnicking in developed sites.

The CORP lists issues facing parks and outdoor recreation, and outlines actions for dealing with the challenges faced by park managers. Issues include funding, access to parks and recreation areas, natural and cultural resource protection, and leadership in recreation. The CORP also outlines health and social benefits of recreation. Wetlands and future reports to be published by CSP are also discussed (CSP 2002). The CORP was last updated in 2008 and approved in 2009. It is available on the CSP website.

#### 3.2.3.9 Central Valley Vision

In 2003 CSP began to develop a roadmap for the State Park System's future expansion in the Central Valley entitled the Central Valley Vision. The Central Valley Vision 2006 was released in March 2006 following an extensive public outreach effort to learn about public preferences regarding future parks, recreation areas, and historical and cultural sites. The Central Valley Vision Summary Report: Findings and Recommendations 2007 was released on January 1, 2007, and contains an overview of the Central Valley Vision process and an explanation of findings and research conducted over the previous three and a half years. The Central Valley Vision Draft Implementation Plan was released for public comment on October 28, 2008, and CSP completed the plan in 2009. The plan focuses on meeting the public's recreation needs in the Central Valley. The plan outlines specific development programs and initiatives for the region aimed at building economic and volunteer partnerships, acquiring new park lands, and developing new and improved recreation opportunities. The plan includes additional specific improvements to the Plan Area under the San Joaquin River

Valley Initiatives, including 300 new campsites, about new 10 picnic sites, trails, angling, and boating facilities (CSP 2009c).

#### *3.2.3.10 Survey on Public Opinions and Attitudes on Outdoor Recreation in California (2009)*

This survey gives local recreation providers a statistically valid sample of what Californians think about outdoor recreation and their use of California parks. This survey analyzes data in four demographics: adults, youths, Hispanics, and by geographic regions. Trends and preferences identified in the survey assist local recreation providers in analyzing how to meet local demand. Results also guide the selection process for the next five years of Land and Water Conservation Fund projects, which is a national grant fund dispensed annually to local agencies by CSP. This survey measured the following:

- Outdoor recreation activities that Californians are currently engaged in;
- Outdoor recreation activities that Californians would like to do more;
- Californians' opinions and attitudes regarding recreation facilities, programs, services, and policies;
- Californians' physical activity in parks;
- Preferences for potential management decisions that could help California park providers reduce and adapt to climate change;
- Californians' willingness to pay for their favorite activities; and
- Changes in responses compared to prior surveys.

The survey was conducted by telephone, mail and online. It was changed substantially from prior years to increase response rates and provide a contemporary view of outdoor recreation in California. The survey consisted of almost 2,800 telephone respondents and 1,200 mail or online respondents. The mail survey added components regarding leisure constraints, climate change, and measures of expressed demand for recreation activities. More information regarding the survey, including detailed tables, charts, analysis, and survey instruments are available on the CSP's website (CSP 2009a).

#### *3.2.3.11 California's Recreation Policy*

This 2005 report puts forth five general tenets of CSP's recreation policy with respect to a broad scope of recreation activities—active, passive, indoors, and outdoors. The five general tenets of the policy are as follows: adequacy of recreation opportunities, leadership in recreation management, recreation's role in a healthier California, preservation of natural and cultural resources, and accessible recreational experiences.

### 3.2.4 National Fire Plan

The National Fire Plan is a long-term strategy that will help protect communities and natural resources, and, most important, the lives of firefighters and the public. First completed in August 2001, the 10-Year Strategy and subsequent Implementation Plan was adopted by federal agencies and western governors. The Implementation Plan established a framework for protecting communities and the

environment at great risk for fire due to unnaturally dense, diseased, or dying forests. The newest implementation plan, completed in December 2006, builds upon the original strategy and is a long-term commitment based on cooperation and communication among federal agencies, states, local governments, tribes, and interested members of the public. Congress also called on the secretaries to work collaboratively and cooperatively with governors in the development of this strategy and as full partners in planning, decision making, and implementation. This resulting strategy has been developed by federal, state, tribal, and local government and nongovernmental representatives for the purpose of improving the management of wildland fire and hazardous fuels, as well as meeting the need for ecosystem restoration and rehabilitation in the United States on federal and adjacent state, tribal, and private forest and range lands.

In addition, this strategy outlines a new collaborative framework to facilitate implementation of proactive and protective measures that are appropriate to reduce the risk of wildland fire to communities and the environments. Meeting the objectives of the strategy requires a coordinated effort across landscapes to restore and maintain the health of fire-prone ecosystems. This strategy recognizes the importance of suppressing fires, especially those near homes and communities, but there needs to be a continued shift in fire management emphasis from a reactive to a proactive approach. This new approach allows a more active collaboration between the fire management organizations and communities.

The purpose of a long-term strategy for reducing wildland fire risks to communities and the environment is meant, in part, to correct problems associated with the long-term disruption in natural fire cycles. This disruption has increased the risk of severe wildland fires on some fire-prone ecosystems. The introduction of now-pervasive invasive species has also increased the wildland fire threat. At the same time, communities have grown into the forests and range lands, increasing the risk to people, their homes, and water supplies. The following core principles are overarching for all goals:

- Collaboration—facilitating a collaborative approach at the local, regional, and national levels
- Planning
- Prioritizing actions and implementation responsibilities
- Timely decision making, particularly for implementing projects and activities
- Tracking performance, monitoring, and ensuring that activities are consistent with relevant science and new information
- Communicating to the public the goals, tasks, and outcomes of the 10-Year Strategy and Implementation Plan

The goals of the updated 10-Year Comprehensive Strategy are to (1) improve fire prevention and suppression, (2) reduce hazardous fuels, (3) restore fire adapted ecosystems, (4) implement post-fire recovery of fire-adapted ecosystems and (5) promote community assistance.

### 3.2.5 Cal Fire Vegetation Management Program

The Cal Fire Vegetation Management Program is a cost-sharing program that focuses on the use of prescribed burns and mechanical means for addressing wildland fire fuel hazards and other resource management issues on State Responsibility Area lands.

## 3.3 Regional Planning Influences

The following local and regional plans will have an influence on plan implementation and should be consulted for guidance during detailed design and development of Plan Area components:

- General, Specific, and Community Plans
  - Merced County Year 2000 General Plan
  - Santa Nella Community Specific Plan
  - City of Los Banos General Plan 2030
  - The Villages of Laguna San Luis Community Plan
  - Fox Hills Community Specific Plan Update
  - MCAG Draft Regional Housing Needs Plan
- Water Resource Plans
  - Central Valley Region Water Quality Control Plan (Basin Plan)
  - San Luis Reservoir Low Point Improvement Study and 2008 Notice of Intent/Preparation
  - B.F. Sisk (San Luis) Dam Safety of Dams Project
- Transportation Plans
  - MCAG Regional Transportation Plan
  - Merced County's 20-Year Transportation Expenditure Plan
  - Caltrans District 10 State Route 152 Transportation Concept Report
  - SR 152 Trade Corridor Project
  - California High-Speed Train Program EIS/EIR
- Renewable Energy Projects
  - San Luis Renewable Resource Project
  - Quinto Solar Photovoltaic Project
  - Other Projects

### 3.3.1 Merced County Year 2000 General Plan

The Plan Area is located within Merced County, which has approved several major new towns within the immediate vicinity. Regional planning efforts envision new town development providing housing for commuters using State Route (SR) 152 to access jobs in Santa Clara County. The Merced County General Plan was last updated in 1990 and covers physical growth and development through 2000. In the spring of 2006, Merced County began a three-year process to update the General Plan. Merced County completed the process of formulating alternatives for the plan and released the Planning Commission

Review Draft in June 2011. The final version of the General Plan is scheduled to be adopted in 2012 (Merced County 2012).

#### 3.3.1.1 Land Use

The Merced General Plan supports the conservation of open space. The Urban Centered Concept is the basic principle of land use policy and is directed at utilizing cities and unincorporated communities or centers to accomplish anticipated urban expansion in an orderly manner. The purpose of using the urban centered concept to plan land use is to ensure the following:

- Growth occurs in an orderly and logical manner;
- Land is utilized efficiently;
- Agricultural operations are not eliminated prematurely;
- The County's planning efforts are complementary to those of the cities; and
- Urban development occurs where proper services are available.

The Plan Area is designated Foothill Pasture under the Merced County General Plan. This designation generally applies to lands on the east and west sides of the county, the Sierra Nevada foothills, and the Diablo Range, respectively. The Foothill Pasture areas are used for noncultivated agricultural practices, which typically require larger areas due to poor soil quality, limited water availability, and steeper slopes. The Foothill Pasture areas are also used for livestock facilities, wastewater lagoons, and agricultural commercial facilities. Certain nonagricultural uses may also be found, including mineral resource extraction and processing, institutional facilities, outdoor public and private recreational facilities, and all accessory uses thereto. The Merced County General Plan uses the Foothill Pasture designation to acknowledge the importance of agriculture and seek ways to protect the land, promote agricultural processing operations, preserve open space resources, and allow for the development of energy production facilities in rural parts of the county. The zoning classification considered most compatible for Foothill Pasture designated areas is generally A-2 (Exclusive Agricultural), which applies to the study area.

#### 3.3.1.2 Safety

The Merced General Plan also addresses some issues relevant to the San Luis Reservoir area, including safety issues related to dam failure and seiches (waves occurring in confined bodies of water). The risk at San Luis Reservoir is heightened because it is in the vicinity of several major fault zones, including the extremely active San Andreas and Calaveras faults and the less active Ortigalita Fault. However, the location of San Luis Reservoir in proximity to potential seismic activity has been compensated for by structural design. San Luis Dam was built to withstand a magnitude 8.3 occurrence at Hollister; however, this does not completely eliminate the possibility of dam failure and resulting floods.

#### 3.3.1.3 Open Space/Conservation

The Merced General Plan acknowledges that recreational facilities provide both economic and open space benefits to county residents and places a high emphasis on public lands and public recreation areas.

The County also has implemented an Open Space Action Plan to carefully manage open space resources in order to support the county's anticipated population growth while preserving nonrenewable assets for future generations. The Open Space Action Plan relies on written policies and inventory maps in addition to the General Plan land use map or individual community Specific Urban Development Plans as a means to define or delineate open space lands.

#### 3.3.1.4 Aesthetics

SR 152 from the Santa Clara County line to the junction with Interstate 5 (I-5) is designated a State Scenic Highway because of its scenic vistas. In addition to traversing rich agricultural farmlands, the route provides drivers with views of the extensive San Luis Reservoir over a considerable distance.

The State has established standards for protecting state designated scenic corridors. Minimum standards for scenic corridor protection include the following:

- Regulation of land use and density of development;
- Detailed land and site planning;
- Control of outdoor advertising (including a ban on billboards);
- Careful attention to and control of earth moving and landscaping; and
- Careful attention to design and appearance of structures and equipment.

#### 3.3.1.5 Agriculture

The Merced General Plan describes and maps a potential Agricultural Services Center (ASC) zone to the west of San Luis Reservoir. An ASC would provide a location for agricultural services, farm support operations, and convenience commercial services for the rural population. A limited amount of housing would be allowed, not to exceed one dwelling unit per acre.

The general plan also describes and maps potential Planned Agricultural Industrial Development (PAID) zones to the north and to the southeast of San Luis Reservoir. This zone would provide a minimum of 160 acres for agriculture-related industrial and support operations that create negative impacts on surrounding properties (animal sales yards and meat packing plants, for example).

### 3.3.2 Santa Nella Community Specific Plan

Santa Nella is an unincorporated community in western Merced. The Santa Nella Community Specific Plan area is bordered by O'Neill Forebay to the west, Outside Canal to the east, McCabe Road to the north, and the California Aqueduct to the south. While Santa Nella is directly adjacent to the Plan Area, most of its 2,466 acres remains undeveloped with few neighborhood and community

commercial uses; approximately half of the land is used for agricultural production.

The current Santa Nella Community Specific Plan, published in May 2000, is an update of a 1981 plan and defines land uses, infrastructure, and related services and programs for the growth and development of Santa Nella. The proposed community in the Santa Nella Community Specific Plan includes 5,183 low-density residential units, 74 golf course residential units, 878 medium-density residential units (of which 20 acres may be high-density, 400 dwelling units max), 350 existing residential units, 2.2 million square feet of commercial units, 3.0 million square feet of industrial uses, and 396,396 square feet of office commercial units, as well as an expansion of the existing golf course. However, no development proposals are under way, and much of the development proposed in the 2000 plan, which anticipated a buildout community population of 18,941, has not yet occurred. Two housing developments with a total of 184 single-family homes have been completed.

### 3.3.3 City of Los Banos General Plan 2030

Los Banos is the largest city in the western part of Merced County and the closest city to the Plan Area. The Los Banos General Plan 2030 Draft was released in 2007. The plan states that the most significant influence on future land use patterns in Los Banos will be the ultimate realignment of SR 152 to bypass the city, as described further in Section 3.3.12.

### 3.3.4 The Villages of Laguna San Luis Community Plan

In September 2008, the County of Merced approved a 6,200-acre development plan directly adjacent to Plan Area that has the potential to affect growth in western Merced County. The Villages of Laguna San Luis Community Plan (Merced County Planning and Community Development Department 2007) outlines the growth and development of a Specific Urban Development Plan area west of I-5 along SR 152 and SR 33, east of San Luis Reservoir and south of O'Neill Forebay. The plan proposes to construct 15,895 housing units to the rural area over the 15-year buildout period. The plan also provides for 176.0 acres of commercial development, with employment of 3,042; 204.5 acres of industrial/research and development/office uses, with 6,166 jobs; school employees numbering 820; and quasi-public and public employment of 17 and 296, respectively. The projected population of the plan area at buildout is 44,773, and total employment is projected at 10,341.

The Villages of Laguna San Luis Community Plan assumes that two new highway interchanges will be needed to serve the community, as well as an expanded circulation system consisting of public transit, bike and pedestrian paths, neighborhood streets, minor and major collector streets, arterial streets, and freeways. The plan includes plans for seven elementary schools, three middle schools, and one high school; a public waste facility; a library; a medical center; and various other community facilities. The additional public utilities may increase fire safety at the Plan Area, as the Villages of Laguna San Luis

Community Plan predicts that three new fire stations will be needed to accommodate the area's growth.

Seven implementation plans have been developed to designate how this community is built. Each will require preparation and adoption of a plan to ensure coordinated development of land uses, necessary infrastructure, and the funding mechanisms to construct and maintain that infrastructure. The seven implementation plan areas envisioned in the Villages of Laguna San Luis Community Plan are as follows.

- Central NW Implementation Plan Area. The 610-acre area north of SR 152 and east of SR 33 will be accessed by new roads off of SR 33 on the west and off of Hilldale Avenue on the west. Land uses include low-, medium-, and high-density residential; regional commercial; light industrial; and a community park.
- Central NE Implementation Plan Area. The 606-acre area north of SR 152 and east of Hillsdale Avenue will be accessed by new roads off of Hilldale Avenue. Land uses include low-, medium-, and high-density residential; village commercial; and light industrial.
- Central SW Implementation Plan Area. The 603-acre area south of SR 152 and east of the extension of SR 33 will be accessed by new roads off the southern extension of SR 33 on the west and off the future southern extension of Hilldale Avenue on the east. Land uses include low-, medium-, and high-density residential use; village commercial; and light industrial.
- Central SE Implementation Plan Area. The 623-acre area south of SR 152 and east of the future southern extension of Hilldale Avenue will be accessed by new roads off the southern extension of Hilldale Avenue. Land uses include low- and medium-density residential use; village commercial; light industrial; and a community park.
- Western Implementation Plan Area. The 644-acre area south of SR 152 will be accessed by Gonzaga Road. Principal land uses are low- and very low-density residential, with a small core of neighborhood commercial and adjacent medium-density residential.
- Southwestern Implementation Plan Area. This 2,032-acre area will be accessed by the Gonzaga Road and Jasper Sears Road. This area is split into two major land uses. The northern and western side of the area is designated as open space and includes the PG&E substation and the areas underlying the major 500kv and 230kv transmission lines, which enter the substation from the south. It also contains a small recreational park operated by the Reclamation located in the southern and eastern part of the Specific Plan Area and designated as an Urban Reserve.
- Southern Implementation Plan Area. The 1,093-acre area will be accessed by the extension of Hilldale Avenue on the northwest and by Billy Wright Road on the east. This area is principally low-density residential and contains a small neighborhood commercial area and the existing Billy Wright landfill. Merced County is currently considering expansion of the

landfill, closure of the landfill, or operation of the site as a transfer station. The determination of the future use of the Billy Wright Landfill will have a direct bearing on the feasibility of development allowed in proximity to the landfill.

The Final EIR for the Villages of Laguna San Luis Community Plan was released in March 2008 (Merced County Planning and Community Development Department 2008c). In July 2010, the Merced County Planning Commission voted to recommend to the Board of Supervisors a development agreement with the owners of the Villages of Laguna San Luis, allowing the developers to apply the land use and planning rules set forth in the 1990 General Plan. The Tier 1 Development Agreement would exempt a 1,700-acre development in the Villages of Laguna San Luis from compliance with the new planning rules currently under revision as part of the 2030 General Plan. The Tier 1 Development Agreement would assure the developers that the planning rules would not change in the middle of the project (Merced Sun-Star 2010). In September 2010, the Board of Supervisors approved the Tier 1 Development Agreement that would apply to the 1,700-acre area on the north and south sides of SR 152 and west of I-5 (Merced County Board of Supervisors 2010).

### 3.3.5 Fox Hills Community Specific Plan Update

The 1,250-acre Fox Hills Community Specific Plan area is approximately 3 miles northeast of Los Banos Creek Reservoir, east of I-5, west of San Luis Canal, and south of Pioneer Road. In 1993, the Merced County Board of Supervisors approved the Fox Hills Specific Urban Development Plan (SUDP), establishing the boundary of the Fox Hills Community Specific Plan area. The original Specific Plan was approved in 1998 to provide detailed land use planning and regulatory guidance for development within the approved SUDP boundary. The Fox Hills Community Specific Plan Update was released in June 2006 and includes updates to the plan area as well as zoning and regulation updates. Under this plan, the most significant influence on future land use patterns is a proposed recreation-oriented development that includes dwellings, a golf course, a clubhouse, parks, trails, and other recreational amenities. A three-year application extension to record the Final Map of this development was approved by the Planning Commission in September 2008 after new legislation modified Section 66452.21 of the Subdivision Map Act.

### 3.3.6 Merced County Association of Governments Draft Regional Housing Needs Plan

MCAG is required to determine existing and projected regional housing needs for the period January 2007 through June 2014. MCAG is also required to determine each local jurisdiction’s share of the regional need for housing. Jurisdictions will then decide how they will address this need through the process of updating the Housing Elements of their general plans. The most recent Regional Housing Needs Plan was adopted by the MCAG Governing Board on August 21, 2008. This plan discusses employment opportunities, commuting patterns, housing

needs and demands, and local housing needs determinations for Merced County for the period January 2006 through June 2014.

### 3.3.7 Central Valley Region Water Quality Control Plan (Basin Plan)

San Luis Reservoir and O'Neill Forebay are located in the southwestern part of the Central Valley Region of the California RWQCB. The most recent Central Valley Region Basin Plan was adopted in 1998, most recently amended in 2011, and covers the entire Sacramento River and San Joaquin River basins. Basin Plans complement water quality control plans adopted by the State Water Board. They describe existing and potential beneficial uses, define water quality objectives, and establish implementation and monitoring plans.

### 3.3.8 San Luis Reservoir Low Point Improvement Project

San Luis Reservoir is a key component of the state's water supply system. With a capacity of more than 2 million acre-feet (af), the reservoir stores water from both the SWP and the federal CVP. San Luis Reservoir currently supplies water to SCVWD and San Benito County Water District through the San Felipe Division.

During the summer, as San Luis Reservoir is drawn down, a thick layer of algae grows on the surface. When the amount of water drops to the beginning of the low point (300,000 af), algae begins to enter the San Felipe Division intake, degrading water quality and making the water harder to treat. The water quality in the algal blooms is not suitable for agricultural water users in San Benito County or for municipal and industrial water users relying on existing water treatment facilities in Santa Clara County. In response, operations have been changed such that water levels are maintained above the low-point elevation, rendering approximately 200,000 af unavailable to state and federal users each year.

In response to the low-point problem, and encouraged by the CALFED Bay-Delta Program (CALFED), SCVWD prepared the *San Luis Reservoir Low Point Improvement Project Draft Alternatives Screening Report* (MWH and Jones & Stokes 2003). The report summarizes the low-point problem at San Luis Reservoir, objectives of the project, alternatives development, the screening process conducted, and information on the public outreach process.

The 2000 CALFED Programmatic Record of Decision and SCVWD's and Reclamation's 2002 Notice of Intent/Preparation (NOI/NOP) for preparation of an EIS/EIR both identified similar projects for a bypass canal that would connect the San Felipe Division to water delivered by the Sacramento–San Joaquin River Delta pumping facilities, to increase use of water in San Luis Reservoir by up to 200,000 af. In 2004, the project was transitioned to a partnership between the District and Reclamation. The participating agencies conducted scoping meetings, the results of which have been incorporated into the Low Point Project, but after the original NOI was published, the project focus has broadened, resulting in new planning objectives. The agencies have decided to reissue the NOI/NOP and conduct new scoping meetings because of the length of time that has passed and the change in project objectives. In August 2008, Reclamation and SCVWD, in

coordination with the San Luis and Delta-Mendota Water Authority, filed an NOI/NOP to prepare an EIS/EIR for the San Luis Low Point Improvement Project. The overall objective of the Low Point project is to optimize the water supply benefit of San Luis Reservoir while reducing additional risks to water users by doing the following:

- Avoiding supply interruptions when water is needed;
- Increasing the reliability and quantity of yearly allocations;
- Announcing higher allocations earlier in the season without sacrificing accuracy; and
- Possibly providing opportunities for ecosystem rehabilitation.

In December 2008, the Environmental Scoping Report was released and identified the three action alternatives carried forward as a result of the alternatives screening process. The three alternatives, which are in addition to the No Action Alternative, are as follows (Reclamation, SCVWD, and San Luis and Delta-Mendota Water Authority 2008):

- *Lower San Felipe Intake Comprehensive Plan*: This plan includes construction of a new, lower San Felipe Intake at an elevation equal to that of the Gianelli Intake. Moving the intake would allow the reservoir to be drawn down to its minimum operating level without algae entering the intake. The new San Felipe Intake would also allow operation of San Luis Reservoir below the 300,000 acre-feet level without creating the potential for a water supply interruption to the San Felipe Division. The plan includes institutional measures, such as exchanges, transfers, and groundwater banking, to serve as a safety net in all years with access to an additional stored water supply in the event that San Luis Reservoir storage is insufficient to meet the allocation.
- *Pacheco Reservoir Comprehensive Plan*: This plan would construct a new dam and reservoir on Pacheco Creek to provide storage for San Felipe Division contractors. The new reservoir would function as an expansion of the CVP share of San Luis Reservoir, increasing supplies to all CVP users. During low point months, San Felipe Division contractors would receive deliveries from Pacheco Reservoir. The plan would allow drawdown of San Luis Reservoir to its minimum operating level without interrupting deliveries to the San Felipe Division. The plan also includes institutional measures, such as exchanges, transfers, and groundwater banking, to serve as a safety net in the event that San Luis Reservoir storage is insufficient to meet the allocation.
- *Combination Comprehensive Plan*: This plan includes multiple structural components and management resources to maximize operational flexibility and supply reliability in the San Felipe Division to address water supply curtailments or reduction generated by the low point issue. The plan would include increased groundwater aquifer recharge and recovery capacity, desalination, institutional measures, and the re-operation of the SCVWD raw and treated water systems. The institutional

measures would allow the SCVWD to take CVP supplies through the South Bay Aqueduct (provided that supplies and conveyance capacity are available) to minimize treated water shortages.

In January 2011, the Plan Formulation Report was released as an interim product of the project feasibility study to determine the type and extent of federal and regional interests in the project. The report describes the process of formulating, evaluating, and comparing alternative plans that address the project objectives, and defines a set of alternative plans to be considered in detail in the Feasibility Report and EIS/EIR. The report concludes that after evaluating the three comprehensive plans described in the December 2008 Environmental Scoping Report, all three plans meet the federal planning criteria to some extent, and all three plans will be carried forward, along with the No Action/No Project Alternative, to the next phase of the feasibility study with results presented in the Feasibility Report and EIS/EIR.

### 3.3.9 B.F. Sisk (San Luis) Dam Safety of Dams Project

B.F. Sisk (San Luis) Dam is a 3.5-mile-long, 300-foot-tall compacted earthfill embankment that holds the San Luis Reservoir. The dam is owned by Reclamation and operated by DWR; reservoir storage space is allotted 45 percent to Federal and 55 percent to State. The dam was completed in 1967 to provide irrigation water storage for the CVP and water for the SWP. Water is pumped into the reservoir for storage by the Gianelli Pumping- Generating Plant from the California Aqueduct and from the Delta-Mendota Canal via O'Neill Forebay.

The dam and San Luis Reservoir are located in an area with high potential for severe earthquake forces from active faults, primarily Ortigalita Fault, which passes directly under the reservoir. In the early 1980s, Reclamation conducted an extensive investigation of the seismic safety of the dam, including drilling holes to sample the soils, laboratory testing of the samples, and geophysical tests. Using these simple methods, the conclusion was that liquefaction could occur in some locations but the dam had no safety deficiencies. By 2005, seismic analysis of dams had changed significantly and additional dam-safety investigations were performed. Based this analysis, it was determined that the risk posed to the downstream public does not meet the Public Protection Guidelines. Therefore, a Corrective Action Study (CAS) was initiated in 2006 to investigate and determine a course of action to mitigate risk.

The purpose of the B.F. Sisk (San Luis) Dam Safety of Dams Project is to improve public safety by modifying the dam to mitigate potential safety concerns identified in the ongoing CAS. The completion of the CAS is expected in 2013 and will result in feasibility-level designs, environmental documentation, selection of the preferred alternative, and a Modification Report to the federal Office of Management and Budget and to Congress. Congressional acceptance of the Modification Report will allow funding for construction.

Environmental documentation includes the completion of an EIS/EIR to analyze the environmental impacts of the following alternatives:

- Berms: Berms would be constructed in six locations for the downstream side of the dam.
- Raise: A dam raise of approximately 15 feet is proposed. The actual raise height and whether it will be applied to the entire length of the dam will be determined during the design process.
- Borrow Sites: Nine borrow sites, all on federal land, have been identified as possible material sources for dam modification.
- Restriction: A reservoir restriction is also under consideration. The viability of this restriction will be determined by economic analyses.

An environmental scoping meeting was held in September 2009; the EIS/EIR is currently in preparation with an expected public release in mid-2012 (Reclamation 2011e; Siek 2012).

### 3.3.10 Merced County Association of Governments Regional Transportation Plan

MCAG was designated the Regional Transportation Planning Agency (RTPA) for Merced County in 1972. As the RTPA, MCAG is required by state law to prepare the Regional Transportation Plan (RTP) and transmit it to the California Transportation Commission and Caltrans every three years. The most recent RTP was adopted in July 2010 (MCAG 2010a).

### 3.3.11 Merced County's 20-Year Transportation Expenditure Plan

The Merced County 20-Year Transportation Expenditure Plan will guide the expenditure of more than $212 million in county transportation funds, plus federal and state matching funds over the next 20 years. The new plan was developed to serve major regional transportation needs in Merced County and addresses local street and road requirements in each of the incorporated cities in the county, as well as unincorporated streets and roads maintained by the County.

The 20-Year Transportation Expenditure Plan was developed as an outgrowth of the 2001 RTP, which projected unmet transportation needs given current financing sources and identified the need for a supplemental plan based on the creation of additional revenue (MCAG 2002). The 20-Year Transportation Expenditure Plan does not include any projects along SR 152.

The 20-Year Transportation Expenditure Plan was updated in 2005 and placed on the June 2006 ballot as Measure A and received voter support. It failed on the November 2006 ballot as Measure G when it was subsequently placed there. Merced County plans to update the 20-Year Transportation Expenditure Plan with a number of public participation efforts and local government reviews outlined in the Fiscal Year 2011-2012 Overall Work Program (MCAG 2011).

### 3.3.12 Caltrans District 10 State Route 152 Transportation Concept Report

State Route 152 is an east-west rural interregional facility connecting the southern portions of the San Francisco Bay Area to the Central Valley, with linkages to

Southern California via I-5 and SR 99. SR 152 provides a moderate level of service for commercial truck travel, agricultural truck access to the Salinas and Central valleys, and recreational travel to the Monterey Bay area (via U.S. 101 and SR 156). In Merced County, SR 152 crosses the city of Los Banos and is approximately 40 miles long.

The State Route Transportation Concept Report (TCR) established the future concept for Level of Service (LOS) for segments along SR 152 and broadly identified the nature and extent of improvements needed to attain that LOS (Caltrans 2005). Operating conditions for each corridor were projected for 10-year and 20-year horizons. Beyond the 20-year planning period, the TCR identified the Ultimate Transportation Corridor (UTC) to ensure that adequate right-of-way was preserved for future ultimate facility projects. The TCR determined that the projected level of service was adequate within the next 20 years for a four-lane expressway for all segments, but that the UTC was a six-lane expressway (Caltrans 2005).

The Los Banos Bypass Project is the only programmed project in the TCR, and the Final EIS/EIR for the project was approved on June 25, 2007. The 10-mile-long project would extend from just west of Volta Road to just east of the Santa Fe Grade, bypassing Los Banos to the north. The first phase of the project was scheduled to begin in 2013 and would extend from the Santa Fe Grade west to Highway 165. The second and third phases were still unscheduled and unfunded. The second phase would complete the bypass from Highway 165 west to Volta Road, and the third would build three overpasses along the project route to bypass signal intersections (MCAG 2010b). Caltrans reported in April 2012 that funds are being programmed for right-of-way acquisition in the 2016–2017 fiscal year.

### 3.3.13 State Route 152 Trade Corridor Project

The SR 152 Trade Corridor Project is currently in the feasibility study phase, with the environmental documentation scheduled for mid-2014 pending the receipt of additional funding. The Preliminary Traffic and Revenue Study and the Route 152 Trade Corridor Study Summary Report were completed in February 2010 and September 2010, respectively. The Trade Corridor Project includes the Los Banos Bypass as well as general improvements to enhance SR 152 as a truck route. The Santa Clara Valley Transportation Authority is leading the development of the project, under the guidance of Santa Clara, San Benito, and Merced counties, and in coordination with Caltrans (VTA 2010).

Regional Improvement Project priorities relevant to the study area include the SR 152 Los Banos Bypass as a Tier One project (MCAG 2010a).

### 3.3.14 California High-Speed Train Program EIS/EIR

Following adoption of a Final Business Plan in 2000, the California High-Speed Rail Authority (HSR Authority) recommended that the state proceed with implementation of a statewide high-speed train system by initiating the formal state and federal environmental review process through preparation of a Program

Environmental Impact Statement/Environmental Impact Report (EIS/EIR), which was released in May 2008. The Program EIS/EIR evaluates a number of project alternatives, including a high-speed train alternative. The high-speed train alternative includes a range of high-speed train alignment and station options. Parsons Transportation Group is working on alternative development. In November 2008, California voters approved by a majority vote Proposition 1A, which would sell almost $10 billion in bonds to fund future work on the 800-mile system planned to connect the Bay Area, Southern California, and the Sacramento area. A number of new planning documents have been released by the HSR Authority, all of which can be accessed on their website, http://www.cahighspeedrail.ca.gov (HSR Authority 2010).

The alignment relevant to the Plan Area extends from Merced through the San Joaquin Valley and Pacheco Pass and then heads north. Proposed stations include Gilroy (near the existing Caltrain station) and the existing San Jose (Diridon) Station (HSR Authority and USDOT Federal Railroad Administration April 2010).

All of the Pacheco Pass alignment options would place Merced on the Sacramento to Bay Area high-speed train line, with less frequent service than the Los Angeles to Bay Area trains. As currently configured, the Pacheco Pass alignment options would also involve construction of tunnels, including a tunnel up to 13.5 miles (21.6 km) in length and one or two additional shorter tunnels. The Pacheco Pass alignments would cross the San Luis Waterway but pass to the north of O'Neill Forebay and San Luis Reservoir (HSR Authority and USDOT Federal Railroad Administration April 2010).

### 3.3.15 Renewable Energy Projects

#### *3.3.15.1 San Luis Renewable Resource Project*

In October 2009, Governor Arnold Schwarzenegger and Secretary of the Interior Ken Salazar signed an agreement to begin the development of renewable energy on federal lands in California. The federal-state initiative directs Interior agencies and California state agencies to identify areas suitable for renewable energy development, identify renewable energy zones based on development potential, and prioritize application processing for solar development in renewable energy zones (U.S. Department of Energy 2009).

Approximately 1,200 acres of federal lands around the San Luis Reservoir may be viable for renewable energy development. It is anticipated that the federal lands around the San Luis Project would be provided to the renewable energy developer on a long-term land use authorization such as a lease, easement, or right-of-way.

Reclamation issued a Request for Interest (RFI) in July 2011 for development of renewable energy project(s) on Reclamation lands adjacent to San Luis Reservoir. Reclamation has identified one site for potential renewable energy development, an area located south of O'Neill Forebay and north of SR 152, in the Medeiros

Use Area. Reclamation will determine the location for a second renewable energy site in coordination with CSP and DWR.

#### *3.3.15.2 Quinto Solar Photovoltaic Project*

The proposed Quinto Solar Photovoltaic (PV) Project includes the construction and operation of a 110-megawatt (MW) solar PV electrical generating facility and associated infrastructure on approximately 1,012 acres. The project would be constructed on unincorporated land directly north and northeast of O'Neill Forebay and adjacent to San Luis Creek Use Area and San Luis Creek Campground. The project site and much of the surrounding land is designated as Agricultural in the Merced County General Plan. The project development footprint would be approximately 528 acres, and the rest of the site would remain as open space.

The proposed project would construct approximately 306,720 solar PV panels mounted on trackers that rotate to follow the sun. In addition to the solar panels, the proposed project would include an electrical substation that would be owned by SunPower, a PG&E switch station, overhead and underground utility lines, a 5,000 square-foot operations and maintenance building, unpaved access roads, security fencing, and a temporary staging area. The project includes a commercial sheep grazing plan for 829 acres of the project site, primarily for food and fiber production and secondarily for vegetation reduction.

The proposed project would require approval of a conditional use permit and removal of the project site from the county's Agricultural Preserve. Construction would generally occur during daylight hours with some limited night and weekend construction. Project construction is proposed to begin in mid-2013 and conclude in late 2014 over a period of approximately 16 months.

The County of Merced is the lead agency for the project's EIR. A Notice of Preparation of an EIR was released in December 2010 and requested agencies, organizations and individuals to provide input on the scope and content of the EIR. A Draft EIR for the project was issued in March 2012.

#### *3.3.15.3 Other Projects*

Several other renewable energy projects are proposed within 10 miles of the San Luis Reservoir SRA. Those projects include SPG Solar/Ingomar Project (1 MW solar PV power generation facility located approximately 6 miles east); Leo/Vega Solar Project (150 MW solar PV generating facility located approximately 10 miles south); and SR Solis in the City of Gustine (located approximately 8 miles northeast of the Plan Area) (California Energy Commission 2011).

Just west of the Plan Area, wind turbines have been operating on ridgelines on the eastern side of Pacheco State Park since 1980. The original owner of the lands that are now Pacheco State Park, Paula Fatjo, established a land lease with a wind turbine company. Upon her passing in 1995, the land was willed to CSP for the purposes of establishing Pacheco State Park. Today, International Turbine Research owns and operates 167 wind turbines that now generate approximately

15.87 megawatts of energy per year, which is purchased by PG&E (OpenE1 2012; Wind Power 2012). The wind energy lease generates income used in support of Pacheco State Park in accordance with the will of Paula Fatjo.

## 3.4 Issues, Opportunities, and Constraints

This section summarizes the key issues addressed in the Plan as well as opportunities and constraints for each. The issues and their associated opportunities and constraints have been identified and documented from numerous sources during the planning process, including user surveys and letters, public and planning team meetings, diverse and knowledgeable agency staff, and academic research and reports. The five following planning areas have been identified to cover the range of issue topics, which are also used in Chapter 4 to categorize the goals and guidelines:

- Resource Management
- Visitor Experience, Interpretation, and Education
- Local and Regional Planning
- Infrastructure and Operations
- Water Operations

### 3.4.1 Resource Management

Resource management for the Plan Area is intended to provide a comprehensive approach for the management of all resources for the life of the Plan. As future projects are implemented, more specific actions can be taken to follow the broader, general policies of the Plan. Previously, the Plan Area has not been the subject of a comprehensive planning effort to look at existing resources or to plan for the future management of these resources. The issues related to resource management have been categorized into the key topics listed and described below. Those issues include the need for more study or surveys to better understand Plan Area resources, which in turn will assist in refining the management actions for the future.

*Key Issues*

- Cultural and historic resources inventory and protection
- Vegetation and wetlands management
- Wildlife species inventory and management
- Climate
- Scenic resources
- Aquatic invasive species management

#### *3.4.1.1 Cultural and Historic Resources Inventory and Protection*

Many of the Plan Area's known cultural resources have been mapped by Reclamation; however, this database is not comprehensive, and undiscovered resources likely exist. Additionally, certain resources need to be recorded with the California Historical Resources Information System (CHRIS). Utilization of the

available data is integral to planning for future uses and activities and to determine the best management strategy for such resources at this programmatic phase of the planning process. Additionally, it is necessary to comply with Section 106 of the NHPA, NEPA and CEQA during Plan implementation. All actions taken pursuant to the Plan shall be planned and implemented in coordination with Reclamation's Mid-Pacific Region Division of Environmental Affairs Cultural Resources staff. At that time, once specific projects/undertakings are planned, targeted studies can be conducted to avoid or minimize impacts to significant cultural resources.

*Opportunities*

- Better public accessibility to cultural collections and to interpret additional aspects of cultural resources.
- Collaboration with SHPO to prepare a programmatic agreement for cultural resources that would include appropriate individual review for future projects.

*Constraints*

- Best management actions have not been established for protecting significant cultural resources at the site (unevaluated resources are treated as significant).
- Lack of adequate facilities for storage, preservation, and display of collections.

#### *3.4.1.2 Vegetation and Wetlands Management*

A vegetation and wetlands inventory does not exist for the Plan Area. To understand what resources are needed for vegetation management, how visitor uses affect vegetation, and how to protect certain vegetative resources, habitat communities should be mapped. Future management actions and tools should be devised to allow ample protection and to comply with CEQA. Additionally, invasive species have been identified as a threat in the upland and aquatic areas of the unit. Grazing occurs at the Medeiros portion of O'Neill Forebay, and if it continues, the effects of this activity should undergo NEPA and CEQA analysis prior to renewal of the grazing lease. Active vegetation management programs are in place, such as the weed abatement program at O'Neill Forebay. Vegetation management should be consistent with the National Fire Plan.

*Opportunities*

- Establishment of a comprehensive vegetation and wetlands inventory as a result of mapping habitat communities.
- Identification and control of invasive species in the upland and aquatic areas of the Plan Area.

*Constraints*

- Known problem areas, such as invasive species are not defined and have not been mapped.

- Adequacy of the existing vegetation and wetlands inventory should be determined, and data gaps should be defined.
- The effects and role of grazing in vegetation management in the Plan Area are unknown.
- The role of prescribed burns in vegetation management is unknown.
- The adequacy of the weed abatement program should be evaluated.
- Consistency with the National Fire Plan should be reviewed.
- The Plan Area lacks an overall vegetation management statement.

#### 3.4.1.3 Wildlife Species Inventory and Management

Information has been compiled from various sources (Section 2.6.2) about species that are likely to exist in the Plan Area. Additional information gathering or surveys could be necessary to better understand the potential wildlife impacts from visitor use and from certain types of development activities proposed in the Plan.

*Opportunities*

- Partner with other agencies and local institutions to further data collection, mapping, and analysis.
- Collaboration with DFG to coordinate hunting and fishing management and recreation and to resolve current conflicts.
- Use existing data and knowledge to plan for wildlife protection through the definition of corridors and minimum disturbance to habitat.

*Constraints*

- Current degree of poaching and enforcement constraints is unknown.
- Lack of signage regarding feeding and petting of wildlife.

#### 3.4.1.4 Climate

Wind is a strong factor affecting use at the Plan Area. For some uses such as windsurfing, wind is a positive feature; however, for many other users, the hot, dry summer weather coupled with the wind is a deterrent for many activities. Warning lights have been installed as a safety feature for boaters and other users, and trees have been planted as wind barriers around picnic areas; however, high winds are an impediment to day and overnight users.

*Opportunities*

- Reduction in wind effects by considering wind factors, location, and landscape solutions in siting additional boating facilities such as ramps and marinas.
- Reduction in wind effects by considering wind factors, location, and landscape solutions in siting additional camping facilities or other improvements.

*Constraints*

- Additional wind warning lights may be needed.

#### 3.4.1.5 Scenic Resources

The open, undeveloped nature of the Plan Area and the rolling, sometimes steep topography are easily affected by intrusions on the landscape. Many areas contain views of the engineered nature of the landscape with the dam as a dominant feature. This is a reminder of the large-scale water operations that take place.

*Opportunities*

- Consideration of the open, uninterrupted nature of the landscape in planning for future facilities.

*Constraints*

- Important view corridors and high points have not been comprehensively inventoried.
- Criteria to determine when views will be affected need to be formulated.

#### 3.4.1.6 Aquatic Invasive Species Management

As described in Section 2.6.6.1, invasive mussels can multiply quickly and clog waterways and pipelines, affect lake ecosystems, and create costly maintenance issues. Invasive mussels can be inadvertently transported on anything that comes in contact with an infested waterbody, ranging from recreational watercraft to shoes and pets. Water conveyance facilities such as aqueducts can also transport mussels from infested to uninfested waters. Reclamation, in coordination with other federal and state agencies, has been conducting research and field testing to prevent the spread of invasive mussels and to develop control and eradication measures. The continued health of the Plan Area requires long-term strategies to avoid an infestation.

*Opportunities*

- Continued implementation of the current mandatory vessel inspection program would reduce the potential for inadvertent transfer of invasive mussels via recreational watercraft.
- Federal, state, and local agency research on detection and control methods is ongoing, and advancements in decontamination, cleaning, and surveying protocols can be implemented as they are developed.

*Constraints*

- Funding may limit ability to continue a mandatory vessel inspection program.
- The potential introduction of invasive mussels from other parts of the CVP and SWP such as the Delta cannot be addressed through Plan Area vessel inspections.

### 3.4.2 Visitor Experience, Interpretation, and Education

The Plan Area serves hundreds of thousands of visitors each year, and as the Central Valley and other regional populations grow, additional visitors may be expected to participate in the recreation opportunities that the Plan Area provides,

as well as seek new and expanded use of such activities and associated facilities. The joint purpose of the Plan Area as an important water storage and distribution location and as a provider of land- and water-based recreation allows for key educational and interpretive opportunities in addition to the core recreational activities for visitors. Future visitor experience, interpretation, and education are dependent on many factors, and the key issues that highlight these are listed and described below as they relate to the Plan Area.

*Key Issues*

- Visitor experience
- Interpretive opportunities
- ADA accessibility
- Concession opportunities
- Limited visitor use and demand data

#### *3.4.2.1 Visitor Experience*

The Plan Area provides a variety of active land- and water-based recreational uses. Visitor surveys, staff evaluations, and population projections have yielded suggestions for additional and expanded facilities and recreational opportunities. Additional swimming areas as well as marinas at San Luis Creek and Dinosaur Point have been identified as potential expansion actions. Additional and upgraded camping areas and hiking and biking trails throughout the Plan Area were also identified as needs during project scoping. A restroom facility at Medeiros could be supported by the users in that area. Fishing and boating access is sometimes limited. The Plan Area has some trail opportunities, and the potential exists to improve linkages and loops in and near the Plan Area. Lands managed by the DFG allow passive recreational activities; however, the DFG must coordinate visitor use with CSP managers.

*Opportunities*

- Partnerships with trail user groups for maintenance, trail patrols, and stewardship.
- Additional facilities, including a visitor’s center and a paved multi-use trail for walking and bicycling.
- An updated trails map to enhance visitor experience and assist staff as new trails and uses are set up.
- A focused trails management plan would provide a framework for long-term trail system assessment and management.
- Trail connections around the San Luis Reservoir and to other parklands such as Pacheco State Park and Los Banos Creek Use Area.
- Potential for additional swimming areas, camping areas, and marinas.

*Constraints*

- High winds and a 200-foot water fluctuation each year would limit the feasibility of a marina at Dinosaur Point.
- A marina at the San Luis Creek Use Area would be subject to high winds.

- A marina at the Medeiros Use Area would also be subject to high winds and would require extensive dredging and possibly a breakwater structure.
- Lack of improvements at Medeiros Use Area.
- Lack of management zones that correspond with land uses in the Plan Area to assist in allocating staff resources and to determine the best locations for new facilities.
- Guidelines for boating in various water management zones, e.g., vessel types, sizes, speeds, noise levels, etc. should be assessed.

#### *3.4.2.2 Interpretive Opportunities*

Currently the Plan Area staff hosts a variety of interpretive programs, predominantly through guided walks and tours. The unit's history and character and function of water supply offer future opportunities to expand interpretive programs. In addition, the Plan Area has been identified as a Watchable Wildlife site (California Watchable Wildlife 2012) and contains a population of tule elk, one of the largest land mammals endemic to California.

*Opportunities*

- Expanded possibilities of allowing Plan Area events and planned group use of the Plan Area through partnering with interested organizations and agencies such as the DWR.
- Establishment of self-guided interpretive walks and the need for additional interpretive displays.
- Signage or programs to educate visitors about tule elk and other notable wildlife of the Plan Area.

*Constraints*

- The status of existing interpretive programs, and their need for improvement or expansion has not been evaluated.
- Lack of a visitor's center to orient and educate visitors and to house cultural resource collections and information.

#### *3.4.2.3 Americans with Disabilities Act Accessibility*

The majority of the visitor facilities are currently ADA accessible, with recent improvements to certain areas providing additional access. Requirements may change over time and currently conforming facilities may need to be replaced or retrofitted. Accessibility should be considered in the planning and development of all future facilities. Visitor access needs to include opportunities for users with varying degrees of ability.

*Opportunities*

- Additional ADA-accessible water access for fishing or swimming.

*Constraints*

- Lack of inventory of which areas within the Plan Area can be planned to best accommodate ADA accessibility.

- New improvements and locations for ADA-compliant programs and facilities have not been assessed.

#### 3.4.2.4 Concession Opportunities

A concession stand selling ice cream and water is currently in operation at the San Luis Creek Use Area between Easter and September 30. There are opportunities for other concessions to be added that complement the character of the SRA and enhance overall Plan Area function, including paddleboards, kayaks, personal watercraft, boats, bicycles, and other food services. Concessions should be considered for improving and enhancing the operations of the Plan Area in partnership with CSP staff.

*Opportunities*

- Concession services could complement and enhance the Plan Area's operations.

*Constraints*

- Lack of concession services may limit visitation.
- Level of visitor use may not support a long-term concession operation.

#### 3.4.2.5 Limited Visitor Use and Demand Data

Facilities and uses should be planned utilizing visitor information. Currently, there are limited visitor use and demand data. Site-specific surveys of visitors attending the various use areas and what they do or their needs have not been conducted. More information on where visitors are coming from and how long they visit the Plan Area would help to develop future facilities. These data would help to determine the greatest need for facilities and where there are existing problems and opportunities. In addition, they would provide a means to track visitor satisfaction.

*Opportunities*

- Use regional data sources and collaborate with county agencies and other entities to plan regional park facilities and conservation efforts.
- Devise an enhanced system for tracking visitor use at the Plan Area and improve the database that can be readily accessed by agency staff to gain information about visitor and use trends.

*Constraints*

- A review has not been conducted of data currently being collected by CSP Visitor's Survey Division to determine how this can aid in planning for future visitors' needs.

### 3.4.3 Local and Regional Planning

The Plan Area is managed by three state agencies and owned by Reclamation, requiring ongoing coordination and cooperation. Additionally, the Plan Area is located within the Central Valley region of the state and will be surrounded by

increased mixed use development as the region continues to grow. The role of the Plan Area within the developed region as well as in relation to other public parks and open space lands may change over time, and the Plan needs to work in concert with local and regional planning efforts. The key issue areas have been listed and described below, and are meant to be comprehensive and inclusive to allow flexibility while defining some specific opportunities and constraints.

*Key Issues*

- Relationship with multiple agencies and landowners
- Regional population and demographics
- Coordination with local and regional plans

#### *3.4.3.1 Relationship with Multiple Agencies and Landowners*

Reclamation constructed the Plan Area facilities and owns a majority of the surrounding land. Lands adjacent to the reservoir are managed by several agencies, including CSP, the DWR, and the DFG. Water operations are managed by the DWR. CSP manages lands adjacent to the reservoir for recreation as part of the SRA, whereas the adjacent Pacheco State Park is also managed by CSP, but for different recreational opportunities. Within the Plan Area, the DFG manages the San Luis Reservoir Wildlife Area and O'Neill Forebay Wildlife Area for passive recreation, hunting, and fishing. The DFG also owns and manages the Upper Cottonwood and Lower Cottonwood wildlife areas for hunting and wildlife viewing; however, these are not part of the Plan Area.

The CVP construction of the reservoirs yielded many specialized agreements for long-term management and operations and wildlife mitigation on the Plan Area lands. Additionally, right-of-way agreements were executed between Reclamation and various utility interests. The Plan Area is also surrounded by private landowners predominantly to the south and east of San Luis Reservoir and along the northern and southern boundaries of Los Banos Creek Reservoir.

The sharing of management responsibilities facilitates a coordinated working relationship between these agencies and stakeholders and is an important factor in successful Plan Area management and development. Planning therefore should be coordinated to emphasize compatibility with the goals of federal, state, and local jurisdictions and stakeholders.

*Opportunities*

- Collaboration with DFG to review conflicts of use and issues regarding fishing and game hunting.

*Constraints*

- Lack of coordination with agencies and landowners.
- Enforcement responsibility of local agencies has not been reviewed.

#### 3.4.3.2 Regional Population and Demographics

The growing populations and changing demographics of the Central Valley and Merced, Monterey, San Benito, and Santa Clara counties will influence future recreational demand at the Plan Area. In addition, planned new communities in the immediate area will increase demand on Plan Area resources. Increased Plan Area use associated with changes in population and demographics will increase recreation demand, including demand for active and nature-based recreational uses, such as hiking, mountain biking, and nature study, as indicated by the 2000 California State Parks Visitor Satisfaction Survey. CSP will respond to these trends through appropriate unit development, while maintaining a balance between facilities and recreation development and natural and cultural resource protection.

*Opportunities*

- As population increases, regional demands for recreational and nature-based facilities can be addressed.

*Constraints*

- Lack of a system to track development in the area and coordinate with adjacent counties to help ensure that proposed Plan Area activities facilities respond to demographic trends.

#### 3.4.3.3 Local and Regional Plans

Several planning efforts are under way that may affect facility development and resource management at the Plan Area, as described in Section 3.3. Adjacent planned new communities include the Villages of Laguna San Luis and those included in the Laguna San Luis Community Specific Plan and the Santa Nella Specific Plan. A 1,700-acre development project (primarily residential) in the Villages of Laguna San Luis is currently planned on the north and south sides of SR 152 and west of I-5. Caltrans is undergoing analysis of the RTP, which includes long-term improvements near the Plan Area along the SR 152 corridor. The San Luis Reservoir Low Point Improvement Project, B.F. Sisk (San Luis) Safety of Dams Project, and San Luis Renewable Resource Project may affect use of certain portions of the Plan Area for extended periods and may affect natural and cultural resources. Additional studies conducted as part of those efforts could be utilized in Plan implementation efforts. The California High-Speed Rail Corridor program is in process, and one alignment may affect land near the Plan Area. All of these efforts will influence the Plan Area planning process and can be opportunities to coordinate with resource collection efforts and other Plan implementation.

*Opportunities*

- Consolidate data collected for nearby projects with that of the Plan Area to better understand cumulative effects of local and regional development.

*Constraints*

- Consistency with plans and environmental documentation of proposed development and transportation planning projects should be reviewed and maintained.
- Unknown if all development plans for property adjacent to the Plan Area are compatible and have appropriate buffers.

### 3.4.4 Infrastructure and Operations

As the region surrounding the Plan Area has continued to develop and visitor use has increased, existing infrastructure and operations need to be evaluated for efficiency, safety, and optimal use. Key issues have been listed and described below and include broad areas that will need to be reviewed during the life of the Plan at the regional level as well as for site-specific use areas. Related to this planning area are the overall staff resources that will be provided by CSP in the future and the ability to limit the Plan Area to expansion. Opportunities exist to coordinate new and improved infrastructure and operations more economically, efficiently, and sustainably if planned holistically and in coordination with partner agencies.

*Key Issues*

- Ingress to and egress from SR 152 and SR 33, and access to Los Banos Creek
- Adequacy of existing staffing and operations and maintenance facilities
- Utilities
- Sustainability and renewable energy

#### *3.4.4.1 Ingress to and Egress from SR 152 and SR 33, and Access to Los Banos Creek*

Local and regional traffic and safety issues affect visitor and staff circulation in and around the Plan Area. Access to and from SR 152 to the San Luis Creek Use Area and Gonzaga Road facilities has been identified as one of the primary safety concerns for present and future Plan Area use due the increasing traffic volumes and limited blending and turning lanes on SR 152. Access to Medeiros Use Area off of SR 33 lengthens staff travel time to this location. Access in and out of Dinosaur Point Road onto SR 152 could be improved by enhancing turning lanes and sight distance. Separation between San Luis Creek and Medeiros use areas by O'Neill Forebay requires staff access onto SR 152 for patrolling and monitoring. Distance to Los Banos Creek Use Area and the indirect route currently available requires substantial time for staff coordination of maintenance and operations activities.

*Opportunities*

- Coordinate with and provide recommendations to Caltrans for future safety and traffic flow improvements for ingress to and egress from SR 152.

- Option for internal access between San Luis Creek and Medeiros use areas.
- Option for more direct access to Los Banos Creek from headquarters.

*Constraints*

- Adequacy of signage both within and outside of the Plan Area.
- Access points for security, emergency access, and management coordination with the DWR and other agencies with jurisdiction should be reviewed.
- Traffic impacts of proposed uses and facilities.
- Public and agency internal access routes should be reviewed to determine what improvements are necessary to maintain or improve these routes over time.
- Internal circulation/parking.

#### 3.4.4.2 Adequacy of Existing Staffing and Operations and Maintenance Facilities

Staff operations for CSP's management of the Plan Area are currently centered at the Gonzaga Road complex. This complex also contains the SRA administrative offices and services other parks in the sector. The SRA and Pacheco State Park share staff personnel, and some staff members work district wide. Adjacent to CSP facilities is the DWR's main operations center, known as the San Luis Field Office. Reclamation owns most of the lands of the SRA but does not have any field operations on-site. The DFG, which manages lands that are part of the Plan Area, operates out of the Los Banos Wildlife Area field office off-site. Cal Fire has a field station on Reclamation lands, off Gonzaga Road. The CSP, other than for water operations, is responsible for the largest segment of land management in the Plan Area.

*Opportunities*

- Optimize use of resources among the managing agencies.

*Constraints*

- Adequacy of existing facilities has not been evaluated.

#### 3.4.4.3 Utilities

Any future uses or activities are potentially limited by potable water storage and distribution. Other existing infrastructure, such as sanitary, electric, and communications systems, is also limited and needs upgrading prior to facilities development. The potential for cell tower development exists on federally owned land. Current RV hookups may not be adequate.

*Opportunities*

- Allow for future facility improvements to be adequately served by existing infrastructure and determine the need for system upgrades.

*Constraints*

- Lack of a database or as-built drawings of existing infrastructure systems.
- Extent of future facilities, infrastructure requirements, and limitations.
- Adequacy of lighting at all use areas for operations and visitor safety.
- Potable water storage and distribution systems need upgrading or improvements.

#### *3.4.4.4 Sustainability and Renewable Energy*

Previous planning documents for the San Luis Reservoir SRA predated federal and state programs and initiatives to reduce human contribution to global climate change. Programs such as LEED (Leadership in Energy and Environmental Design) provide guidance for sustainable construction and development practices, and sustainability principles have been developed that emphasize environmental sensitivity in construction, the use of nontoxic materials and renewable resources, resource conservation, recycling, and energy efficiency such as solar power. As described in Section 3.3.15.1, a 2009 federal-state initiative directed Reclamation and other U.S. Department of the Interior agencies and California state agencies to identify areas suitable for renewable energy development, identify renewable energy zones based on development potential, and prioritize application processing for solar development in renewable energy zones (U.S. Department of Energy 2009).

*Opportunities*

- Implementation of sustainability principles such as solar power and other carbon-reducing measures in existing and future Plan Area facilities, uses, and maintenance and operations.
- Federal lands within the Plan Area may be viable for renewable energy development.

*Constraints*

- Funding may limit ability to establish and maintain long-term implementation of sustainability principles and practices.
- Theft and/or vandalism of solar devices has been reported in the Plan Area.
- Compatibility of renewable energy development with natural, cultural, and recreational resources of the Plan Area.

### 3.4.5 Water Operations

The Plan Area was designed and engineered to store and distribute water for the region. Recreation is provided as an accessory to that land use and can have an effect on recreational visitors. Some requirements, such as during peak water use, can leave the water surface levels lower than desired for certain recreational uses. The two key issues related to water operations are listed and described below, with the understanding that water storage and distribution are the primary land uses and activities that preceded the recreational land uses.

*Key Issues*

- Water level fluctuations
- Restriction of access to dams and power facilities

#### 3.4.5.1 Water Level Fluctuations

While water level changes are integral to the operation of the water supply facilities, fluctuations require the need for boat launches to be moved, for reduced water recreation user days, and for other impediments to recreational use. The primary function of the Plan Area is for water supply and distribution; however, communication between the managing agencies can assist in minimizing the impacts associated with water level fluctuations.

*Opportunities*

- Improvement of interagency communication to reduce field time associated with water level modifications.

*Constraints*

- Acceptable minimum elevation and level of elevation changes have not been defined.
- Lack of information regarding current elevation levels available to assist recreational water users.

#### 3.4.5.2 Restriction of Access to Dams and Power Facilities

Certain areas of the Plan Area lands are managed solely by the DWR for water supply, distribution, and operations. These areas require separate regulations regarding access for recreational use.

*Opportunities*

- Improvement of interagency coordination to provide more efficient management and enforcement, such as sharing of gate keys, etc.

*Constraints*

- Security issues and locations that need improvements have not been defined.

# 4 Plan Overview

This chapter is the core of the Plan, setting forth the policies needed to manage all aspects of the Plan Area. It describes the comprehensive long-range purpose and vision for the future of the Plan Area. It provides policies in the form of goals and guidelines to guide future management. This chapter also sets forth management zones for different geographic areas of the Plan Area, each with their own resource goals and land uses. It then presents a description of the alternatives that were developed to implement the Plan.

The Plan will give Plan Area staff guidance for managing visitor uses and facilities while also protecting natural, cultural, and scenic resources for the next 25 years. The Plan is designed to be in compliance with applicable state and federal planning initiatives and policies presented in Chapter 3.

This chapter also serves as the project description for the programmatic Draft EIS/EIR. The Plan is a programmatic policy document and is analyzed accordingly under NEPA/CEQA requirements in Chapter 5. Future, project-level analysis will occur as specific components of the preferred alternative are developed, subsequent to the approval of this Plan.

## 4.1 Purpose and Vision

This section summarizes the Declaration of Purpose that currently exists for the Plan Area, and provides updated factors from the Reclamation and CSP that need to be considered for the future management of the Plan Area. A new, revised Declaration of Purpose is included here to reflect the past, present, and future purpose and vision. The Declaration of Purpose, as previously adopted by CSP, describes the Plan Area's purpose and is the broadest statement of management goals designed to fulfill the vision for the Plan Area. A Declaration of Purpose is consistent with PRC §5002.2(b), which requires "setting forth specific long-range management objectives for the unit consistent with the unit's classification."

### 4.1.1 Declaration of Purpose

The Declaration of Purpose is the "mission statement" for the Plan Area. It guides the content of the Plan and therefore the future management of the unit. The CSP set forth a purpose statement when the facilities were first developed in 1966, as follows:

> To make possible the full utilization of the aquatic and other recreational opportunities in and about San Luis Reservoir and its forebay, located in western Merced County; together with consideration for all scientific, scenic and historical resources of the area.
>
> The function of the division of Beaches and Parks at San Luis Reservoir State Recreation Area is to design, construct, operate and maintain public recreational

> facilities of such scope and in such manner as to realize the maximum recreational potential of the area, consistent with the orderly operation of the Water Project facility for its other authorized purposes; and to protect and enhance the resources of the area in accordance with its declared purpose.

Additionally, during the planning process CSP conducted in-house workshops to determine the key issues that needed to be covered in a new Plan. The key values for the Plan Area as noted in the CSP purpose statement of November 2001 include:

- Water storage, supply, and distribution facilities and infrastructure;
- Water and land-based recreation including hiking, camping, windsurfing, boating, and fishing;
- Plant communities including grassland and riparian;
- Special-status and other wildlife species (e.g., see Table 2-17);
- Culturally and historically significant areas;
- Open space/scenic vistas; and
- Interpretive and concession opportunities.

The following items developed by Reclamation further define management objectives for the Plan Area that should be embraced in a revised Declaration of Purpose:

- Identify the current and most appropriate future uses of land and water resources within the Plan Area.
- Identify long-term resource management and implementation policies to manage, protect, and preserve recreation, natural, and cultural resources while providing visitor interpretation and education to enhance stewardship.
- Determine the opportunities for new or enhanced recreation facilities to meet the demands of a growing, diverse population.
- Identify opportunities and develop partnerships for managing recreational and natural resources.
- Provide adequate public safety and security measures for protection of visitors and resources.
- Ensure timely delivery of quality water to the public while enhancing natural resources and recreational opportunities.
- Provide framework for establishing a new management agreement with CSP.

Based on key values and management objectives, the comprehensive purpose statement for the Plan Area encompasses the past, present, and future purpose and vision, is proposed as the new purpose statement, and is defined by CSP and Reclamation as:

> To preserve, expand, and improve the current and future regional land and water-based recreation in the State through the long-term continuation of interagency agreements that promote full utilization of the aquatic and other recreational opportunities while

continuing to encourage resource management at the Plan Area and in connection with regional parks and open space and will provide for the protection, maintenance, rehabilitation, and interpretation of natural and cultural resources, while continuing to store and distribute water for the region.

### 4.1.2 Vision

The Plan Area vision describes the future essential character and overall appearance of the Plan Area during various phases of Plan implementation and, ultimately, upon completion of Plan development. The Plan Area will continue to serve a broad spectrum of visitors from many locations throughout the state to enjoy and participate in a variety of water- and land-based recreation while protecting the natural and cultural resources. The three water bodies will be managed to provide recreational activities differing in intensity to allow for user diversity. The Plan Area contains distinct use areas that will each maintain a different character based on the different visitor uses provided, as well as the unique water and landscape features inherent in each.

The overall vision is that the Plan Area will provide a range of uses and experiences that dovetail with the three general types of recreation – active, passive, and primitive – based on the ability to accommodate visitors and the intensity of uses that occur there. O'Neill Forebay will remain the most actively used water body within the Plan Area, with varying degrees of land-based recreation; San Luis Reservoir will provide a more passive experience; and Los Banos Creek Reservoir will provide more primitive area recreation uses.

To achieve this, the Plan classifies the land and water areas into management zones that allow for further definition of the resource goals and specific uses that can occur in each area. Throughout the Plan Area, management zones for land areas are intended to be compatible with and supportive of adjacent water-based recreation (Section 4.3). In all areas, the vision includes maintaining and enhancing the site-specific and regional biodiversity of the Plan Area, to protect cultural resources, and to interpret and educate the public about these resources to assist in long-term stewardship.

## 4.2 Goals and Guidelines

This section presents Plan Area policies in the form of Goals and Guidelines to guide use, development, and management of Reclamation lands and for achieving the Declaration of Purpose and Vision Statement relating to all aspects of future Plan Area management. The Plan uses goals and guidelines to address the issues, opportunities, and constraints for each planning area, as outlined in Section 3.4.

The purpose of the Plan goals and guidelines, as defined below, is to present the desired future condition of the Plan Area, based on the existing conditions, issues, and associated opportunities and constraints, and the ultimate alternative selected for implementing these policies:

**Goal**—General, overall, and ultimate purpose, aim, or intent which will guide management effort. Goals are not necessarily measurable except in terms of the achievement of component objectives.

**Guidelines/Objectives**—General set of parameters that provide a broad-based strategy and guidance towards accomplishing goals.

This section is organized following the broad planning areas outlined in Section 3.4, with abbreviations added to identify individual goals and for reference in the remainder of Chapter 4:

- Resource Management (RES)
- Visitor Experience, Interpretation and Education (VIS)
- Local and Regional Planning (REG)
- Infrastructure and Operations (OPS)
- Water Operations (WA)

For each planning area, a series of goals is identified based on specific issues and needs, as well as the desired future condition based on the Plan Area purpose and vision. These goals apply to the entire Plan Area. Each goal has guidelines and objectives to provide specific future actions that can be implemented to achieve goals in the future. For each goal, one or more guidelines are provided to give direction in accomplishing the goal. Goals and guidelines provided herein are prepared to set the stage for achieving the desired future condition with current available information and data.

It is expected that as more research, data collection, monitoring, and reconnaissance takes place and as more of the Plan Area's features and activities are recorded, goals and guidelines presented in the Plan may need to be amended, adjusted or revised. This approach also allows management of the Plan Area to adapt to changing needs.

### 4.2.1 Resource Management

Resource management goals encompass all natural and cultural resource or physical elements in the Plan Area. Long-term stewardship is essential to sustain and preserve scenic, cultural, climate, hydrologic, and biotic resources for the future. These resources are described in Chapter 2 and are presented and numbered in this section under the following categories:

- Scenic/Aesthetic (RES-S)
- Cultural/Historic (RES-H)
- Climate (RES-C)
- Hydrology/Water Quality (RES-WQ)
- Vegetation (RES-V)
- Wildlife (RES-W)
- Aquatic Invasive Species (RES-A)

#### 4.2.1.1 Scenic/Aesthetic (RES-S)

A strong characteristic of the Plan Area is the open scenic vistas of undeveloped land and open water. The scenic qualities are represented by the surrounding undeveloped landscape, open grassland, expansive vistas of the rolling terrain and the adjacent Diablo Range. Also, most shoreline areas allow for uninterrupted views of the open water from the three reservoirs. In some cases, such as at Los Banos Creek Reservoir, the views from the north and south plateaus provide a vista opportunity of the water and adjacent landscape. Additionally, the layout and configuration of the built structures in the Plan Area are clustered in succinct areas, reducing the sense of sprawl and visual clutter. Portions of the Plan Area, especially near the dams and the operations facilities, contain many built structures with an engineered character. This contributes to the understanding of those areas as water storage and distribution facilities. Recreation area signage portrays an image and identity for the Plan Area and contributes to the aesthetic experience.

**Goal RES-S1**

- Preserve scenic vistas that overlook open land and water through the identification and definition of significant vista points and viewsheds.

*Guidelines*

- Before development of new facilities, consider the visual effect of new structures and carefully site features within an identified viewshed.
- Where feasible, avoid placement of new structures or other obstructions at or near identified significant vista points and along uninterrupted shorelines and landscapes.

**Goal RES-S2**

- Maintain large expanses of open space free of visual and physical interruptions.

*Guideline*

- Minimize, shield, or use new architectural controls in the development of new structures and reduce existing structures and other features that visually and physically fragment open space.

**Goal RES-S3**

- Make new structures architecturally compatible with their use as recreation facilities and distinguishable from the water operations structures but in keeping with overall site character.

*Guidelines*

- Identify the architectural components (style) and other contributing elements that define the recreation use areas and site character, and use this information to assess consistency of new structures.

- Where feasible, ensure that the mass and scale of new structures are compatible with the setting and do not dominate the surrounding landscape.

**Goal RES-S4**

- Identify a common and unified set of site-related details and materials (signage, gates, surface materials, fences, etc.) so that new facilities and infrastructure are compatible with the character of the site and are distinctive for recreation facilities.

*Guidelines*

- Avoid the introduction of materials not in keeping with the local and onsite character.
- Design new details to be compatible with existing materials and finishes while creating a unified image for the Plan Area recreation facilities.
- Develop a signage and wayfinding system that incorporates guidelines and standards for signage as well as the location, distribution, and frequency of signs.

**Goal RES-S5**

- Prevent aesthetic and environmental damage from duration and intensity of lighting and fixtures.

*Guidelines*

- Design and place light fixtures only as needed and in keeping with use and character. Minimize intensity by considering techniques such as low-voltage fixtures and downlighting.
- Design lighting systems and facilities that avoid light pollution onsite and offsite spills to neighboring areas.

#### *4.2.1.2 Cultural/Historic (RES-H)*

Cultural resources consist of significant and potentially significant prehistoric and ethnographic sites, historic and ethnographic resources, cultural material collections, and cultural landscapes. The Plan Area contains significant cultural resources.

**Goal RES-H1**

- Protect and preserve significant prehistoric and historic resources, and collections within the Plan Area, including those that may be undocumented.

*Guidelines*

- Maintain the existing inventory, mapping system, and database for cultural resources within the Plan Area.

- Provide for storage of collections and documentation and display of select cultural resources.
- Submit and complete site records to the State Historic Preservation Officer as necessary to determine eligibility for inclusion in the National Register of Historic Places, the California Register of Historical Resources, or for listing and recognition under CSP's Cultural Resources Division, including under cultural landscapes.
- The District Superintendent may solicit the evaluation of potential cultural landscapes within the Plan Area using National Park Service (NPS) guidance on cultural landscapes as outlined in *Protecting Cultural Landscapes*. Prepare Cultural Landscape Reports when deemed appropriate and necessary.
- Consult with CSP's cultural resource specialists when planning the construction of new facilities and uses.
- When new development or improvements to existing facilities are proposed and may impact cultural resources, ensure compliance with NEPA and CEQA requirements.

#### *4.2.1.3 Climate (RES-C)*

The effects of summer wind and heat are a limiting factor on visitor use of Plan Area facilities and a safety issue. In winter, fog can limit access to the vicinity or certain locations within the Plan Area. In the case of windsurfing, wind creates a prime location for the sport, attracting users from many locales throughout the state. In contrast, it can also fuel a dangerous wildland fire, increasing its intensity and duration and the resources needed to control it. Climatic factors need to be considered in the use and management of visitor facilities and resource protection, and provided for in the design and planning of future activities.

**Goal RES-C1**

- Provide documentation and consider climatic data in the design and planning of visitor facilities and resource management tools and activities. Monitor potential effects of climate change over time.

*Guidelines*

- Continue to collaborate with Cal Fire to design vegetative buffers in and around visitor facilities to provide shade and wind blocks.
- Ensure that any wildland fire prevention planning uses the most accurate weather data collected onsite or in proximity to current conditions.
- Consider adding wind warning lights where feasible and warranted, and educate visitors about their use.
- Provide information about how to obtain wind and water level information.

#### *4.2.1.4 Hydrology/Water Quality (RES-WQ)*

The quality and quantity of surface water and runoff, groundwater, and natural hydrological patterns are integral to the Plan Area's physical health, particularly because most of the recreation is water based. Water quality is variable at the Plan Area and is conditioned upon the quality of the source water, the operational parameters and size of the reservoir, and the intensity and type of recreation activities. Much of the native flora and fauna depends on the surface and subsurface waters of the Plan Area. Fish-stocking programs provide fishing opportunities for anglers in the region. In turn, visitor use would decrease if water quality were reduced. Hydrologic function is related not only to activities that take place in the Plan Area but also to surrounding land uses, as the site contributes to the regional watershed and also receives runoff from adjacent parcels.

**Goal RES-WQ1**

- Ensure that existing, new, or increased visitor uses do not adversely affect water quality.

*Guidelines*

- If DWR water quality monitoring shows exceedances of state water quality standards that are clearly associated with visitor uses, suspend or limit the visitor uses until the water quality standards are met.

**Goal RES-WQ2**

- Avoid access to sensitive watercourses to prevent degradation related to trampling, surface runoff, and sedimentation.

*Guidelines*

- Provide key, well-marked visitor access points to wetlands and streams and provide interpretive signage to educate visitors about habitat sensitivity.
- Establish appropriate buffers and site-specific guidelines for siting future campsites and associated facilities away from wetlands and watercourses.
- Avoid trail crossings over riparian corridors, and build bridges over such crossings where essential.
- With existing and proposed horse-related facilities and uses, improve visitor education to reduce transport of pollutants from animal waste to wetlands and other watercourses.
- Provide native plantings for erosion control near degraded shorelines and riparian corridors.

**Goal RES-WQ3**

- Use water efficiently.

*Guidelines*

- Employ water-conserving design and fixtures in new construction, wherever possible.
- Use native plant materials where feasible and employ other water-conserving techniques for landscaping.

**Goal RES-WQ4**

- Design, construct, and maintain buildings, roads, trails, campsites, boat launches and marinas, and associated infrastructure to minimize stormwater runoff, promote groundwater recharge, and prevent soil erosion.

*Guidelines*

- Limit impervious surfaces to minimize runoff; consider the use of permeable materials for new or expanded pedestrian and vehicular surfaces.
- Schedule construction activities, particularly those resulting in substantial soil disturbance, during periods of low precipitation and low groundwater, when feasible, to reduce the risk of accidental hydrocarbon leaks or spills reaching surface and/or groundwater, to reduce the potential for soil contamination, and to minimize erosion of loose materials in construction areas.
- Use silt fences, sedimentation basins, and other control measures to reduce erosion, surface scouring, and discharge to water bodies.
- Consider seasonal requirements of aquatic plant and wildlife species, and plan any work that would result in shoreline alteration or riparian disturbance to avoid adverse impacts on these species where feasible.

#### *4.2.1.5 Vegetation (RES-V)*

The lack of vegetation data and sufficient monitoring contributes to limitations in planning and employing best management practices (BMPs) for long-term management of Plan Area resources. Issues such as grazing, wildland fire, invasive species, and knowledge of special-status species and communities need to be adequately addressed over the life of the Plan. Grazing has many incidental benefits to the land, such as fuel reduction and protection from wildfires, maintenance of diverse mixtures of grasslands and scrublands, and ongoing presence in remote areas that discourage trespassing and poaching. However, poor grazing practices can harm soils and vegetation and adversely affect reservoir water quality.

**Goal RES-V1**

- Protect, maintain, and, where appropriate, restore the site's locally and regionally important native plant communities.

*Guideline*

- Prepare a vegetation management statement and map.

- Identify tools and techniques to manage vegetation, and define areas requiring rehabilitation.

**Goal RES-V2**

- Document and protect special-status plants and communities and manage for their perpetuation and enhancement.

*Guidelines*

- Comply with both the CESA and ESA and other applicable regulations aimed at the protection of special-status plant species when planning and implementing projects or management programs.
- Enhance existing inventories to further document and map locations of special-status species.
- Encourage the continuation of research and seek partnerships with research institutions and regulatory agencies to protect and enhance special-status species.

**Goal RES-V3**

- Manage invasive and non-native species, and where feasible, restore the Plan Area's native grasslands.

*Guidelines*

- Identify invasive and exotic species in the Plan Area and prepare a vegetation management statement to manage and remove these species over time.
- Avoid planting non-native species. Use locally native species that are defined as indigenous to the Plan Area or closely surrounding areas where possible.
- Incorporate BMPs for native grassland rehabilitation in a vegetation management statement.
- Consult with experts and other agencies for information on the preservation of native grasslands.

**Goal RES-V5**

- Reduce the threat for wildland fire.

*Guidelines*

- Develop and implement a focused vegetation management statement that addresses wildland fire, consistent with the National Fire Plan.
- In collaboration with Cal Fire, monitor vegetative fuel loads using regional fire weather information and other fire ecology data to understand onsite fire danger.

**Goal RES-V6**

- Identify the most appropriate grazing practices that meet both federal and state policy guidelines and ensure sustainable grazing while protecting watershed conditions and habitats.

*Guidelines*

- Study and document the effects of grazing to better understand the potential effects and benefits of allowing grazing in the Plan Area.
- Conduct NEPA and CEQA analysis prior to renewal of the grazing lease if grazing continues at Medeiros Use Area.
- Study the potential for grazing to spread invasive exotic plant species.
- Develop a grazing-rest regime that prevents overgrazing and optimizes grassland health.

#### *4.2.1.6 Wildlife (RES-W)*

The large open, undeveloped lands within the Plan Area contribute to the regional biodiversity by providing habitat for a variety of special-status and other species. Existing data reveal the presence of certain species with specific requirements for long-term conservation. Wildlife management planning requires coordination and cooperation with other agencies, landowners, and stakeholders to include a regional approach and implementation. Additionally, coordination among Plan Area managing agencies is essential to wildlife habitat conservation work involving agencies with different missions.

**Goal RES-W1**

- Maintain, protect, and enhance wildlife habitat for common, sensitive, and special-status wildlife species.

*Guidelines*

- Continue to document and monitor wildlife species and their use patterns across the site.
- Minimize disturbance to critical wildlife habitat areas, including native grasslands, riparian, and native shoreline habitats.
- Before construction of facilities and trails, survey site-specific areas of potential impact for the presence of special-status species.
- Reduce wildlife access to human food and garbage by using wildlife-proof trash containers throughout the site, including administration and residence areas.
- Limit use of rodenticide to the minimum application possible, apply in accordance with state law and CSP policy, and explore using residential formulations that comply with 2011 USEPA requirements and offer increased protection for non-target wildlife (USEPA 2011b).
- Plan new facilities, land uses, and management activities to minimize habitat fragmentation.
- Explore opportunities that will enhance wildlife movement.

- Where necessary, evaluate special-status species in the Plan Area through focused surveys using USFWS protocol to manage for species protection and the development of a future protection program.
- Minimize potential impacts on special-status species through the maintenance of existing open corridor areas for passage.
- Avoid direct construction-related impacts to special-status species and species of special concern by doing preconstruction surveys where necessary.

**Goal RES-W2**

- Work with Plan Area stakeholders to provide for Plan Area-wide wildlife management planning and consistency with local and regional conservation strategies.

*Guidelines*

- Review facility plans to minimize habitat degradation and fragmentation.

#### *4.2.1.7 Aquatic Invasive Species (RES-A)*

Continued implementation of a vessel inspection program would reduce the potential for inadvertent transfer of invasive mussels via recreational watercraft. Ongoing public education such as the "Don't Move a Mussel" signs and handouts in the Plan Area will also be important in long-term prevention of invasive mussel infestations.

**Goal RES-A1**

- Implement measures to reduce the potential for introduction of invasive mussels from recreational watercraft.

*Guidelines*

- Seek funding to continue the current mandatory vessel inspections after the pilot program ends in October 2014 and thereafter as needed.
- If no funding is available after October 2014, implement a voluntary self-inspection program to meet the requirements of California Fish and Game Code Section 2302.
- Continue visitor education efforts about invasive mussels, how they are transported, and how an invasive mussel infestation can affect water quality, biotic resources, and recreation.

### 4.2.2 Visitor Experience, Interpretation and Education

The function of the Plan Area is primarily for mixed-use land and water-based recreation. VIS goals and guidelines provide management guidance for visitor use of recreation lands and the facilities that support that use, as well as the quality of the user experience. Additionally, CSP's mission for interpretation and education is to convey messages that initially help visitors value their experience, and ultimately foster a conservation ethic and promote a park constituency. Educational opportunities should be preserved and enhanced in the Plan Area,

offering activities that enable students to investigate, research, and participate in interactive learning. Based on the issues, opportunities, and constraints defined and described in Section 3.4, goals and guidelines are presented in this section under the following categories:

- Visitor Uses/Opportunities and Facilities (VIS-F)
- Trails (VIS-T)
- Interpretation and Education (VIS-I)
- Concession Opportunities (VIS-C)

#### *4.2.2.1 Visitor Uses/Opportunities and Facilities (VIS-F)*

Visitor facilities have been developed on the Plan Area lands since the 1970s, pursuant to the first General Plan. As the regional population has increased, the use of the facilities has also increased. Level of use varies in association with seasonal limitations such as weather and water level fluctuations. The Plan Area is the largest facility of its type within a short distance of the Bay Area and surrounding, rapidly growing communities. Similar water-based recreation is available at other Reclamation locations such as Millerton Lake, outside Fresno. Visitor use and facilities need to be planned and developed to accommodate growing populations while providing regional diversity and balancing the need to conserve natural and cultural resources. The adjacent Pacheco State Park provides uses that are not as prevalent in the Plan Area, including a trail network for hiking, horseback riding, and mountain biking. Henry Coe State Park, located northwest of the Plan Area, with an entrance near Morgan Hill, provides extensive hiking and backcountry camping.

**Goal VIS-F1**

- Maintain and provide new visitor facilities and uses that enhance recreational enjoyment of the site's history and character while avoiding resource degradation.

*Guidelines*

- Explore the opportunity for a visitor's center to orient and educate visitors to the site, as well as increasing other, self-guided interpretive facilities such as weather-proof displays and signage.
- Plan for recreational opportunities within a regional context and in coordination with other plans (e.g., the Millerton Lake Resource Management Plan, Pacheco State Park, and Merced County and Santa Clara County parks) so that facilities are balanced within the region and are compatible with the location and resources.
- Provide for a variety of day-use activities and overnight camping facilities that accommodate visitors of varying abilities.

**Goal VIS-F2**

- Provide adequate shoreline and upland support facilities and management at each reservoir and use area to address current and future demand for

permitted recreational uses, consistent with management zones and natural and cultural resource goals and guidelines.

*Guidelines*

- Ensure that campground and day use additions and improvements respond to and are prioritized based on user demand.
- Maintain aquatic safety education efforts.
- Upgrade, renovate, or reconfigure existing facilities (i.e., the existing boat ramp at Medeiros Use Area) to improve access and efficiency to alleviate demand during peak use.
- Design and locate new facilities to comply with ADA requirements where possible.
- Continue to allow hunting in portions of the Plan Area, consistent with Reclamation policy and DFG regulations. Continue to manage hunting in the vicinity of campgrounds, boat ramp dikes, and water structures in accordance with Reclamation and SRA policy. Continue to regulate hunting in conformance with DFG guidelines.

**Goal VIS-F3**

- Manage water surfaces and use areas to accommodate a variety of different user groups and minimize resource degradation and conflicts among users.

*Guidelines*

- Consider recreation use and demand data to determine the level of enforcement needed to reduce user conflicts in different locations within the Plan Area.
- Encourage boater safety through education and enforcement of regulations that will also enhance visitor experience.
- Resolve water surface use conflicts using a variety of methods, such as but not limited to seasonal and time-of-day restrictions and “no wake” or “reduced speed” zones.
- Optimize and coordinate water and land based recreational uses by development of a boating management plan.

#### *4.2.2.2 Trails (VIS-T)*

Trail use is a primary activity on areas adjacent and nearby public lands, including Pacheco State Park and DFG-managed wildlife areas. Opportunities exist to connect the Plan Area lands with these and other nearby public lands. Currently, there are gaps in trail connections that inhibit loop opportunities and access to certain areas. Water facility safety and security limit public access in some locations. A focused trails management plan would assist in the prioritization of trail use and facility needs for the future. The Plan Area contains many old, unpaved roads and trails that may provide opportunities for new use and linkages.

**Goal VIS-T1**

- Provide an appropriate amount and variety of trails in a range of locations throughout the Plan Area as well as improved connectivity from existing trails.

*Guidelines*

- Prepare a focused Plan Area trails management plan to identify future trail openings and connections and to determine single-use and multi-use options based on visitor experience and resource protection needs.
- Maintain a system of multi-use trails to meet visitor demand.

**Goal VIS-T2**

- Balance the optimum visitor experience while avoiding habitat fragmentation or other site degradation.

*Guidelines*

- Use BMPs to maintain trails and minimize erosion.
- Evaluate wildlife corridors to minimize or avoid placing trails that bisect these corridors.
- Review areas of the project that are currently not accessible to the public to determine where to place new trails or use existing trails to minimize new illegal trails.
- Evaluate cultural resources and review these locations during trail development to minimize degradation.
- Incorporate existing trails or old roads into the comprehensive plan whenever possible.

**Goal VIS-T3**

- Provide different types of trail experiences for a variety of trail users.

*Guidelines*

- Explore options for short- and long-duration loop trails for trail users.
- Explore the options to retrofit existing trails and build new trails that are ADA compliant.
- Work with trail users and analyze existing use to provide adequate facilities where needed.
- Link with adjacent lands at Pacheco State Park and DFG-managed lands.
- Explore using volunteer multi-use patrols for trail user education and trail safety, i.e., combine an equestrian and bicyclist on patrol.

**Goal VIS-T4**

- Provide additional programs and signage to allow for safer and more interpretive use of trails.

*Guideline*

- Where feasible, provide signage and public education program for safe use of multi-use trails.
- Supplement interpretive programs by adding additional interpretive signage at key locations for theme-based self-guided walks.

#### *4.2.2.3 Interpretation and Education (VIS-I)*

Interpretive and educational services improve the visitor experience by providing opportunities to learn about the natural and cultural resources of the area and by communicating the value of these resources to increase their protection and conservation. The location, history, and previous inhabitants of this area, as well as current resources and land uses, suggest many interpretive opportunities within the unit.

**Goal VIS-I1**

- Adopt the following unifying, primary and secondary themes for the unit.

**Plan Area Unifying Theme**

- The presence of water in this dry landscape and the nearby pass over the inner Coast Range have attracted humans and other animals to the Plan Area for millennia.

**Primary Theme 1**

- Water provides a wide variety of recreational opportunities.

*Guidelines*

- Explore how water provides specialized opportunities for recreation. Interpret the need for safety when recreating at this location.
- Interpret fishing opportunities at this location, including the high-quality large fish that are caught at San Luis Reservoir.
- Interpret how the water provides relief from the summer heat, and the importance of maintaining a high level of water quality.
- Interpret the wind and the role it plays in providing a high-quality windsurfing location.
- Interpret how wind can create dangerous conditions.
- Interpret the wind warning light system and how visitors can use it.
- Interpret other forms of active and passive recreation that occur at the Plan Area, such as picnicking, camping, and hiking.
- Interpret how water safety is integral to enjoying the water for recreation purposes.

**Secondary Theme 1**

- The need for water in drier parts of California prompted the development of the federal CVP, including the three reservoirs of the Plan Area.

*Guidelines*

- Consider partnerships with DWR to optimize the use of the Romero Visitor's Center and other water operation facilities for interpretive purposes, with DWR responsible for the bulk of the interpretation of the CVP and California Aqueduct.
- Interpret the roles of San Luis Reservoir, Los Banos Creek Reservoir, and O'Neill Forebay in the CVP and California Aqueduct.
- Interpret how the water is used for irrigation, drinking water, and generation of electricity.
- Consider partnership with the SCVWD to describe their use of San Luis Reservoir water, the methods for retrieving and distributing the water, and the importance of maintaining high water quality.
- Interpret the construction of the dam, including Basalt Quarry, and the effects of geology on the dam.

**Secondary Theme 2**

- Year-round water sources and nearby Pacheco Pass have had a direct and continuing impact on human movement through and settlement in the area, and reminders still remain of earlier human use.

*Guidelines*

- Interpret the use of Los Banos Creek and other local water sources by Northern Valley Yokuts and other Native American groups.
- Interpret the Spanish missionaries' "Path of the Padres" along Los Banos Creek.
- Interpret the use of the route through the Plan Area and over Pacheco Pass by Native Americans, early Spanish and Euro-American travelers, the subsequent roads and state highway that followed this route until the dam required a bypass, and the remains of the old trails and roads that still exist.
- In conjunction with Pacheco State Park, interpret the broad flat valley and watering hole that existed where San Luis Reservoir and O'Neill Forebay are now located, as well as the Pacheco family's Rancho San Luis Gonzaga that included this valley for over 100 years.
- Interpret the visible cultural resources that still exist in the Plan Area from ranching and farming activities.

**Secondary Theme 3**

- Of the plants and animals found in the Plan Area, some have lived there since before the reservoirs were built, some have moved into the area because of the reservoirs, and others have been purposefully or inadvertently introduced by humans.

*Guidelines*

- Interpret the native plant and animal species that live in and around the Plan Area, the impact (if any) of the reservoirs on them, and how many are adapted to the dry conditions of the western San Joaquin Valley.
- Interpret the sport fish that have been planted in the reservoirs, and how they are raised and stocked.
- Interpret plant and animal species that humans have introduced to the reservoirs and surrounding land by accident (e.g., fish pumped up from the California Aqueduct and DMC, non-native plants brought in on fur or feed).
- Interpret the additional resources for migrating birds that the reservoirs have added to the Pacific Flyway.

**Secondary Theme 4**

- Weather patterns impact the natural and built environment.

*Guidelines*

- Interpret the factors that affect wind direction and speed in these locations.
- Interpret how the Coast Range and Pacheco Pass affect the weather, especially the Coast Range's rain shadow effect, and windspeed and air temperature in the area directly east of the pass.
- Interpret the way weather patterns such as winter tule fog, low average annual rain fall, summer heat, and high winds shape the landscape.
- In partnership with Pacheco State Park, interpret the benefits and unresolved issues regarding wind-generated energy.

**Goal VIS-I2**

- Adopt the following interpretive periods for the unit.

**Interpretive Periods**

- Primary Interpretive Period—1919-1967.
  This period encompasses the CVP's planning and implementation, from initial concept through the construction and filling of San Luis Reservoir, Los Banos Creek Reservoir, and O'Neill Forebay.
- Secondary Interpretive Period—Northern Valley Yokuts: 1772-1833.
  Pre-contact is c. 5000 BP to 1805, when Gabriel Moraga made his first foray into this section of the Central Valley. In 1833 the groups in this area were wiped out by an epidemic.
- Secondary Interpretive Period—the Path of the Padres: 1797-1835.
  Mission San Juan Bautista was founded in 1797. Some time after 1805, the padres started using the route that includes the "Path of the Padres" to cross the inner Coast Range and bring Central Valley Native Americans back to the mission. Mission San Juan Bautista was reclassified to a local church in 1835.

- Secondary Interpretive Period—Rancho San Luis Gonzaga: 1843-1962. This period starts with the granting of the land to the Pacheco family, through the final loss of the valley via condemnation under eminent domain to build the dam.

**Goal VIS-I3**

- Prepare an interpretive plan in order to provide a variety of interpretive and educational services that celebrate the Plan Area, the region's cultural history, and its unique and representative natural resources.

*Guidelines*

- Pursue enhancement of interpretive opportunities with a mix of programs (such as guided tours, campfire programs, lectures, school field trips, or other similar programs), media (such as publications and audio-visual programs) and facilities (such as interpretive signage, outdoor exhibits, Basalt Quarry, visitor's center and other similar venues).
- Consider partnerships with DWR to optimize the use of the Romero Visitor's Center and other water operation facilities for interpretive purposes.

#### *4.2.2.4 Concession Opportunities (VIS-C)*

**Goal VIS-C1**

- Provide concession opportunities that support the purpose and vision for the Plan Area and enhance the visitor experience.

*Guidelines*

- Identify concessions that add to the capacity of Plan Area staff and clearly implement desired visitor programs beyond what CSP is capable of achieving.
- While considering the needs of recreational user groups and concessionaires, craft concession plans that are based on visitor use and demand and that serve a viable population.
- Choose concessions that best exemplify the character and needs of the use area and enhance the ability to provide a quality visitor experience while meeting other Plan goals.

### 4.2.3 Local and Regional Planning

Local and regional planning encompasses coordination and cooperation with landowners, advisory boards, regulatory agencies, and municipalities in the vicinity of the Plan Area. The land around the Plan Area and visitors to the facilities and in the region are continually changing and can affect the use and condition of the Plan Area. Issues and topics related to local and regional planning are defined and described in Chapter 3 and are presented in this section under the following categories:

- Interagency Cooperation (REG-C)
- Regional Plans (REG-P)
- Population and Demographics (REG-D)
- Linkages (REG-L)

#### *4.2.3.1 Interagency Cooperation (REG-C)*

Outreach to and cooperation with sister agencies, adjacent landowners, and recreational user groups can greatly benefit the Plan Area and its activities. Resource management implementation can be aided by sharing staff resources among different agencies and volunteers. Issues that may be relevant to residents and land use in the Plan Area vicinity, as well as regulatory requirements, can be clarified early in the process with continued public outreach.

**Goal REG-C1**

- Develop cooperative relationships with adjacent landowners, and local, state, and federal agencies (including Reclamation, CSP, DFG and DWR) to share resources and coordinate implementation of Plan Area management actions.

*Guidelines*

- Continue to work with California Department of Forestry and Fire Protection (Cal Fire) for emergency, rescue, fire, or other incidents requiring mutual aid.
- Continue the regular forum of information exchange initiated in the planning process so that appropriate agencies are aware of issues and projects and how they affect Plan Area resources and facilities.

#### *4.2.3.2 Regional Plans (REG-P)*

There are many efforts to accommodate the continuing population growth in the region, which are being documented in a variety of plans by local and state agencies. Additionally, many surrounding privately owned parcels are being subdivided and developed. Overlapping planning efforts can cause oversight of important issues relevant to Plan Area planning, and surrounding land uses can greatly influence management and operations. There are also regional planning efforts that require continued information exchange to ensure they are coordinated with Plan Area visitation and plan implementation.

**Goal REG-P1**

- Provide information to local governments on regional planning initiatives and surrounding development to assist in making them consistent with the Plan Area purpose and vision.

*Guidelines*

- As staff time allows, regularly review applications to Merced or Santa Clara County for development in the vicinity of the Plan Area and

coordinate planning for common features such as access roads and related infrastructure.

- Review and comment where applicable on Merced or Santa Clara County General Plan updates and regional projects such as the high-speed rail and other future projects.

#### *4.2.3.3 Population and Demographics (REG-D)*

Lack of detailed visitor attendance data can inhibit the planning of facilities and the anticipation of staffing needs and operations. The location of the Plan Area serves coastal as well as Central Valley residents with varying recreational desires and abilities. Following the regional and local population and demographic data, documenting this information, and collecting visitor profiles will aid in future management of the recreational resources.

**Goal REG-D1**

- Consider visitor use data and apply the appropriate regional population and demographic information as it applies to design and construction in planning and construction projects in the Plan Area.

*Guidelines*

- Where feasible, enhance current visitor attendance data collection efforts to include more detail about visitor use, duration, satisfaction, volumes, and seasonality of visitation.
- Follow regional population and demographic reports such as the U.S. Census and countywide projections to ascertain future visitor needs and priorities.

#### *4.2.3.4 Linkages (REG-L)*

There is an opportunity for open-space and recreational linkages between the Plan Area and the adjacent Pacheco SP, and between the Plan Area and the nearby DFG lands, as well as opportunities for better connections to Los Banos Creek Use Area. Also, given the land uses on adjacent parcels, there may be an opportunity to connect undeveloped lands with the Plan Area for trail linkages or wildlife corridors.

**Goal REG-L1**

- Explore the possibility for Plan Area users to connect with adjacent and regional preserved lands, namely the adjacent Pacheco State Park, San Luis Wildlife Area (DFG), and Los Banos Creek Use Area.

*Guidelines*

- Work with appropriate planners to consider interconnected open-space systems, where possible, in the vicinity of the Plan Area.
- Coordinate trail planning work with Pacheco State Park and DFG.

### 4.2.4 Infrastructure and Operations

Infrastructure and operations are at the core of a functional unit and are integral to meeting the Plan Area purpose and vision and managing resources and visitor uses. Because future staffing and management structures may change, interagency and intra-district cooperation and sharing of personnel and resources can make it easier to ensure efficient operations and up-to-date infrastructure. Existing infrastructure and operations are described in Chapters 2 and 3 and are presented in this section under the following categories:

- Plan Area Access and Circulation (OPS-A)
- Management Agreements (OPS-M)
- Staffing and Facilities (OPS-S)
- Utilities (OPS-U)
- Sustainability and Renewable Energy (OPS-RE)

#### *4.2.4.1 Plan Area Access and Circulation (OPS-A)*

The various access points for all the use areas pose issues for safety, security, and staff efficiency, including emergency incidents. The distance to Los Banos Creek Use Area greatly reduces response time and onsite staff presence. Opportunities exist to work with Caltrans to formulate short- and long-term planning for improving access, including the crossing of SR 152. As visitor use increases, the level of service on SR 152 will be further reduced, and traffic on area collector roads will increase. Internal circulation and parking currently functions well; however, this may need to be reviewed as use increases. Staff and visitor access and circulation needs to be coordinated and maintained to optimize efficiency, security, emergency access, and enjoyment of the Plan Area while providing for resource protection.

**Goal OPS-A1**

- Provide safe, well-signed, and efficient ingress and egress to existing use areas, while meeting other Plan goals.

*Guidelines*

- Work with Caltrans to identify safety and signage improvements that can be made and recommend incorporation into regional transportation plans and budgets.
- Work with Caltrans to identify safety and access improvements, such as consideration of an overpass at the entry of the San Luis Creek Use Area with limited access from Gonzaga Road.
- Work with Caltrans to explore improved access routes between SR 152 and Basalt Use Area, and between SR 152 and San Luis Creek Use Area.
- Explore the opportunity to access Los Banos Creek Use Area from an internal road off of Gonzaga Road or a limited access service road off Interstate 5 (I-5).

**Goal OPS-A2**

- Provide adequate emergency access to new facilities or backcountry areas and reservoirs as necessary.

*Guideline*

- Work with surrounding landowners to clarify the ownership and location of adjacent offsite roads and the possibility to use these if needed. Provide emergency access for Plan Area staff members and entities such as Cal Fire for wildland fire access and other such uses.

**Goal OPS-A3**

- Provide well-defined, safe use area entry points capable of handling visitors and a variety of vehicles during peak-use days and all seasons.

*Guideline*

- Design improvements with up-to-date standards capable of handling current and future vehicular and safety needs.

**Goal OPS-A4**

- Provide well-defined visitor access to all use areas with clear, consistent signage (e.g., branding standards and visual identity).

*Guidelines*

- Maintain and develop clear signage with a unified design for visitor access and orientation throughout the Plan Area.
- Provide ADA-compliant facilities and recreational use access (e.g., trails) where practicable based on the site conditions.

#### *4.2.4.2 Management Agreements (OPS-M)*

Reclamation holds and maintains many agreements with different agencies to manage its lands and waters for distribution and with utility companies to maintain rights-of-way as needed. The agreement with CSP is essential to provide long-term continuity in recreation and resource management at this location. Original agreements date back several decades and may not reflect current on-the-ground conditions or legal requirements.

**Goal OPS-M1**

- Ensure that management and other agreements reflect the current conditions of the Plan Area and meet the Plan goals and guidelines.

*Guidelines*

- Review all management and other agreements to update, renew, or revise for compatibility with current needs and consistency with the Plan.
- Ensure that the language of agreements fits current management conditions and allows for joint Plan implementation.

- Ensure agreements require that both agencies meet regulatory requirements for changes, alterations, or additions to any structures and other proposed actions.

**Goal OPS-M2**

- Work with the SCVWD to ensure that construction, maintenance, or other work related to their water distribution system does not interfere with Plan Area operations, or significantly affect resources or recreational use operations.

*Guideline*

- Set up a MOU to ensure that future construction, maintenance, and implementation of the San Luis Reservoir Low-Point Improvement Project and other similar projects will minimize impacts on recreation.

#### *4.2.4.3 Staffing and Facilities (OPS-S)*

Efficient Plan Area operations require adequate staffing and associated facilities. The size and proximity of the different use areas make it difficult to provide adequate operational facilities throughout the Plan Area. Emergency and safety needs can assist in prioritizing the type and location of new facilities. New and updated facilities, improvements, and operations allow for integration of sustainable design and materials. The identification of long-term needs and plans for staff operations will prevent costly, piecemeal development.

**Goal OPS-S1**

- Provide permanent staff housing opportunities as needed to meet public safety needs at San Luis Reservoir and other areas within the Plan Area.

*Guidelines*

- Inspect current staff housing, upgrade as necessary (electrical, plumbing, etc.), and seek opportunities for new housing locations, consistent with federal regulations.
- Ensure adequate office space, housing, and ranger station with maintenance workspace at Los Banos Creek Use Area to provide self-contained, onsite management and enforcement.
- Identify opportunities for providing housing or other needs that would attract and provide for researchers and seasonal workers.

**Goal OPS-S2**

- Provide staff training programs as necessary to inform managers of current laws and regulations that need to be complied with for Plan Area management.

*Guidelines*

- Develop an integrated pest management plan as per current state and federal standards to record and document practices related to pest management.
- Monitor Plan implementation requirements and future construction projects.

**Goal OPS-S3**

- Pursue adequate staffing to meet public safety, management, interpretation, facility maintenance, and resource protection needs.

*Guidelines*

- Evaluate and adjust staffing needs when planning existing and new programs.
- Explore the use of volunteers to complement the staff where feasible.

#### *4.2.4.4 Utilities (OPS-U)*

Utility infrastructure is generally adequate for the current facilities and uses. There are limitations for water distribution in some locations as well as lighting improvements needed in some areas. There is no comprehensive plan documenting the existing, as-built utility network or its adequacy within the Plan Area. Improvements to existing facilities and new projects will require an understanding of the utility needs to determine their feasibility and cost.

**Goal OPS-U1**

- Ensure the continuance of long-term infrastructure function of the Plan Area.

*Guidelines*

- Devise a strategic plan for the installation of a water distribution system in areas such as Medeiros Use Area in collaboration with the Santa Nella County Water District.
- Identify other utility needs and implement utility improvements comprehensively to avoid unnecessary site disturbance and expensive rerouting of utility corridors and junctions over time.

#### *4.2.4.5 Sustainability and Renewable Energy (OPS-RE)*

The opportunity exists to incorporate sustainability principles into both existing and potential future Plan Area facilities, activities, and operations and maintenance. In addition, Reclamation has identified approximately 1,200 acres of federal lands in the Plan Area as potentially viable for renewable energy development.

**Goal OPS-RE1**

- To the extent feasible, incorporate principles and practices of sustainability into the Plan Area's facilities, improvements, and

maintenance and operations, including solar and other carbon-reducing measures.

*Guidelines*

- To the extent feasible, consider sustainable practices in building and site design, construction and maintenance, and operations. Sustainable principles used in design and management emphasize environmental sensitivity in construction, the use of nontoxic materials and renewable resources, resource conservation, recycling, and energy efficiency such as solar power.
- Consult programs such as LEED (Leadership in Energy and Environmental Design) for development of facilities and site-related construction as a guide to sustainable building practices.

**Goal OPS-RE2**

- Allow for consideration and development of renewable energy projects within the Plan Area.

*Guidelines*

- Work with other federal, state, and local agencies and public and private energy providers to explore locations and feasibility of Plan Area renewable energy projects.

### 4.2.5 Water Operations

Water operations are managed by DWR and are the primary purpose of the existing facilities, particularly the reservoirs. Water-level fluctuations are the result of water and energy demand based on climate and the seasons. Safety and security are essential components of water operations and energy production, and must be considered. Water-dependent recreational opportunities can change based on water levels, and thus increase or reduce visitor experience. Certain facilities such as boat launches require staff intensive labor to respond to changes in water levels. Existing water operations issues, opportunities, and constraints are described in Section 3.4 and are presented in this section under the following categories:

- Water Level Fluctuations (WA-E)
- Restriction of Access to Dams and Power Facilities (WA-A)

#### *4.2.5.1 Water Level Fluctuations (WA-E)*

Constraints in water levels can severely inhibit user ability and enjoyment, create user safety issues, change the biological composition of the shoreline, and result in water quality degradation (from exposure of sediment to wind and rain). Weedy vegetation can be controlled and managed to prevent encroachment into open pool areas. Sediment deposition is dependent on water flow as well as water level and can cause safety issues for use in certain areas.

**Goal WA-E1**

- Explore opportunities and actions that can reduce the impacts of water-level fluctuations to help maintain consistent conditions for water-based users.

*Guidelines*

- Examine the possibility of removing built-up sediment to maintain water levels even during times of peak water demand.
- Work with agencies and appropriate groups to explore methods to reduce and remove weedy vegetation from inhabiting water surfaces.

#### *4.2.5.2 Restriction of Access to Dams and Power Facilities (WA-A)*

Recreational use areas are interspersed throughout the Plan Area among a variety of water operation-related facilities. It is not always clear what areas are open to the public, and some areas are not secured for nonpublic access. Safety and security need to be enforced and visitors need to be kept informed of the importance of adhering to access restrictions.

**Goal WA-A1**

- Work with agencies to clarify visitor access in all areas, compatible with state and federal safety and security requirements.

*Guidelines*

- If public access is to be limited or not permitted, ensure proper signage, fencing, or other means to convey this information to visitors.
- Identify areas requiring additional security improvements to assist managers in enforcing access.
- Determine areas where jurisdiction is not clear and define the roles of the managing agencies.
- Set up standard operating procedures between Reclamation and the managing agencies to enhance operations and efficiency.

## 4.3 Management Zones

Management zones are geographic divisions that have distinct physical, social, and management characteristics. The creation of management zones helps Plan Area managers to focus activities and facilities in locations that are environmentally and logistically suitable. Management zones provide a basis for the direction of the type and intensity of development and use within each area.

Current management zones have been identified for various portions of the Plan Area. Future zones will vary depending on the alternative selected and the management actions taken for those alternatives. These zones, and the actions associated with them, are not intended to provide all activities for all users.

Rather, the Plan Area, when viewed with other lakes and reservoirs in the vicinity, can provide an opportunity for unique management actions.

Note that the designation of allowable uses in different management zones of the Plan Area does not require that the allowable uses be implemented. In particular, the management zones only indicate what lands are suitable for different recreation activities; it does not require the activities to be implemented, facilitated, or encouraged.

Map 8 illustrates the existing Plan Area management zones. The proposed zones for the Plan Area are divided into water- and land-based facilities and uses as follows:

**Water-Based Management Zones**

- Suburban (S)
- Rural Developed (RD)
- Rural Natural (RN)

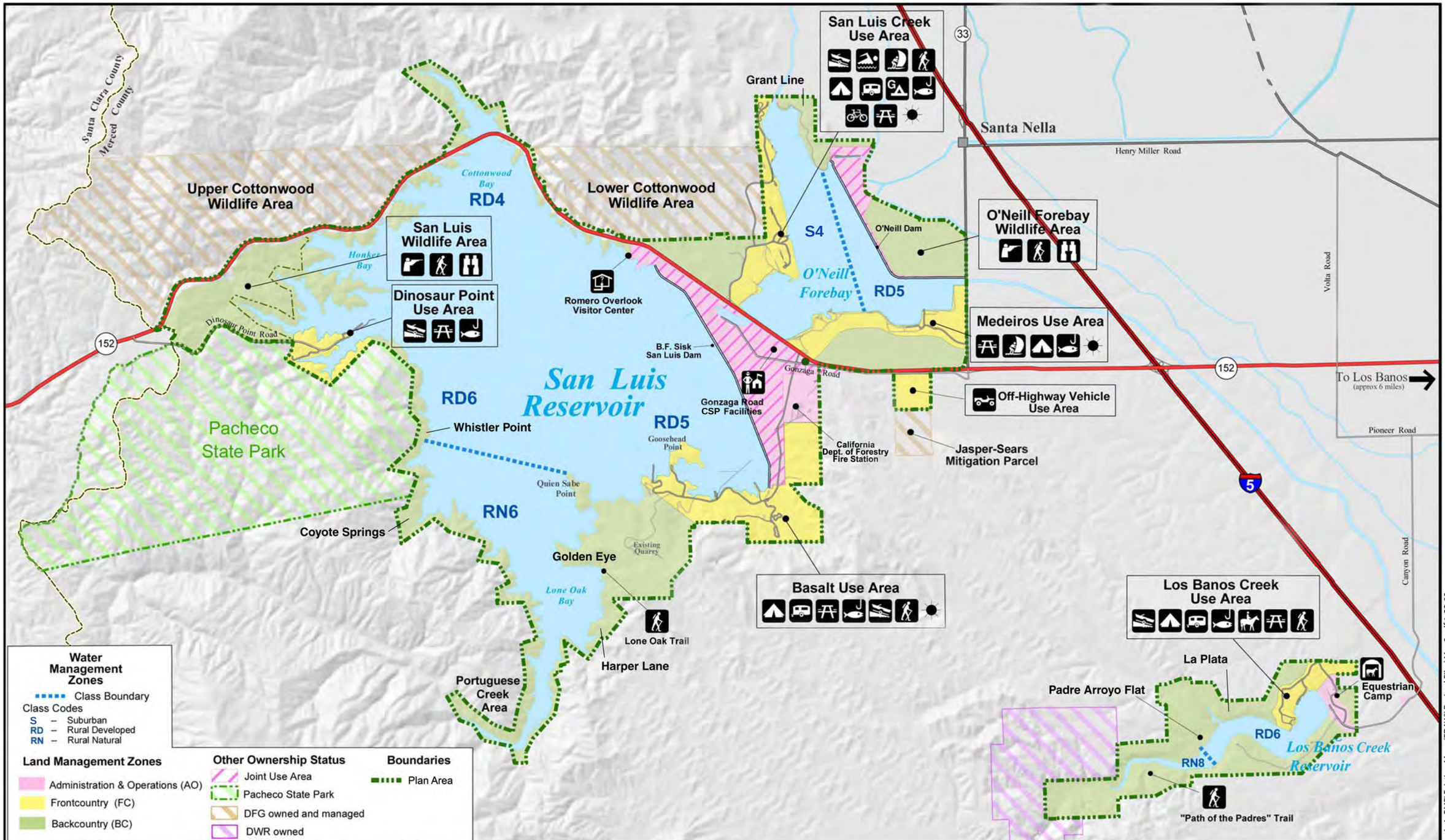
**Land-Based Management Zones**

- Administration and Operations (AO)
- Frontcountry (FC)
- Backcountry (BC)

This Plan uses the Water Recreation Opportunity Spectrum (WROS) management tool (Aukerman et al. 2003) to identify water-based management zones. The WROS provides detailed guidance for the management of lakes, reservoirs, wetlands, estuaries, bays, rivers, tidal basins, coastal zone areas, and other water and land-related areas. The primary purpose of the WROS is to help recreation and resource professionals make better decisions about the recreation use and management of lakes, reservoirs, and other water bodies. The WROS is a tool to inventory, plan, and manage water recreation resources. In addition, the WROS can accommodate changes in public recreation demand and values, best available science, social and economic values and circumstances, and professional experience and knowledge gained from applying this system over time.

The WROS is based on the concept that there is diversity among recreationists, water resource settings, and the agencies that manage these resources. Each specific water resource has a niche and contributes to a larger system of diverse recreation opportunities. The overarching goal of WROS is to provide planners and managers with a framework and procedure for making better decisions for conserving a spectrum of high-quality and diverse water recreation opportunities (Aukerman and Haas 2002).

WROS represents a spectrum of six types of water recreation opportunities:




Source: USGS DRG

1 0.5 0 1 2 Miles

Scale 1 : 79,200
1" = 1.25 miles

N

**Existing Recreation Resources and Uses**

**Facilities**
- Ranger Station
- Visitor Center
- Wind Warning Light

**Camping**
- Tenting
- Recreational Vehicle
- Group Site
- Horse Camping

**Recreation Uses and Activities**
- Boat Launch
- Windsurfing
- Swimming
- Fishing
- Hunting
- Equestrian
- Bicycling
- Off-Highway Vehicle
- Wildlife Viewing
- Hiking
- Day Use

U.S. DEPARTMENT OF THE INTERIOR BUREAU OF RECLAMATION

CALIFORNIA STATE PARKS

**San Luis Reservoir State Recreation Area**

**MAP 8**
**Existing Conditions and Alternative 1**

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| U | S | RD | RN | SP | P |
|---|---|---|---|---|---|
| Urban | Suburban | Rural Developed | Rural Natural | Semi Primitive | Primitive |

The recreation opportunities range from a highly social experience involving many diverse visitors in a highly developed urban environment (i.e., urban) to a solitude experience with few people, if any, in a remote primitive setting with no built structures and little management presence (i.e., primitive).

The Plan Area currently falls into the Suburban, Rural Developed, and Rural Natural parts of the WROS spectrum, which are described further below.

In **Suburban** (S) areas, built structures are common, and dams, other water infrastructure, and roadways are prominent in the viewshed. There is a limited opportunity to see, hear, or smell natural resources due to the widespread and very prevalent level of development, human activity, and natural resource modification. The watching and meeting of other visitors is expected and desired, and socializing with family and friends is important. Learning about the natural or cultural history, ecology, and reservoir and river operations are important to some. Recreation management in the form of personnel, rules, facilities, signs, services, conveniences, and security is very evident.

In **Rural Developed** (RD) areas, development is also prevalent, but the setting has a pastoral feel because views of development are interspersed with expanses of water and rolling hills. The water's edge appears natural despite the presence of water control or other structures. Built structures are noticeable, and dams, other water infrastructure, and roadways are present in the viewshed but in some cases at a greater distance than in the S Zone. Sights, sounds, and smells of other recreation users are common, but there are opportunities to experience brief periods of solitude. Reminders of alteration of natural resources by human activity, technology, and development are frequent. Recreation management (personnel, rules, signs, etc.) is common but not as extensive as in a suburban setting. The sights, sounds, and smells of recreation and nonrecreation use are common but interspersed with locations and times when a sense of tranquility and escape from everyday challenges may be experienced.

**Rural Natural** (RN) areas have natural resources that dominate the landscape with occasional sights, sounds, and smells of development. The reservoirs are bordered by natural-looking settings with occasional water control or other structures along the shoreline. Built structures are present in the viewshed. Recreation management is occasionally noticeable in terms of patrols, facilities, signage, conveniences, and services. The opportunity to relieve stress and to get away from a built environment is important. Moments of solitude, tranquility, and nature appreciation are important. RN areas attract visitors desiring to experience the outdoors and be away from large numbers of other people.

The WROS rates three key attributes—physical, social (visitor use), and managerial—to further classify recreational water bodies for the purpose of

developing current and future management strategies. The key attributes are then used to develop a single alphanumeric rating to describe the overall character of a water surface area. The rating system incorporates the water recreation opportunities abbreviations shown above (U, S, RD, RN, SP, and P) along with a number between 1 and 11, which correspond to the water recreation opportunities abbreviations as follows:

| Scale | WROS Class |
|---|---|
| 1 – 2 | Urban |
| 2 – 3 – 4 | Suburban |
| 4 – 5 – 6 | Rural Developed |
| 6 – 7 – 8 | Rural Natural |
| 8 – 9 – 10 | Semiprimitive |
| 10 – 11 | Primitive |

The 11-point scale allows for a finer level of assessment than a six-point scale (U, S, RD, RN, SP, and P) and identifies areas where there are transitions, gradations, or "leanings" toward one WROS class versus another. The 11-point scale allows for a higher level of accuracy during the inventory stage and helps managers to consider alternative ways to manage the area in the future. In the Plan Area, the numeric ratings indicate subtle distinctions among physical, social, and managerial attributes within different parts of the same waterbody, such as San Luis Reservoir (see Map 8).

The WROS designations were made based on site visits and inventories conducted during the planning period. Existing WROS conditions were characterized primarily during the development of the *WROS Inventory and Management Alternatives* report in 2003 and 2004 (Aukerman, Haas, and Schuster 2008). Conditions were reassessed and updated management zones were assigned by alternative during field visits by CSP, Reclamation, and consultant staff in May and June 2011.

In addition to the WROS designations for water-based management zones, three additional designations have been assigned for land-based management zones. These zones reflect management areas that exist now (such as operations vs. recreation) and are intended to help focus future facilities and uses in appropriate areas. The land-based management zones are intended to "dovetail" appropriate facilities and uses with adjacent WROS zones. These management zones are the same as those used in CSP's General Plan for Pacheco State Park (CSP 2004).

Sections 4.3.1 through 4.3.6 describe each management zone's unique characteristics and the key existing features that are intended to be considered and incorporated into Plan implementation. Natural and cultural resources exist in all zones within the Plan Area and, as described below, will be protected and managed as part of the future development. For each management zone, the definition includes the following description:

- Existing Features
- Purpose and Intent
- Resource Goals
- Use

### 4.3.1 Suburban Zone (S)

#### *4.3.1.1 Existing Features*

The Plan Area contains one zone designated as Suburban (S4): the western side of O'Neill Forebay (shown in Map 8).

O'Neill Forebay consists of about 2,210 water surface acres and 14 miles of shoreline, of which 1,468 acres are designated as S4. This rating indicates high WROS inventory scores for the area's physical and social attributes, as the zone contains the most users of all three waterbodies in the Plan Area. The open pool configuration is suitable for active water sports such as water skiing and windsurfing. It is accessible primarily from San Luis Creek Use Area on the west side of the forebay (location of a boat launch, several access points, and a swimming beach near the day use areas and campgrounds). It is also accessible from Medeiros Use Area, where windsurfers launch in the southeastern corner of the forebay.

Dominant features of the forebay landscape include the wide and massive towers supporting power lines crossing the water about midway between SR 152 and the dam. In contrast to the active uses, hard edges, and views of the highway, O'Neill Forebay also provides some quiet and secluded shoreline areas, some accessible only by boat or non-motorized trails.

#### *4.3.1.2 Purpose and Intent*

The purpose of the S Zone is to provide the most diverse activities among the three waterbodies in the Plan Area, while complementing land-based facilities. There is a limited opportunity to see, hear, or smell the natural resources due to the widespread and prevalent level of development, human activity, and natural resource modification. The watching and meeting of other visitors is expected and desired, and socializing with family and friends is important. Learning about the natural or cultural history, ecology, and reservoir and river operations is important to some.

Although the water surface is zoned for active use, it is adjacent to shorelines that will have different uses based on their locations and zone designations (particularly the BC Zone to the north). Use of the O'Neill Forebay S Zone will be greater than at San Luis and Los Banos Creek reservoirs. It is intended to allow for active uses such as personal watercraft; however, these uses will be limited by various constraints such as speed limit.

#### *4.3.1.3 Resource Goals*

Water quality is the most important resource issue in this zone. Currently, water quality monitoring is conducted on a regular basis at O'Neill Forebay. The large

turnover of water through the forebay helps maintain the water quality. The existing fisheries are dependent on high water quality and an acceptable temperature range, which varies by species. If recreational fishing is to be maintained, the habitat of existing fish species will need to be managed and monitored.

#### *4.3.1.4 Water Use*

This area is the prime windsurfing launching area due to favorable wind speed and direction; however, limitations from the fluctuating water level and weedy vegetation in the water curtail more extensive windsurfing activity. Windsurfers also drive close to the water, near the southeastern shore, to set up camp, launch equipment, and use the shoreline to patrol their windsurfing peers in the water. Due to fluctuations in water levels, use will be more limited at San Luis Reservoir than at the forebay.

Activities in the S Zone will include fishing, swimming, boating, personal watercraft, water skiing, and non-motorized boating and windsurfing. In S Zones, the target boat capacity (for boats on the water at any one time) is between 10 acres per boat and 20 acres per boat.

### 4.3.2 Rural Developed Zone (RD)

#### *4.3.2.1 Existing Features*

The Plan Area contains three zones designated as Rural Developed: the northern end of San Luis Reservoir, roughly north of Quien Sabe Point; the eastern side of O'Neill Forebay; and the eastern side of Los Banos Creek Reservoir (shown in Map 8).

San Luis Reservoir consists of about 12,975 water surface acres, of which 10,612 acres are designated as RD Zones: RD4 for Dinosaur Point, RD5 for Basalt Bay (north of Basalt Use Area), and RD6 for Cottonwood Bay. This zone is accessible primarily from Basalt Use Area on the southeastern side of the reservoir (location of boat launch and several access points) and Dinosaur Point Use Area (location of a boat ramp). The reservoir has such an open and large pool that wind and hot sun can severely limit use of this water surface in the summer. The shoreline is irregular and steep in some locations. The large open expanse dominates the landscape, and the scale of the water surface can visually dwarf a small fishing boat. At low water levels, the large dam at the northeast face is exposed, further providing a sense of power and dominance. Certain locations in the reservoir have views of SR 152. However, most views to the east and south are of water and undeveloped landscape.

O'Neill Forebay consists of about 2,210 water surface acres and 14 miles of shoreline, of which 740 acres are designated as RD5. It is mostly an open pool with engineered edges at the dam and is suitable for active water sports such as water skiing and windsurfing. This zone is accessible from the Medeiros Use Area (location of an old boat ramp and the natural shoreline, where campers set

up to fish or be near to the water). The southern edge, adjacent to the Medeiros Use Area, has informal tent and RV campsites and day use areas.

Los Banos Creek Reservoir consists of about 485 water surface acres, of which 402 acres are designated as RD6. This zone is accessible from the Los Banos Creek Use Area and contains the boat launch area and campground. The reservoir is oriented generally northeasterly to southwesterly with a curvilinear shoreline, so the largest pool area is immediately behind the dam in the north.

#### *4.3.2.2 Purpose and Intent*

The purpose of the RD Zone is to provide a recreation experience that is less primitive and passive and offers more visitor amenities than the RN Zones at San Luis and Los Banos Creek Reservoirs. The RD Zone provides occasional or periodic opportunities to see, hear, or smell the natural resources due to the common and frequent level of development, human activity, and natural resource modification. The area is less developed and more tranquil than an S Zone (which is described in Section 4.3.1), and the opportunity to experience brief periods of solitude and change from everyday sights and sounds is important.

#### *4.3.2.3 Resource Goals*

Water quality is the most important resource issue in this zone. Currently, DWR conducts water quality monitoring on a regular basis at San Luis Reservoir and O'Neill Forebay. The existing fisheries require high water quality and an acceptable temperature range, depending on the species. If recreational fishing is to be maintained, the habitat of existing fish species will need to be managed and monitored. The authority to manage fish and wildlife in California is relegated to the DFG.

#### *4.3.2.4 Water Use*

Due to wind limitations as well as water level fluctuations during certain times of the year, use of San Luis Reservoir will be more limited than at O'Neill Forebay; however, it will be more active than Los Banos Creek Reservoir. Activities in the RD Zone will include fishing, boating, personal watercraft use, water skiing outside of designated no-ski zones, and non-motorized boating. Boating and personal watercraft use in observance of speed limits is allowed at all reservoirs. Swimming and non-motorized boating will be permitted in this zone. In RD Zones, the target boat capacity (for boats on the water at any one time) is between 20 acres per boat and 50 acres per boat.

### 4.3.3 Rural Natural Zone (RN)

#### *4.3.3.1 Existing Features*

The Plan Area contains two zones designated as Rural Natural: the southern end of San Luis Reservoir, roughly south of Quien Sabe Point (RN6); and the western side of Los Banos Reservoir (RN8; shown in Map 8).

San Luis Reservoir consists of about 12,967 water surface acres and 65 miles of shoreline, of which 2,355 acres are designated as an RN Zone based on the

WROS system. The RN Zone is accessible primarily through the Basalt Use Area on the southeastern side of the reservoir (location of boat launch and several access points) and Dinosaur Point Use Area (location of a boat ramp). The shoreline in the RN Zone is irregular and steep in some locations and consists of cove-like surfaces used for fishing. Basalt Quarry is visible from some portions of the RN Zone. The natural shoreline of the reservoir in the RN Zone provides more enclosure and less open pool area. This, along with the undeveloped edge, provides a quiet and natural setting for boaters.

Los Banos Creek Reservoir consists of approximately 485 water surface acres and 12 miles of shoreline, of which 83 acres are designated as RN Zone. It is the most undeveloped and primitive of the three major waterbodies in the Plan Area. It is accessible primarily from Los Banos Creek Use Area on the northeastern side of the reservoir, which has a boat launch ramp and small beach next to a campground. The southern shoreline is generally steep, providing an enclosed feeling and preventing views of large water expanses from any one location. The RN Zone is most primitive and wild on the southern and western ends of the reservoir. The surrounding landscape is undeveloped, no visitor facilities are present, and natural riparian vegetation grows along the shore.

#### *4.3.3.2 Purpose and Intent*

The purpose of the RN Zone designation is to provide a more primitive, rustic experience than at the other water zones in the Plan Area. An RN Zone provides frequent opportunities to see, hear, or smell natural resources due to the occasional or periodic level of development, human activity, and natural resource modification. The area is noticeably more natural, less developed, and tranquil than an urban setting. The opportunity to relieve stress and to get away from a built environment is important, as are moments of solitude, tranquility, and nature appreciation.

#### *4.3.3.3 Resource Goals*

The remote locations of the areas designated as RN Zones and the limited developed facilities provide visitor opportunities for a quieter, natural setting. The San Luis Reservoir RN Zone is the only location for quieter fishing areas and to be away from the boating and other activities found in the main pool area. At Los Banos Creek Reservoir, water quality is an important resource issue; currently, water quality monitoring is not conducted on a regular basis. The remote location of this facility aids in keeping water quality high. The existing fisheries require high water quality and a specific temperature range, depending on the species. If recreational fishing is to be maintained, the habitat of existing fish species and the stocking program at Los Banos Creek Reservoir will need to be managed and monitored.

#### *4.3.3.4 Water Use*

Boating and fishing are permitted in the RN Zone of San Luis Reservoir. The very southern portion of the RN Zone at San Luis Reservoir is a “no ski zone” limited to 10 mph. Activities in the Los Banos Creek Reservoir RN Zone will include

motorized boating and other existing activities, which are subject to the maximum speed limit of 5 mph. Water skiing and other high-speed boating activities will not be allowed. Swimming and non-motorized boating will be permitted. In RN Zones, the target boat capacity (for boats on the water at any one time) is between 50 acres per boat and 110 acres per boat.

### 4.3.4 Administration and Operations Zone (AO)

#### *4.3.4.1 Existing Features*

The Administration and Operations Zone (AO) is the smallest of the proposed management zones. This zone encompasses approximately 1,231 acres near San Luis Reservoir and 128 acres at Los Banos Creek Reservoir (Map 8). This zone includes lands known as “joint use” areas, which defines lands that are managed by DWR for water operations and by CSP for recreation. O’Neill Forebay also has an area of joint use; however, this is strictly for DWR operations and no new uses or activities are proposed.

The San Luis Reservoir AO Zone contains several built structures, most notably B.F. Sisk Dam, operating facilities for DWR and CSP, the Cal Fire Station, and a range used for law enforcement training. The zone can be accessed from SR 152, where it is partially visible from the highway, or from Gonzaga Road. This zone is the most developed portion of the Plan Area and is primarily used for water operations rather than for recreation. Portions of the landscape are open and generally undeveloped within the AO Zone; these areas currently contain no visitor facilities except for small parking areas with interpretive signage, access roads to other use areas, and chemical toilets.

The Los Banos Creek Reservoir AO Zone contains Los Banos Dam and associated water operations facilities. Minimal buildings exist in this zone. Most visitors using the recreational facilities and boating access into the Los Banos Creek Use Area must check in at the CSP-managed entry station structure. The zone also includes some open and undeveloped areas, as well as a wetland area that is located along and crossing the main access road. Generally, most of the landscape within this zone has been altered by the construction of the dam.

#### *4.3.4.2 Purpose and Intent*

The intent of the AO Zone will be to keep the Plan Area’s administrative, operational, and maintenance activities clustered together and to provide for the separation of staff work areas from public use areas. Accordingly, administrative offices, work areas, equipment and materials storage, and staff parking and housing areas will be located in the AO Zone. Public access to this zone is permitted, but it is limited and intended to enable the public to gather information and seek assistance or law enforcement, if necessary. Open, undeveloped land is limited in this zone; therefore, resource management will be focused on activities that support the existing operations yet remain consistent with efforts on other Plan Area lands.

In accordance with Goal OPS-S1, however, housing for staff or seasonal workers may be considered as appropriate in areas outside of the AO Zone. Housing provides an enhanced level of security for all program areas, including resource protection and is seen as a benefit to Plan Area goals.

#### *4.3.4.3 Resource Goals*

The resources in the two areas of the AO Zone include cultural resources, open grassland, wetlands and associated riparian vegetation, and cultural/built environment landscape elements such as the dams and associated water operations features. Future development in this zone should manage and protect these resources through visitor education and interpretation. Resource management in these areas needs to be in keeping with the dams' predominant function and needs to include security and any engineering requirements necessary for water operations.

#### *4.3.4.4 Land Use*

Activities in the AO Zone will include most of the Plan Area staff's administrative, operations, and maintenance activities, as well as limited staff-supported public uses. Staff activities will include staff management, operations and maintenance activities, vehicle and equipment storage, and staff housing. Visitor use in the AO Zone will be limited to guided walks to experience the cultural landscape features and associated buildings, visitor information and orientation, and interpretive signage.

### 4.3.5 Frontcountry Zone (FC)

#### *4.3.5.1 Existing Features*

The Frontcountry Zone (FC) encompasses approximately 1,650 acres throughout the Plan Area, and each of the existing use areas contains land in this zone. Most visitor facilities in each use area are in the FC Zone. The existing FC Zones are listed below by use area and shown in Map 8.

- The Basalt Use Area FC Zone has 1,085 acres, and the entrance is off of SR 152 or Gonzaga Road.
- The Dinosaur Point Use Area FC Zone has 284 acres and lies at the end of Dinosaur Point Road at the western edge of San Luis Reservoir.
- The 473-acre San Luis Creek Use Area FC Zone is along the western shoreline of O'Neill Forebay.
- The Medeiros Use Area FC Zone has 507 acres and is along the southern shoreline of O'Neill Forebay.
- The Los Banos Creek Use Area FC Zone encompasses developed lands along the northwest shore of Los Banos Creek Reservoir and has 238 acres.
- The OHV Use Area FC Zone, part of the SRA that is managed by CSP, is south of Gonzaga Road, about 2 miles from CSP's SRA administrative offices. The entire use area, an open, flat, 150-acre grassland parcel that is partially developed with an OHV track, is designated as an FC Zone.

The FC Zones were defined based on the presence of existing roads as well as camping, parking, boat launching, and other visitor facilities. The FC Zones are the most active visitor use areas in the land-based management zones and where the largest concentration of visitors will congregate. Many of these areas have open landscape expanses consisting of grassland vegetation as well as sheltered areas planted with native and non-native species to protect users from the summer winds and heat. Except for the OHV Use Area FC Zone, these zones have a direct physical connection to the water as well as open and framed views of the associated reservoir.

The terrain in most FC Zone areas (except Los Banos Creek, San Luis Creek and Dinosaur Point use areas) is relatively flat where existing facilities are located; however, adjacent undeveloped portions of the FC Zones contain rolling terrain with limited areas of isolated steepness.

#### *4.3.5.2 Purpose and Intent*

The intent of the FC Zone is to provide visitor information, Plan Area orientation, and the most active visitor activities within and around the existing developed portions of each zone. New visitor restroom facilities and other structures, campsites, concessions, recreational vehicles and horse trailers, and expanded day-use facilities will be primarily located within this zone, along with associated utilities such as electrical, water, and sewer. Additionally, if a new visitor's center is not incorporated within the AO Zone because of unforeseen constraints, it can be sited within the FC Zone. The intent is also to cluster proposed development within and around the existing development to ensure that large expanses of open space are left in a natural state, and that existing open vistas remain uninterrupted. In accordance with Goal OPS-S1, housing for staff or seasonal workers may be sited in the FC Zone.

#### *4.3.5.3 Resource Goals*

The resources associated with the FC Zone are native vegetation, wildlife habitat, streams, rolling topography and scenic, open vistas, and cultural resources. Future development in this zone should manage and protect these resources through minimal disturbance, and sensitive siting and architecture of new structures. New facilities should be clustered in and around existing development where feasible, and sprawl into undeveloped portions of the zone should be avoided where feasible. Development along the shoreline areas should minimize physical and visual interruption of open water views. Native vegetation and indigenous species should be planted, if possible, where new plantings are proposed and to replace dead or dying trees.

#### *4.3.5.4 Land Use*

The FC Zone will accommodate the majority of the visitor facilities and activities, and active uses such as camping and any future concessions. This zone is where visitors will first be oriented to the Plan Area and then embark on their choice of recreation. Visitor options available in this zone include use of trails for horses, hikers, or mountain bikers; departure to camps in the BC Zone; camping for tents

and recreational vehicles as well as group camps; alternative overnight lodging such as cabins or yurts; and day uses such as guided walks, interpretive programs, and nature study and research. In the Medeiros Use Area, where space is available for new or expanded facilities, the FC Zone will accommodate structures such as staff housing and/or a building for group events. Visitor use in this zone will be the most intensive of any zone in the Plan Area, but it will be focused in designated areas.

### 4.3.6 Backcountry Zone (BC)

#### *4.3.6.1 Existing Features*

The BC Zones cover the most land in the Plan Area, with a total of 7,800 acres divided into seven areas. Two are DFG-managed wildlife areas that are designated in their entirety as BC Zones. The 861-acre San Luis Wildlife Area, at the western edge of San Luis Reservoir, is accessible via Dinosaur Point Road and has a separate parking area. The wildlife area contains steep slopes, and motorized access is limited to authorized vehicles. O'Neill Forebay Wildlife Area BC Zone, on the eastern shore of the O'Neill Forebay, contains 621 acres and is accessible via SR 33. The area has parking, trail access, riparian vegetation, and wetland areas. The BC Zone does not contain the portion of the O'Neill Wildlife Area that is used for water operations and designated as a joint use area. DFG manages both wildlife areas to comply with its mission, rules, and regulations.

The other five areas designated as BC Zones are next to the FC Zones of the major use areas. The Basalt Use Area BC Zone has 2,275 acres, is accessible through the area's FC Zone, and includes Basalt Quarry and the lands next to the southeastern and western shore of San Luis Reservoir. The main visitor facilities in this zone are hiking trails.

The 905-acre Dinosaur Point Use Area BC Zone is along the northeastern shoreline of San Luis Reservoir. This area is currently not used, as it is accessible only during low water levels via the Dinosaur Point Use Area FC Zone and from certain turnout areas along SR 152. This BC Zone follows the shoreline closely except in the vicinity of Honker Bay, where it flattens out and widens to form a peninsula. Elsewhere, the zone slopes steeply toward the shoreline. Although this area is physically connected to the San Luis Wildlife Area, it differs from that area by the uses permitted.

The San Luis Creek Use Area BC Zone is accessible via the adjacent FC Zone and consists of two areas totaling 792 acres. The first area is west of the entry station, west of O'Neill Forebay and adjacent to Lower Cottonwood Wildlife Area. It acts as a transition between the wildlife area and CSP-managed SRA lands. A portion of the BC Zone also follows SR 152; however, it generally acts as open buffer land adjacent to the highway. The second BC Zone in the San Luis Creek Use Area is north of O'Neill Forebay and is accessible only by boat and trail.

South of O'Neill Forebay and immediately north of SR 152 is the 568-acre Medeiros Use Area BC Zone, which is accessible via the adjacent FC Zone. This area is currently undeveloped and relatively flat. It contains a large buffer planting that visually separates it from the highway, as well as a series of unpaved roads that lead to areas along the shoreline in the FC Zone.

Los Banos Creek Use Area BC Zone contains a large portion of land (1,777 acres) surrounding Los Banos Creek Reservoir. It consists of rolling and steep grassland terrain as well as flatter shoreline areas with riparian vegetation. The portion of the zone south of the reservoir is accessible from a road off of the main entry road and before the entry station. The elevation of the area provides sweeping views of much of the reservoir and landscape to the northwest and south. The character of the BC Zone is among the most primitive within the Plan Area, due to its remote location and the unaltered shoreline and wetland areas, particularly from about the middle of the reservoir to the southwestern edge of the that portion of the Plan Area. The BC Zone on the northern side of the reservoir is accessible from the FC Zone primarily by trails and from the water.

The BC Zones are shown in Map 8.

#### *4.3.6.2 Purpose and Intent*

The purpose of the BC Zones is to keep a large portion of the Plan Area in a wild and primitive state while allowing limited visitor access and enjoyment. The intent is to maintain the vegetative species and natural, un-engineered character of the landscape. Accordingly, recreation facilities are limited but visitor access is extensive, consisting of hiking, horseback riding, mountain biking, backpack camping, nature study, and bird watching. In the DFG-managed wildlife areas, hunting is permitted by season and species and other restrictions as per the DFG code. The BC Zones will provide visitors with quiet and passive recreation experiences, and opportunities to be in a more wild landscape setting than the FC Zones. Utilities and visitor services will be limited because access is remote and new infrastructure is costly. In accordance with Goal OPS-S1, housing for staff or seasonal workers may be sited in the BC Zone.

#### *4.3.6.3 Resource Goals*

The resources associated with this zone are the unfragmented expanses of native vegetation and wildlife habitat, wetlands, cultural elements, and scenic vistas. Future development in this zone should manage and protect these resources through continued inventory and research. In addition, land management activities should be aimed at reducing invasion by exotic species, degradation of shoreline and riparian areas, and habitat fragmentation. Siting of any future primitive campgrounds and associated structures should be consistent with these goals to the extent possible. Because the BC Zones are the largest blocks of undeveloped land in the Plan Area, managers should ensure that fragmentation and degradation do not occur through haphazard maintenance activities, inappropriate placement of new facilities, and visitor overuse.

#### 4.3.6.4 Land Use

Activities in the BC Zone will include a full array of resource management actions as appropriate, as well as the less intensive recreation uses and limited facilities associated with primitive camping and mixed-use trails. Less intensive uses include fishing, self-guided interpretive walks, and other trail use by mountain bikers, hikers, backpackers, equestrians, bird watchers, photographers, researchers, students, and Plan Area staff members. Limited special-event opportunities such as equestrian and mountain bike events will be considered on a case-by-case basis.

The Medeiros Use Area is one location in the Plan Area where ample space is available for new or expanded facilities. Therefore, the BC Zone for the Medeiros Use Area could accommodate structures such as staff housing and/or a building for group events, along with associated utilities such as electrical, water, and sewer.

Resource management activities will be especially active in this zone. In certain areas, prescribed burns may be used to manage fuel loads, in accordance with the recommendations of a vegetation management statement and the Cal Fire Vegetation Management Program (Section 3.2.5). Grazing is currently allowed in Medeiros Use Area and would be considered in other areas of the BC Zone for vegetation management. Riparian rehabilitation, exotic species removal, and wildlife habitat and corridor protection are other intended resource management activities.

## 4.4 Alternatives

This section describes the No Action/No Project Alternative and three action alternatives for Plan implementation. The proposed alternatives were developed using input from public and agency meetings and workshops, a review of available documentation, and an analysis of existing conditions. The action alternatives provide a range of management activities and guidance proposed to address the goals, objectives, and issues for each resource category. Management zones within the Plan Area are discussed in Section 4.3.

The activities and guidance identified for each alternative represent the amount of development and management that is consistent with the alternative's objectives and management zones. The activities and guidance would be implemented based on sufficient public demand, sufficient staffing and funding to manage the new or modified uses in accordance with the Plan, and potential for increased public benefits and use. New recreational uses or activities allowed under the Plan may also be discontinued in the future at the discretion of the managing agencies if demand decreases, the activity is not economically viable, new security or safety considerations arise, and/or unforeseen significant environmental impacts occur that cannot be mitigated.

All three action alternatives developed to implement the Plan are designed to protect and preserve natural and cultural resources throughout the Plan Area. Plan goals and guidelines from Section 4.2 are referenced where appropriate. Resource management activities are generally equal in resource protection across all alternatives; however, they provide for different ways to accomplish resource goals. The alternatives emphasize maintaining use and facilities within the existing use areas and clustering new facilities in and around these areas to the extent feasible to reduce encroachment into undeveloped lands within the Plan Area. Although some alternatives allow for trails or other access into segments of the Plan Area that are currently not being used, this has been kept to a minimum with the goal of conserving native vegetation, wildlife habitat, and wildlife corridors.

This Plan is a programmatic document that provides a broad range of management activities that are feasible within the Plan Area. Future project-specific actions, if and when implemented, may require tiered environmental review that would reference this programmatic document. Future project-specific actions would only be implemented when needed and based on BMPs, staff recommendations, and adequate funding.

The action alternatives are described in Table 4-1 by use area and for the Plan Area as a whole. The alternatives can be summarized as follows:

- Alternative 1, the No Action/No Project Alternative, would continue the management direction set by previous planning documents as well as ongoing programs initiated under existing legislation and regulations. Alternative 1 is intended to reflect current and expected future conditions in the Plan Area should the proposed Plan not be implemented.
- Alternative 2: Limited new access and development. Alternative 2 would include the fewest physical additions and visitor use modifications among the action alternatives but would implement an array of resource management actions. Visitor access would remain the same as under Alternative 1.
- Alternative 3: Moderate new access and development. Alternative 3 balances the need for future visitor facilities with resource management. This alternative anticipates increased future visitation by providing for physical additions and visitor use modifications but concentrates them in and around existing developed areas. Compared to Alternative 2, Alternative 3 would provide for the same level of resource management and a higher level of visitor access.
- Alternative 4: Maximum new access and development. Alternative 4 would provide for the most physical additions and visitor use modifications among the action alternatives, some in areas that are currently undeveloped. Compared to the other action alternatives, Alternative 4 would provide for the same level of resource management and the highest level of visitor access.

Each alternative is described in detail in Sections 4.4.1 through 4.4.4. For each action alternative description, a discussion of its characteristics is presented by the five major planning areas: resource management, visitor use and education, local and regional planning, infrastructure and operations, and water operations.

An environmental evaluation of the Plan alternatives is provided in Section 5.4.

**Table 4-1**
**Proposed Management Actions by Alternative and Area**

| Element | Alt 1 | Alt 2 | Alt 3 | Alt 4 |
|---|---|---|---|---|
| **RESOURCE MANAGEMENT** | | | | |
| Continue existing watercraft inspection program to prevent the introduction of invasive mussels. If funding does not allow for continuation of the existing program, implement a voluntary watercraft operator self-inspection program to prevent the introduction of invasive mussels, pursuant to California Fish and Game Code §2302. If needed, evaluate other control measures to prevent the introduction of invasive mussels. | • | • | • | • |
| No timed phaseout of nonconformant two-stroke engines. | • | | | |
| Three-year phaseout of nonconformant two-stroke engines, with enforcement measures to be specified in the boating management plan. | | • | • | • |
| Continue boating management under general direction set by ongoing practices and previous plans (1972 Boating Management Plan, 1969 and 1971 Los Banos Creek Reservoir Recreation Development Plans). | • | | | |
| Develop a new boating management plan. | | • | • | • |
| Develop a cultural resources management plan, including BMPs for cultural resource protection. | | • | • | • |
| Develop a trails management plan. | | • | • | • |
| Develop a vegetation management statement; consider rehabilitation of natural ecosystems using best management practices; coordinate protection of special-status wildlife with other agencies where necessary. | | • | • | • |
| | | | | |
| Continue grazing in the BC Zone at Medeiros Use Area. | • | • | • | |
| Allow grazing and prescribed burns in the BC Zones of Basalt and Los Banos Creek use areas. | | • | • | • |
| Allow grazing in the BC Zones of Dinosaur Point and San Luis Creek use areas. | | • | • | • |
| Convert the BC Zones at Medeiros Use Area (entire BC Zone) and part of Los Banos Creek Reservoir (along existing entry road) to FC to accommodate existing and future recreation demand and focus activity and development in geographically appropriate areas. | | | • | • |
| **VISITOR EXPERIENCE, INTERPRETATION, AND EDUCATION** | | | | |
| **Plan Area-wide** | | | | |
| Maintain existing trails and trailside exhibits. | • | • | • | • |

**Table 4-1**
**Proposed Management Actions by Alternative and Area**

| Element | Alt 1 | Alt 2 | Alt 3 | Alt 4 |
|---|---|---|---|---|
| Create additional interpretive programs, including themes described in Section 4.2.2.3. | | • | • | • |
| **Gonzaga Road Facilities Area** | | | | |
| Maintain existing CSP facilities. | • | • | • | • |
| Provide a new visitor's center within existing facilities. | | | | • |
| **Romero Visitor's Center** | | | | |
| Continue to offer educational information, literature, visitor programs, viewing stations with telescopes, and restrooms. | • | • | • | • |
| Consider partnership for development of interpretive programs with DWR. | | • | • | • |
| **Basalt Use Area** | | | | |
| Maintain entrance station, four-lane boat launch with a 80-foot boarding float, parking lot (for 278 vehicles or 156 with trailers), restrooms with flush toilets and showers, chemical toilets, information boards, and wind warning light. Maintain no-ski zone and 10 mph speed limit on reservoir on either side of Goosehead Point. | • | • | • | • |
| Basalt Quarry to remain closed to public access. | • | • | • | |
| Coordinate with Department of Water Resources (DWR) to allow for guided tours of Basalt Quarry. | | | | • |
| Maintain trails and interpretive signage. | • | • | • | • |
| Develop multi-use trail (hiking, cycling, equestrian) to Pacheco State Park including a backpackers' camp. Where feasible, provide spring-fed water station. | | | • | • |
| Maintain existing camping area (79 tent/RV sites). | • | | | |
| Reconfigure 79 tent/RV sites or add sites to allow for larger RVs. | | • | • | • |
| Add 30 RV campsites with full hookups. | | | • | • |
| Add hookups to all campsites and add laundry facility and refreshment stand. | | | | • |
| Add group camp to accommodate up to 60 people. | | | • | |
| Add group camp to accommodate up to 100 people. | | | | • |
| Add alternative overnight lodging such as cabins or yurts. | | | • | |
| Add alternative overnight lodging such as cabins or yurts with utilities. | | | | • |
| In the BC Zone, add backpackers campground with up to 10 tent sites, and add vault toilets. | | | • | |
| Maintain existing campfire center/outdoor gathering area (for approx. 60 people). | • | | | |
| Upgrade campfire center to accommodate regular programs and group events. | | • | • | |
| Replace campfire center with amphitheater to accommodate larger groups. | | | | • |
| Coordinate with DWR to explore allowing cycling/fishing on dam. | | | • | • |

**Table 4-1**
**Proposed Management Actions by Alternative and Area**

| Element | Alt 1 | Alt 2 | Alt 3 | Alt 4 |
|---|---|---|---|---|
| **San Luis South (Quien Sabe, Golden Eye, Harper Lane, and Coyote Springs Areas)** | | | | |
| Maintain wind warning light at Quien Sabe Point and no-ski zone and 10 mph speed limit in Portuguese Creek area. | • | • | • | • |
| Maintain Lone Oak Trail from Basalt Use Area. | • | • | • | • |
| Provide group picnic facility with shade ramadas at Quien Sabe Point, accessible by foot, bike, or horseback; provide campground at Golden Eye with up to 25 tent sites and backpackers campground at Harper Lane with up to 10 tent sites; develop an equestrian camp and allow primitive trail access camping at Coyote Springs. | | | | • |
| **Dinosaur Point Use Area** | | | | |
| Maintain existing parking facilities (123 spaces for vehicles), shade ramadas (five), picnic benches, chemical toilets, information board. | • | • | • | • |
| Add restrooms with flush toilets. | | • | • | • |
| Add 30 shade ramadas. | | | • | • |
| Allow concession. | | | | • |
| Maintain multi-use trail along Dinosaur Point Road. | • | • | • | • |
| **Dinosaur Point Use Area, cont.** | | | | |
| Develop trail linking Dinosaur Point to Pacheco State Park and San Luis Wildlife Area. | | | • | |
| Develop multi-use trail (hiking, cycling, equestrian) linking Basalt with Dinosaur Point Use Area (see above for Basalt). | | | | • |
| Maintain existing four-lane boat launch with 80-foot boarding float. | • | • | • | |
| Expand boat launch. | | | | • |
| Construct marina. | | | | • |
| Allow concession. | | | | • |
| Add 30 tent campsites. | | | • | • |
| At Whistler Point south of Dinosaur Point, allow primitive boat-in and trail access camping. | | | | • |
| At Honker Bay north of Dinosaur Point, allow boat-in, low-impact day use (picnicking and hiking). | | | | • |
| Continue to allow street luge events with permission from the CSP Four Rivers Sector. | • | • | • | • |
| **San Luis Creek Use Area** | | | | |
| Maintain entrance station, wind warning light, three-lane boat launch ramp with two 80-foot boarding floats, parking (390 spaces for vehicles; 171 for vehicles with trailers), two beaches, lifeguard stand, 148 shade ramadas with barbecues, picnic area, trail access, interpretive exhibits, dump station, chemical toilets, restrooms (with flush toilets and showers), and no-ski zone and 10 mph speed limit on water on the west side of O'Neill Forebay. | • | • | • | • |

**Table 4-1**
**Proposed Management Actions by Alternative and Area**

| Element | Alt 1 | Alt 2 | Alt 3 | Alt 4 |
|---|---|---|---|---|
| Provide new boarding float and ADA-accessible fishing pier; upgrade or replace lifeguard stand; consider connecting paving paths; explore concession opportunities. | | • | • | • |
| Offer additional interpretive exhibits, programs. | | • | | |
| Expand boat launch. | | | • | • |
| Add separate launch area for personal watercraft. | | | | • |
| Add children's fishing area. | | | • | |
| Construct marina. | | | | • |
| Maintain the five group picnic facilities. | • | | • | • |
| Expand the five group picnic facilities. | | • | | |
| Provide up to five additional group picnic facilities at day use areas (2 for 25-35 people each, 2 for 45-60 people each, and 1 for 75-100 people). | | | • | |
| Provide additional group picnic facilities as described for Alt. 3 but with a total of 4 facilities (instead of 2) for groups of 45-60. | | | | • |
| Provide multipurpose building for group events and interpretive programs. | | • | • | • |
| At North Beach, develop amphitheater for group events and interpretive programs. | | | | • |
| Maintain existing 53 tent and RV campsites with electric and water hookups, fire pits, and picnic tables; and two group campsites (accommodates 90 campers total) with shared parking (approximately 36 vehicle spaces). | • | • | • | • |
| Add up to 30 tent sites at northwest shoreline. | | • | • | • |
| Add one group campsite for up to 90 campers. | | | • | |
| Add two group campsites for up to 100 campers each. | | | | • |
| Offer alternative overnight lodging such as up to 15 cabins or yurts with utilities. | | | • | |
| Offer alternative overnight lodging such as up to 30 cabins or yurts with utilities. | | | | • |
| In the Grant Line area on the northeast side of O'Neill Forebay (BC Zone), continue to allow boat-in low-impact day use (picnicking and hiking). | • | • | • | • |
| In the Grant Line area on the northeast side of O'Neill Forebay (BC Zone), allow boat-in primitive camping. | | | | • |
| Work with DFG to reduce conflicts with hunting access from San Luis Creek Use Area to Lower Cottonwood Wildlife Area such as park use hours, gates, etc. | | • | • | • |
| **Medeiros Use Area** | | | | |
| Maintain entrance station, approximately 300 informal parking spaces, four portable water tanks, chemical toilets, and unimproved trails. | • | • | • | • |
| Boat launch to remain closed. | • | | | |

**Table 4-1**
**Proposed Management Actions by Alternative and Area**

| Element | Alt 1 | Alt 2 | Alt 3 | Alt 4 |
|---|---|---|---|---|
| Consider enhancements to allow reopening/relocating boat launch. | | • | • | • |
| Add parking lot and restrooms near boat launch. | | | • | • |
| Add windsurfing launch area. | | | | • |
| Pave all unpaved roads. | | | • | • |
| Develop water-themed interpretive program, including a wetland demonstration area. | | | | • |
| Add a water-based play area for children to interpret the need and value of water quality and quantity. | | | | • |
| Maintain 50 tent/RV sites (with shade ramadas, picnic tables, and barbecues) and 350 primitive campsites. | • | • | • | • |
| Add shelter and restrooms. | | | • | |
| Add shelter and restrooms with flush toilets. | | | | • |
| Add up to 100 new tent/RV sites and 100 primitive campsites. | | | • | |
| Add up to 150 new tent/RV sites and 100 primitive campsites, along with wayside campground near entry station. | | | | • |
| Offer alternative overnight lodging such as cabins or yurts with utilities. | | | | • |
| Consider concessions, including food service and camping/fishing supplies. | | | • | |
| Allow for construction of a restaurant and motel in coordination with long-term concessionaire. | | | | • |
| **OHV Use Area** | | | | |
| Maintain unpaved OHV trails, parking, chemical toilets, and interpretive signage. | • | • | • | • |
| Allow for minor additions to existing facilities such as shade ramadas, vault toilet, minor infrastructure improvements. | | | • | |
| Add up to six primitive campsites. | | | • | • |
| Allow for more intensive activity within existing OHV Use Area, such as a professional motocross track, and provide underground utilities (water and power). | | | | • |
| Allow for potential future expansion of OHV Use Area if property becomes available. | | | • | • |
| **Los Banos Creek Use Area** | | | | |
| Maintain two-lane boat launch ramp with 60-foot boarding float; 5 mph speed limit on entire reservoir; parking for approximately 40 vehicles with boat trailers; 14 North Shore campsites with shade ramadas, barbecues, and picnic tables; swimming area; hiking and equestrian trail access; “Path of the Padres” hiking trail; and chemical toilets. | • | • | • | • |
| Maintain entrance station in current location. | • | • | | |
| Construct a new entrance station at Plan Area boundary and relocate staff housing and maintenance facilities. | | | • | • |

**Table 4-1**
**Proposed Management Actions by Alternative and Area**

| Element | Alt 1 | Alt 2 | Alt 3 | Alt 4 |
|---|---|---|---|---|
| Explore opportunities for expanding North Shore campground for up to 30 tent sites and providing restrooms with flush toilets. | | • | • | • |
| Provide up to 20 tent/RV campsites on the South Shore. | | | • | |
| Provide up to 40 tent/RV campsites on the South Shore. | | | | • |
| West of Los Banos Creek Use Area, develop 40 tent sites and a group camp in the La Plata area, and allow boat-in primitive camping at Padre Arroyo Flat. | | | | • |
| Maintain equestrian camp in current location. | • | | | |
| Relocate equestrian camp. | | • | • | • |
| Create trail linking Los Banos Creek Use Area to Basalt Use Area if allowed by owners of private properties. | | | | • |
| Guided tours of the “Path of the Padres” trail and boat tour led by volunteer and CSP staff, camping, boating, fishing, swimming, horseback riding, radio-controlled plane and glider use, and trail use. | • | • | • | • |
| **LOCAL AND REGIONAL PLANNING** | | | | |
| Provide for coordination among DWR, DFG, CSP, and Reclamation as well as with other agencies and stakeholders. | | • | • | • |
| Provide for addressing conflicts between hunting and other uses on lands surrounding the Dinosaur Point Use Area. | | • | • | • |
| Facilitate local and regional planning objectives by considering development of trails linking Plan Area with Pacheco State Park. | | | • | • |
| **INFRASTRUCTURE AND OPERATIONS** | | | | |
| **Circulation** | | | | |
| Maintain existing access routes and entry points. | • | | | |
| Work with Caltrans to identify alterations to existing roadways, including improved turning lanes on SR 152 and SR 33 at Plan Area entry points; work with other agencies to improve signage outside of Plan Area and at entry points. | | • | • | • |
| Work with Caltrans to explore improved access routes between SR 152 and Basalt Use Area, and SR 152 and San Luis Creek. | | • | • | • |
| Work with Caltrans to explore interchange at San Luis Creek entry road with limited access overpass from Gonzaga Road, and crossing from Gonzaga Road to Medeiros Use Area with a blending lane to SR 152. | | | • | • |
| At the San Luis Creek Use Area, in the vicinity of the San Luis Creek Campground, allow for a new road for vehicle access to fishing area (Check 12) and potential new camping areas. | | | • | • |
| At Los Banos Creek Use Area, improve road at existing entry station to allow passage during periods of seasonal flooding. | | • | • | • |
| Work with Caltrans to explore creation of new exit off of I-5 at Canyon Rd. for access to Los Banos Creek Use Area. | | | | • |

**Table 4-1**
**Proposed Management Actions by Alternative and Area**

| Element | Alt 1 | Alt 2 | Alt 3 | Alt 4 |
|---|---|---|---|---|
| **Utilities** | | | | |
| Upgrade utilities over time to meet current standards. | • | • | • | • |
| Provide for additional utility connections to accommodate additional hookups and electrical demand in areas of new or expanded development. | | | • | • |
| Maintain and repair existing lighting. | • | | | |
| Maintain and repair existing lighting using energy-efficient fixtures; add carbon-reducing features such as solar panels to offset carbon footprint. | | • | • | • |
| Add new lighting as necessary for additional development. | | | • | • |
| **WATER OPERATIONS** | | | | |
| Provide information about how to obtain wind and water level information. | | • | • | • |
| Clarify allowable visitor access to sensitive areas such as dams and other water conveyance structures and facilities. | • | • | • | • |
| Explore engineering solutions for shallow areas at low water levels, including dredging and removal of sandbars. | | | • | • |

### 4.4.1 Alternative 1: No Action/No Project Alternative

NEPA regulations (40 CFR 1502.14(d)) and CEQA Guidelines (Section 15126.6) require that a No Action (NEPA) and No Project (CEQA) alternative be analyzed in an EIS and an EIR, respectively, to allow decision-makers to compare the impacts of not approving the action with those of approving the action.

For Alternative 1, the current resource and recreation management direction and practices in the Plan Area would continue unchanged. The management elements listed for Alternative 1 in Table 4-1 are existing, ongoing activities in the Plan Area and represent the expected future condition if the Plan were not implemented. The previous plans described in Section 3.1 and Appendix A, Table A-1 would remain in effect.

Although water and land management zones for Alternative 1 are shown in Map 8, the proposed Plan would not be implemented, and no Plan measures would be applied to manage those zones. None of the new facilities or focused management plans identified in the action alternatives would be implemented. Utility upgrades would be necessary over time to adhere to current standards, but no provisions would be made to accommodate any increase in demand for electricity and potable/drinking water, or to add lighting in the Plan Area. The use of nonconformant two-stroke marine engines would not be phased out.

The existing invasive mussel inspection program in the Plan Area, launched by CSP on October 1, 2011, will continue for three years. If no funding is available

after 2014, a watercraft operator self-inspection program would be implemented as part of Alternative 1 to meet the requirements of California Fish and Game Code Section 2302. The self-inspection program would be implemented consistent with the Level 1 Self-Inspection described in *Recommended Uniform Minimum Protocols and Standards for Watercraft Interception Programs for Dreissenid Mussels in the Western United States* (Pacific States Marine Fisheries Commission 2009).

Under this program, an inspection form would be made available at an entry station, kiosk, or message board. The form would have questions for the watercraft/equipment to answer and instructions for inspecting all designated areas and equipment. Before launching, boaters must confirm by signing and displaying a completed self-inspection form that watercraft, equipment, and trailer have not been in any water known or suspected of having quagga/zebra mussels in the past 30 days; have been cleaned, and to the extent practical, drained and dried; and have been visually inspected at the site prior to launching. The form would then be placed in or on the transport vehicle, where it can be easily seen. Completion and display of the inspection form would be voluntary. If needed to protect Plan Area infrastructure and ecosystems, other potential control measures could be evaluated including, but not limited to, mandatory use of the inspection form; screening interviews at the point of entry; a comprehensive watercraft/equipment inspection performed by trained inspectors of all high-risk watercraft/equipment; and/or decontamination, quarantine, or exclusion of suspect watercraft.

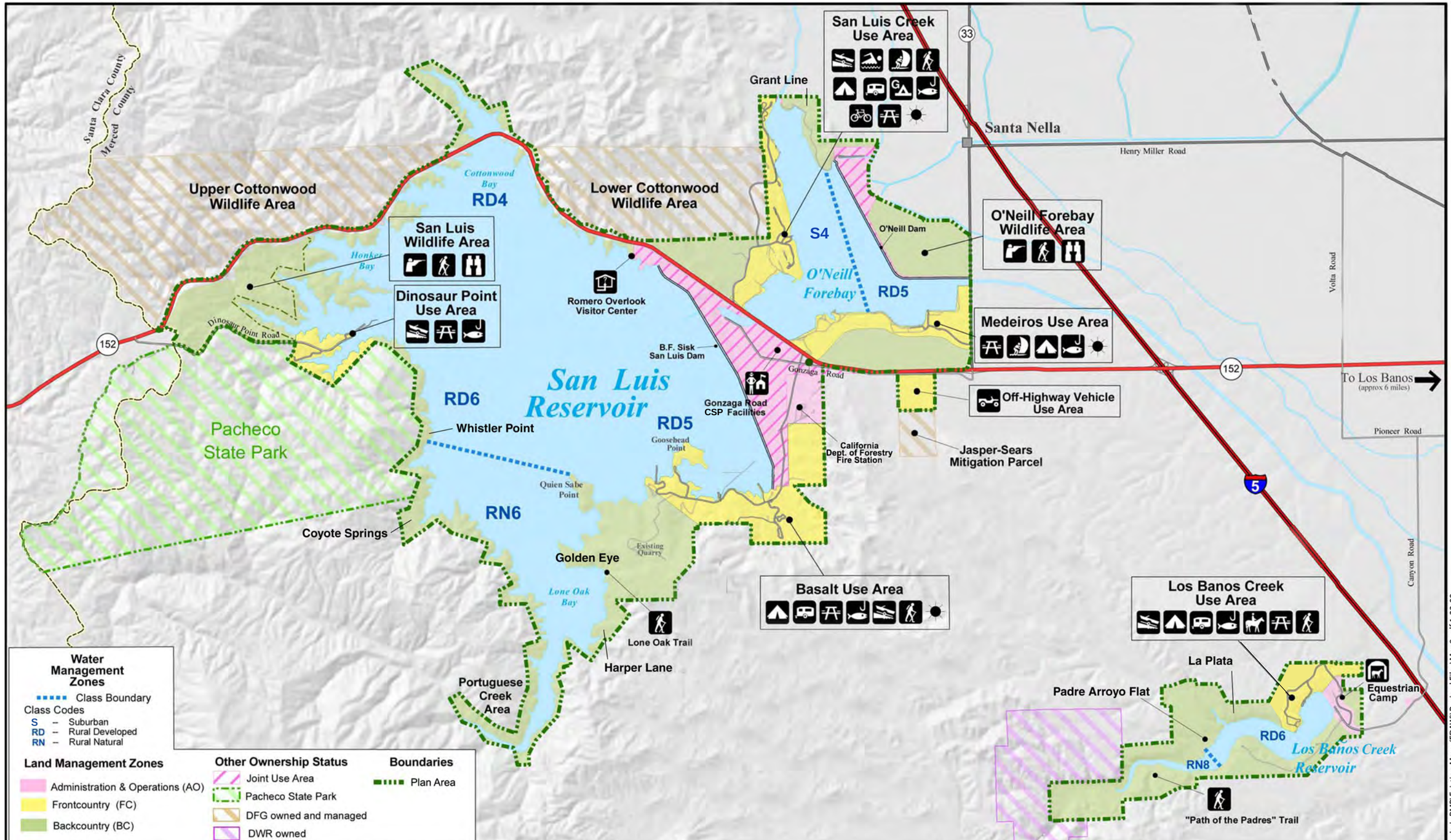
Section 5.4 evaluates the impacts associated with this alternative in relation to the action alternatives.

### 4.4.2 Alternative 2: Limited New Access and Development

Alternative 2 would provide the least overall new visitor access and facility diversity of the action alternatives. General locations of the new facilities and features of Alternative 2 are shown on Map 9 and listed in Table 4-1. Management zone designations would remain the same as with Alternative 1. The following description of Alternative 2 is organized by the planning areas defined in Section 3.4.

**Resource Management.** Alternative 2 proposes the fewest physical additions and visitor use modifications in the Plan Area but includes several resource management components. Alternative 2 would implement focused management plans for the Plan Area resources described below. The preparation of these plans differs from other proposed management elements. Proposed recreational uses or facilities allowed under the Plan would be implemented at the discretion of Plan Area management and could be discontinued for the reasons described at the beginning of Section 4.4. In contrast, preparation of the focused management plans is part of Plan implementation and would be implemented within three to five years of Plan adoption, or sooner if funding is available. The focused management plans would be as follows:

- Boating management plan. A boating management plan would allow management personnel to identify boat densities that are compatible with the different WROS designations within the Plan Area (discussed further in Sections 4.3.1 through 4.3.3). Setting density thresholds is consistent with Goal VIS-F3 (Visitor Uses/Opportunities and Facilities) to manage water surfaces to accommodate a variety of different user groups and minimize conflicts among users. The total number of boats allowed daily could be managed by limiting the number of launches to the number of boat trailer parking spaces available, instituting a reservation system, monitoring, or other methods. Management personnel would have the flexibility to allow boat numbers to exceed maximum densities on holidays or high-use weekends if safety requirements are met. The boating management plan may consider data points such as accidents, violations, and historic data. The plan would be reviewed periodically to assess whether updates are necessary as a result of changes to boat types or boating areas. In keeping with Goal RES WQ-1 (Hydrology/Water Quality) to avoid adverse water quality effects from recreation, each of the action alternatives would impose a three-year phaseout period for nonconformant two-stroke engines. All recreational marine engines would be required to have a one-star, two-star, or three-star label. The boating management plan would specify enforcement measures that could be implemented after the phaseout period. Finally, the plan could include visitor education measures to prevent pollution from motorized watercraft, such as limiting engine operation at full throttle, following manufacturers' recommended maintenance schedules, eliminating unneeded engine idling, preventing gasoline spills and using caution when pumping/transferring fuel, and preparing engines properly for winter storage.
- Cultural resources management plan. A cultural resources management plan could include BMPs for cultural resource protection, set forth a process to record and document cultural resources, and develop a long-range management that evaluates preservation, stabilization, rehabilitation, or reconstruction of the Plan Area's significant cultural resources. By including a focused management plan for cultural resources, Alternative 2 would provide a greater degree of consistency with Goal RES-H1 (Cultural/Historic) and its guidelines than Alternative 1.
- Vegetation management statement. Consistent with Goals RES-V1 through RES-V5 (Vegetation), a vegetation management statement would provide a framework for identifying and prioritizing strategies to manage invasive species and weeds; special-status, wetland, and native vegetation; erosion and sedimentation; grazing; and prescribed burns and fuel loads. The statement would assess the adequacy of the existing vegetation and wetlands inventory (described in Section 2.6.2.1) and allow for preparation of a Plan Area vegetation map. The statement would also identify tools and techniques to manage vegetation and incorporate BMPs for native grassland rehabilitation. To minimize the propagation of invasive and non-native species, the plan would list local native species




Source: USGS DRG

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Scale 1 : 79,200
1" = 1.25 miles

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**Existing Recreation Resources and Uses**

**Facilities**
- Ranger Station
- Visitor Center
- Wind Warning Light

**Camping**
- Tenting
- Recreational Vehicle
- Group Site
- Horse Camping

**Recreation Uses and Activities**
- Boat Launch
- Windsurfing
- Swimming
- Fishing
- Hunting
- Equestrian
- Bicycling
- Off-Highway Vehicle
- Wildlife Viewing
- Hiking
- Day Use

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CALIFORNIA STATE PARKS

**San Luis Reservoir State Recreation Area**

**MAP 9**
**Alternative 2**

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that are indigenous to the Plan Area or vicinity to be used for revegetation where feasible. The statement would address wildland fire and identify fire management measures, consistent with the National Fire Plan.

- Trails management plan. A focused trails management plan would be prepared in accordance with Goals VIS-T1 through VIS-T4 (Trails) to provide a framework for long-term trail system assessment and management. The plan would identify potential future trails and connections and determine single-use and multi-use options based on visitor experience and resource protection needs. This could involve reviewing parts of the Plan Area that are currently not accessible to the public to determine where to place new trails or branch off of existing trails. The plan would identify important natural resources (such as wildlife corridors) and cultural resources to consider in trail planning, to avoid resource fragmentation or degradation where feasible. The plan would also incorporate BMPs to maintain trails and minimize erosion, especially in areas where trail use could affect water quality.

In addition, Alternative 2 would allow for development of BMPs for rehabilitation of natural ecosystems (Goal RES-V4, Vegetation) and coordination with other agencies to protect special-status wildlife where necessary (Goal RES-W2, Wildlife).

Under Alternative 2 and the other action alternatives, geologic studies and geotechnical investigations would be performed as necessary before siting and design of permanent structures, campgrounds, roads, and trails to avoid or minimize potential damage from erosion, unstable soil, landslides, and earthquakes. In addition, erosion control and soil stabilization BMPs would be considered, including necessary erosion control plans for sites with high erosion potential to minimize soil loss and sedimentation; revegetation of disturbed areas with native species when construction activities are complete; BMPs such as mulch or weed-free straw to provide groundcover where soils have been exposed at the surface without effective coverage; the siting of access, staging, and stockpiling areas on existing roads or trails to the extent possible; avoiding the placement or operation of heavy equipment on slopes steeper than 65 percent, and on slopes steeper than 50 percent in areas that are unstable; and developing specific measures as situations arise to minimize the effect of operations on slope instability if steep slopes are unavoidable.

Alternative 2 and the other action alternatives would also include measures to prevent the introduction of invasive mussels. The existing invasive mussel inspection program in the Plan Area, launched by CSP on October 1, 2011, will continue for three years. If no funding is available after 2014, a watercraft operator self-inspection program would be implemented as part of Alternative 2 to meet the requirements of California Fish and Game Code Section 2302. The self-inspection program would be consistent with the Level 1 Self-Inspection described in *Recommended Uniform Minimum Protocols and Standards for Watercraft Interception Programs for Dreissenid Mussels in the Western United*

*States* (Pacific States Marine Fisheries Commission 2009). Under this program, an inspection form would be made available at an entry station, kiosk, or message board. The form would have questions for the watercraft/equipment to answer and instructions for inspecting all designated areas and equipment. Before launching, boaters must confirm by signing and displaying a completed self-inspection form that watercraft, equipment, and trailer have not been in any water known or suspected of having quagga/zebra mussels in the past 30 days; have been cleaned, and to the extent practical, drained and dried; and have been visually inspected at the site prior to launching. The form would then be placed in or on the transport vehicle, where it can be easily seen. Completion and display of the inspection form would be voluntary. If needed to protect Plan Area infrastructure and ecosystems, other potential control measures could be evaluated including, but not limited to, mandatory use of the inspection form; screening interviews at the point of entry; a comprehensive watercraft/equipment inspection performed by trained inspectors of all high-risk watercraft/equipment; and/or decontamination, quarantine, or exclusion of suspect watercraft.

Finally, Alternative 2 and the other action alternatives would allow for grazing and prescribed burns for fuel management in the BC Zones of Basalt and Los Banos Creek use areas, and for grazing in the BC Zones at Dinosaur Point and San Luis Creek use areas. These measures are consistent with Goal RES-V5 (Vegetation) to reduce the threat for wildland fire. Grazing, which is currently allowed in the BC Zone at Medeiros Use Area, would continue in accordance with federal and state policy guidelines and with completion of NEPA and CEQA analysis prior to renewal of the grazing lease.

**Visitor Experience, Interpretation, and Education.** This alternative would expand visitor experience and education compared with existing facilities and programs, but to a lesser degree than Alternatives 3 and 4. Visitor facility modifications are generally consistent with Goals VIS-F1 through VIS-F3 (Visitor Uses/Opportunities and Facilities), although Alternative 2 provides for a minimal level of future recreation demand. Additions to facilities under this alternative would not change any WROS or land management zone designations compared from those identified for Alternative 1; accordingly, the target boat capacities identified in Sections 4.3.1.4, 4.3.2.4, and 4.3.3.4 also remain the same. This alternative does not include management actions that increase Plan consistency with Goals VIS-T1 through VIS-T4 (Trails), Goal VIS-C1 (Concession Opportunities), or Goal REG-L1 (Linkages).

At the Romero Visitor's Center, in addition to the existing educational information, literature, and visitor programs, interpretive programs would be considered in partnership with DWR. The Basalt Use Area campground would be reconfigured or sites would be added to accommodate larger RVs, and the existing campfire center would be upgraded with additional seating or other facility enhancements for regular programs and group events.

Alternative 2 would introduce no new recreational activities or facilities in the San Luis South area, southwest of Basalt Use Area. The Lone Oak Trail would

remain accessible from Basalt Use Area, and the no-ski zone and 10 mph speed limit would remain in force in Lone Oak Bay and Portuguese Creek.

Changes at the Dinosaur Point Use Area under Alternative 2 would be limited to constructing restrooms with flush toilets. This alternative would allow for prescribed burns in the BC zone, away from visitor areas, as a fuel management measure. Street luge events would continue to be allowed with CSP's permission.

At San Luis Creek Use Area, Alternative 2 would provide for a new boarding float and ADA accessible fishing access (such as a pier). The existing lifeguard stand would be upgraded or replaced, and opportunities for concessions (such as food service or kayak, boat, and personal watercraft rentals) would be explored. The five group picnic facilities would be expanded to accommodate larger groups. Alternative 2 would allow for a multipurpose building to be constructed for interpretive activities, slideshows and movies, or other visitor events. Existing interpretive exhibits would be maintained, and additional interpretive exhibits and programs would be provided. Thirty tent sites would be added on the northwest shoreline of San Luis Creek Use Area. Existing paved walking paths could be connected to form longer trails.

Hunting access to Lower Cottonwood Wildlife Area, outside of the Plan Area, would be provided as it is now through the San Luis Creek Use Area entrance road. This alternative would provide for working with DFG to reduce conflicts with hunting access such as park use hours, gates, etc., in accordance with Goal REG-C1 (Interagency Cooperation) and its guidelines.

At the Medeiros Use Area, additional tent/RV or primitive campsites are not proposed, but additional camping would be added across O'Neill Forebay at the San Luis Creek Use Area, as noted above. Alternative 2 would allow for consideration of reopening or relocating the Medeiros Use Area boat launch.

No changes are proposed for the existing OHV Use Area. OHV use will be restricted to trails (including the existing track) and roads, in conformance with PRC Section 5001A3. Seasonal restrictions for Red Sticker OHVs will be continued.

At the Los Banos Creek Use Area, the addition of up to 30 tent sites and restrooms with flush toilets at the North Shore campground would be explored. The relocation of the existing equestrian camp would be considered, but the entrance station, maintenance facilities, and staff housing would remain in their current locations.

Alternative 2 would allow for creating additional interpretive programs, which would include the themes described in Section 4.2.2.3.

**Local and Regional Planning.** Alternative 2 and the other action alternatives provide for coordination among the four managing agencies (DWR, DFG, CSP, and Reclamation) as well as with other agencies and stakeholders (Goals REG-C1 and REG-C2, Interagency Cooperation). All action alternatives would also

provide for addressing conflicts between hunting and other uses on lands surrounding the Dinosaur Point Use Area.

**Infrastructure and Operations.** Under Alternative 2, the managing agencies would work with Caltrans to identify alterations to existing roadways, including improved turning lanes on SR 152 and SR 33 at Plan Area entrances, and improved access routes between SR 152 and Basalt Use Area, and between SR 152 and San Luis Creek Use Area. The managing agencies would also work with other agencies to improve signage outside of the Plan Area and at Plan Area entry points. The road at the entrance station to Los Banos Creek Use Area would be improved to address periodic flooding issues from heavy rains and federally mandated water releases, which result in occasional closure of the area's access road. The improvements would allow uninterrupted access to the reservoir. Management actions related to circulation are consistent with Goals OPS-A1 through OPS-A4 (Plan Area Access and Circulation).

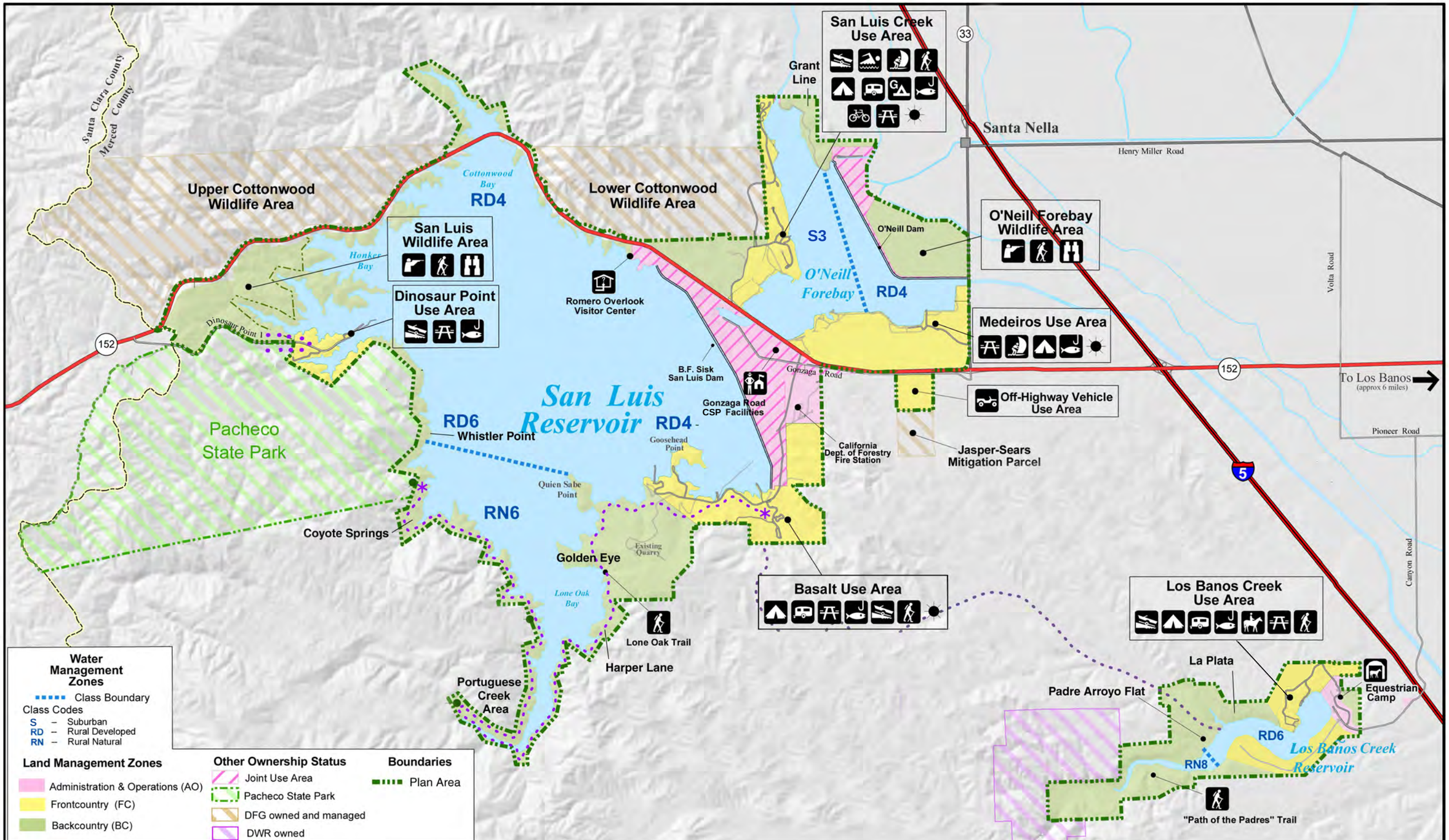
Utility upgrades would be necessary over time to adhere to current standards. Upgrades would include wear items on specific utilities, replacement of broken or damaged equipment, and replacing older equipment that is determined unsafe, as generally directed by Goal OPS-U1 (Utilities). Existing lighting would be maintained and repaired using energy-efficient fixtures. Carbon-reducing features such as solar panels would be added. Otherwise, operations and management facilities would not be improved or expanded. No new operational and management facilities would be constructed at Los Banos Creek Use Area.

**Water Operations.** In Alternative 2 and the other action alternatives, the managing agencies would provide information about to how obtain wind and water level information (Goal RES-C1, Climate). Visitor access to sensitive areas such as dams and other water conveyance facilities and structures would be clarified (Goal WA-A1, Restriction of Access to Dams and Power Facilities).

### 4.4.3 Alternative 3: Moderate New Access and Development

The primary components of this alternative are similar to those in Alternative 2 (Section 4.4.2), except Alternative 3 proposes additional development to accommodate visitor use and programs. The locations of new facilities and features of Alternative 3 are shown on Map 10 and listed in Table 4-1. The following description of Alternative 3 is organized by the planning areas defined in Section 3.4.

**Resource Management.** Alternative 3 proposes several physical additions and visitor use modifications, primarily on SRA lands within the Plan Area. The




Source: USGS DRG

1 0.5 0 1 2 Miles

Scale 1 : 79,200
1" = 1.25 miles

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## Existing Recreation Resources and Uses

**Facilities**
- Ranger Station
- Visitor Center
- Wind Warning Light

**Camping**
- Tenting
- Recreational Vehicle
- Group Site
- Horse Camping

**Recreation Uses and Activities**
- Boat Launch
- Windsurfing
- Swimming
- Fishing
- Hunting
- Equestrian
- Bicycling
- Off-Highway Vehicle
- Wildlife Viewing
- Hiking
- Day Use

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**San Luis Reservoir State Recreation Area**

**MAP 10**
**Alternative 3**

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additions would be sited and developed to avoid conflicts with the Plan Area's sensitive resources (Goal VIS-F1). This alternative would implement the same focused management plans and other resource management elements as Alternative 2 (Section 4.4.2). As with Alternative 2, the focused management plans would be implemented within three to five years of Plan adoption. Visitor facility modifications are consistent with Goals VIS-F1 through VIS-F3 (Visitor Uses/Opportunities and Facilities) and provide for a greater level of future recreation demand than Alternative 2. In three locations described further below, these modifications result in changes to WROS and land management zone designations. Alternative 3 includes management actions that increase Plan consistency with Goals VIS-T1 through VIS-T4 (Trails), Goal VIS-C1 (Concession Opportunities), and Goal REG-L1 (Linkages).

Under Alternative 3, the land management designation of the Medeiros Use Area BC zone would change to FC accommodate an increase in visitor facilities. However, grazing would continue to be allowed in accordance with federal and state policy guidelines and with completion of NEPA and CEQA analysis prior to renewal of the grazing lease, unless grazing results in conflicts with visitor or other uses.

**Visitor Experience, Interpretation, and Education.** As with Alternative 2, a partnership with DWR for development of interpretive programs at the Romero Visitor's Center would be considered.

At Basalt Use Area, a multi-use trail for hiking, cycling, and equestrian use would be developed to link the area with Pacheco State Park. The trail would include a spring-fed water station and a backpackers' campground with vault toilets and up to 10 tent sites along the way. Providing a way for Plan Area users to connect with adjacent preserved lands would help to satisfy Goal REG-L1 (Linkages). In addition to reconfiguring the 79 existing tent/RV sites to accommodate larger RVs, 30 RV campsites with full hookups (electrical, water, and sewer) would be added. Alternative 3 would add a new group camp that could accommodate up to 60 people, as well as alternative overnight lodging such as cabins or yurts. As with Alternative 2, the existing campfire center would be upgraded to accommodate regular programs and group events. Because Alternative 3 would provide for a greater degree of active visitor activity in and around Basalt Use Area, the WROS designation for the eastern part of San Luis Reservoir would change from RD5 (for Alternatives 1 and 2) to RD4, closer to a Suburban WROS designation. Target boat densities would not change, as the same range applies to all Rural Developed WROS designations (Section 4.3.2.4). Except for the new multi-use trail that would pass through the BC Zone of Basalt Use Area, the other proposed visitor facilities would be focused in the FC Zone. The boundaries of the land management zones would also remain the same. At Dinosaur Point Use Area, Alternative 3 would allow for the construction of restrooms with flush toilets, the addition of 30 shade ramadas and 30 tent campsites, and development of trails linking the use area to Pacheco State Park and San Luis Wildlife Area. The trail to Pacheco State Park could link with the trail from Basalt Use Area to the state park, effectively linking the two use areas (Goal REG-L1, Linkages).

At San Luis Creek Use Area, Alternative 3 would provide a new boarding float and ADA-accessible fishing access, upgrade or replace the lifeguard stand, connect existing paved trails, explore concession opportunities, provide a multipurpose building, and add 30 tent sites to the northwest shoreline as described for Alternative 2. The boat launch would be expanded by addition of a launch lane and a boarding float, and a children's fishing area would be added. The existing group picnic facilities would remain in place, and up to five additional group picnic facilities would be added (two for 25 to 35 people, two for 45 to 60 people, and one for 75 to 100 people). A group campsite for up to 90 campers would be added along with alternative overnight lodging such as up to 15 cabins or yurts. Some additional facilities could be sited in the extreme northwest corner of the use area, beyond the San Luis Creek campground. Because Alternative 3 would provide for a greater amount and intensity of visitor activity in and around San Luis Creek Use Area, the WROS designation for the western part of O'Neill Forebay would change from S4 (for Alternatives 1 and 2) to S3, closer to an Urban WROS designation. Target boat densities would not change, as the same range applies to all Suburban WROS designations (Section 4.3.1.4). As all proposed visitor facilities would be focused in the FC Zone, the boundaries of the land management zones would also remain the same.

At the Medeiros Use Area, Alternative 3 would also explore enhancements to allow reopening/relocating the boat launch as with Alternative 2, and would also add a parking lot and restrooms near the boat launch. Up to 100 new tent/RV sites and 100 primitive campsites would be added to the campground. A restroom/shelter with parking would be added. This alternative would convert the existing BC Zone of Medeiros Use Area to FC to accommodate additional visitation. Likewise, the WROS designation for the western part of O'Neill Forebay would change from RD5 (for Alternatives 1 and 2) to RD4, closer to a Suburban WROS designation. Target boat densities would not change, as the same range applies to all Rural Developed WROS designations (Section 4.3.2.4).

Alternative 3 would allow for minor additions to existing facilities at the OHV Use Area such as shade ramadas, vault toilets, up to six primitive campsites (with picnic tables, fire rings, and food lockers), and infrastructure improvements. The OHV Use Area could be expanded if additional adjacent property becomes available. If property were acquired for expansion, additional environmental review and a Plan amendment would be necessary.

As with Alternative 2, the addition of up to 30 tent sites on the North Shore at Los Banos Creek Use Area would be explored, along with the relocation of the equestrian camp. Under Alternative 3, up to 20 tent/RV sites would be added on the South Shore of Los Banos Creek Reservoir just off of Canyon Road, in an area where no formal visitor facilities currently exist. In addition, a new entrance station would be constructed at the Plan Area boundary, and maintenance facilities and staff housing would be relocated. As a result of the new visitor facilities on the South Shore, the land management zone designation in the approximate area of the tent/RV sites would change from BC to FC. The

relatively small amount of additional visitor facilities would not result in any changes to WROS zones or target boat density at Los Banos Creek Reservoir.

Both Alternatives 2 and 3 would allow for creating additional interpretive programs, which would include the themes described in Section 4.2.2.3.

Alternative 3 proposes a greater degree of facility expansion than Alternative 2, but the changes would be predominantly confined to existing use areas.

**Local and Regional Planning.** This alternative would facilitate local and regional planning objectives by considering development of a multi-use trail linking Basalt Use Area with Pacheco State Park and another trail linking Dinosaur Point to adjacent Pacheco State Park and San Luis Wildlife Area, thereby enhancing the use and benefits of contiguous open space (Goal REG-L1, Linkages). It would also address hunting-related conflicts, in keeping with Goal VIS-F2 (Visitor Uses/Opportunities and Facilities). As with Alternative 2, Alternative 3 would provide for coordination among the four managing agencies in the Plan Area as well as with other agencies and stakeholders.

**Infrastructure and Operations.** Alternative 3 proposes the same circulation measures as Alternative 2 (Section 4.4.2). In addition, Alternative 3 proposes working with Caltrans to explore constructing an interchange at San Luis Creek Use Area for access from SR 152, with a limited access overcrossing connecting that area with the SRA administrative offices and Gonzaga Road. A crossing from Gonzaga Road to Medeiros Use Area with a blending lane onto SR 152 would also be explored. At the San Luis Creek Use Area, in the vicinity of the San Luis Creek Campground, Alternative 3 would allow for a new road that would provide vehicle access to the fishing area at Check 12 and potential new camping areas in the extreme northwest corner of the use area. At Medeiros Use Area, Alternative 3 would allow for paving all unpaved roads. As with Alternative 2, utilities would be upgraded as necessary to adhere to current standards. Under Alternative 3, additional utility connections would be installed as needed in areas of new or expanded development, to allow for hookups or additional electrical demand (Goal OPS-U1, Utilities). Carbon-reducing features such as solar panels would be added. Existing lighting would be maintained and repaired using energy-efficient fixtures, and additional lighting would be installed where appropriate.

**Water Operations.** As with Alternative 2 (Section 4.4.2), the managing agencies would provide information about how to obtain wind and water level information, and visitor access to sensitive areas such as dams and other water conveyance facilities and structures would be clarified. Engineering solutions would be explored to improve safety and access in shallow water areas at low pool levels (e.g., dredging and removal of sandbars), particularly at O'Neill Forebay, which would be consistent with Goal WA-E1 (Water Level Fluctuations).

### 4.4.4 Alternative 4: Maximum New Access and Development

The primary components of this alternative are similar to those in Alternative 3; however, Alternative 4 proposes some alternate ways of providing access, more

intensive development of certain use areas, and access and facilities in areas that are currently undeveloped. Some of the elements of Alternative 4 are based on proposals from previous documents for Plan Area development (see Section 3.1 and Appendix A, Table A-1) that were never implemented or constructed. In six locations described further below, management actions for Alternative 4 would result in changes to WROS and land management zone designations.

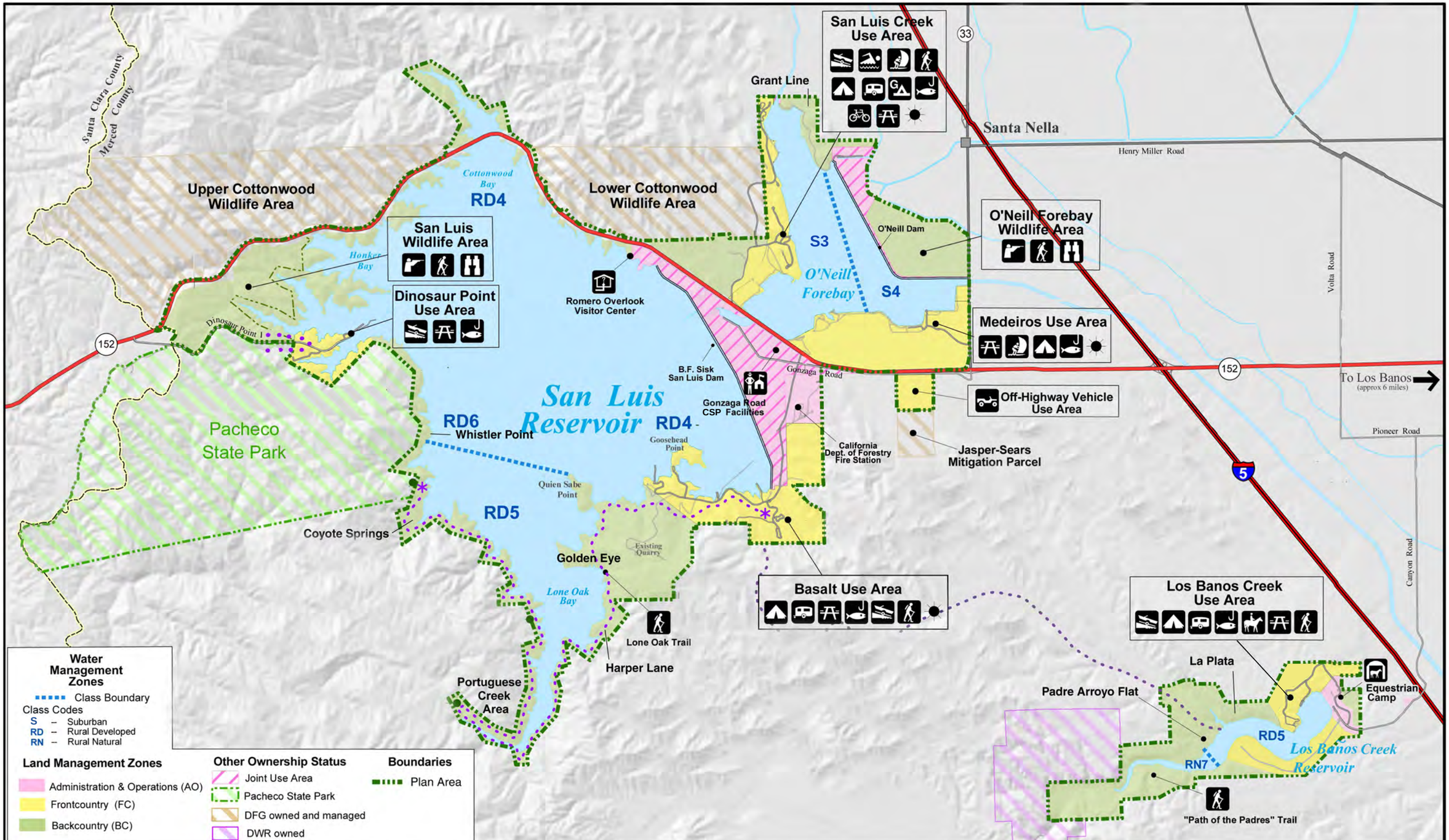
Locations of new facilities and features of Alternative 4 are shown on Map 11 and listed in Table 4-1. The following description of Alternative 4 is organized by the planning areas defined in Section 3.4.

**Resource Management.** Alternative 4 would include the same focused resource management plans as Alternatives 2 and 3 (Sections 4.4.2 and 4.4.3). As with Alternatives 2 and 3, the focused management plans would be prepared within three to five years of Plan adoption.

**Visitor Experience, Interpretation, and Education.** This alternative proposes some expansion in visitor facilities. Visitor facility modifications are generally consistent with Goals VIS-F1 through VIS-F3 (Visitor Uses/Opportunities and Facilities) and provide for the maximum level of future recreation demand of the three action alternatives. Alternative 4 includes management actions that increase Plan consistency with Goals VIS-T1 through VIS-T4 (Trails), Goals VIS-I1 through VIS-I3 (Interpretation and Education), Goal VIS-C1 (Concession Opportunities), and Goal REG-L1 (Linkages).

Alternative 4 would allow for a new visitor's center at the Gonzaga Road Facilities Area. One of the buildings adjacent to CSP headquarters for the Plan Area has a large room with a relief map of the Plan Area and other interpretive displays. Alternative 4 would provide for any additions and modifications needed for the space to serve as a visitor center. As with Alternatives 2 and 3, a partnership with DWR for development of interpretive programs at the Romero Visitor's Center would be considered.

At Basalt Use Area, guided tours of Basalt Quarry would be allowed in coordination with DWR, which is consistent with the interpretive themes and guidelines in Goal VIS-I1 and VIS-I3 (Interpretive Themes). As with Alternative 3, Alternative 4 would include a multi-use trail to Pacheco State Park for hiking, cycling, and equestrian use. In addition to the campground modifications proposed in Alternative 3, Alternative 4 would add hookups to all campsites, a laundry facility, and a refreshment stand. Alternative 4 would add a group camp for up to 100 people (compared to 60 people for Alternative 3) and provide alternative overnight lodgings such as cabin and yurts with utilities. Instead of upgrading the existing campfire center (proposed for Alternatives 2 and 3), Alternative 4 would replace it with an amphitheater to accommodate larger groups. As with Alternative 3, Alternative 4 would have a WROS designation of RD4 for the eastern part of San Luis Reservoir (compared with RD5 for Alternatives 1 and 2). Target boat densities and boundaries of the land management zones would remain the same.




Source: USGS DRG

1 0.5 0 1 2 Miles

Scale 1 : 79,200
1" = 1.25 miles

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**Existing Recreation Resources and Uses**

**Facilities**
- Ranger Station
- Visitor Center
- Wind Warning Light

**Camping**
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- Recreational Vehicle
- Group Site
- Horse Camping

**Recreation Uses and Activities**
- Boat Launch
- Windsurfing
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- Fishing
- Hunting
- Equestrian
- Bicycling
- Off-Highway Vehicle
- Wildlife Viewing
- Hiking
- Day Use

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**San Luis Reservoir State Recreation Area**

**MAP 11**
**Alternative 4**

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Alternative 4 would provide additional facilities along the southern part of San Luis Reservoir in areas that were envisioned for development in earlier planning documents (see Section 3.1 and Appendix A, Table A-1) but never developed. Due to its steep topography, the southern part of San Luis Reservoir (Lone Oak Bay and Portuguese Creek) can be subject to extreme water level fluctuations that are not compatible with boat-in camping and day use. Therefore, Alternative 4 includes access and facility development that is limited to landside areas in the BC Zone: a group picnic facility with shade ramadas at Quien Sabe Point, accessible by foot, bike, or horseback; a campground at Golden Eye with up to 25 tent sites; a backpackers campground at Harper Lane with up to 10 tent sites; and an equestrian camp and primitive trail access camping at Coyote Springs (see Map 11). The additional visitor access and facilities are not of a magnitude that would merit changing the BC Zone designation to FC. However, the visibility of additional visitors and facilities from the water surface in this relatively isolated area would result in a change in WROS zone from RN6 (with Alternatives 1, 2, and 3) to RD5, reflecting a greater overall degree of development. Accordingly, this WROS designation accommodates a greater target boat density for the southern part of San Luis Reservoir: 20 to 50 acres per boat for RD Zones compared with 50 to 110 acres per boat for Rural Natural.

At Dinosaur Point, Alternative 4 proposes to expand the existing four-lane boat launch, allow for construction of a marina, and provide for concessions. In addition to adding 30 tent campsites (as with Alternative 3), Alternative 4 would allow primitive boat-in and trail access camping at Whistler Point to the south, and boat-in, low-impact day use such as picnicking and hiking at Honker Bay to the north (see Map 11). Like Alternatives 2 and 3, Alternative 4 would allow street luge events with permission from CSP.

Alternative 4 would include some features proposed in Alternative 3 at San Luis Creek Use Area. It would construct a new boarding float and ADA-accessible fishing pier, upgrade or replace the lifeguard stand, allow for connecting paved paths, explore concession opportunities, expand the boat launch, provide a multipurpose building for group events and interpretive programs, and add up to 30 tent sites on the northwest shoreline. However, Alternative 4 would also allow for construction of a marina and a separate launch area for personal watercraft. Like Alternative 3, Alternative 4 would provide up to five additional group picnic facilities at day use areas, but instead of two picnic areas for groups of 45-60 people each, Alternative 4 would include four such group picnic areas. In addition to the multipurpose building for group events and interpretive programs (Alternatives 2 and 3), Alternative 4 would provide an amphitheater in the North Beach area. This alternative would also add two group campsites for up to 100 campers each, add up to 30 cabins or yurts with utilities, and in the Grant Line area on the northeast side of O'Neill Forebay, allow boat-in primitive camping (Grant Line can only be accessed by boat). Some additional facilities could be sited in the extreme northwest corner of the use area, beyond the San Luis Creek campground. As with Alternative 3, Alternative 4 would have a WROS designation of S3 for the western part of O'Neill Forebay (compared with S4 for

Alternatives 1 and 2). Target boat densities and boundaries of the land management zones would remain the same.

Under all three action alternatives, the managing agencies would work with DFG to reduce conflicts with hunting access to San Luis Wildlife Area.

At Medeiros Use Area, Alternative 4 includes the same components proposed for Alternative 3 but also provides for substantial additional development, consistent with the availability of undeveloped land as well as actions proposed in previous planning documents but not implemented (Section 3.1 and Appendix A, Table A-1). Alternative 4 would increase overnight capacity by adding up to 150 new tent/RV sites and 100 primitive campsites (50 more tent/RV sites than Alternative 3), a wayside campground near the Medeiros entrance station, and alternative overnight lodging such as cabins or yurts with utilities. Alternative 4 would also provide for a windsurfing launch area, a water-themed interpretive program with a wetlands demonstration area to interpret the function and need for wetlands, as well as a water-based play area for children that demonstrates the need for and value of water quality and quantity. Finally, this alternative would allow for construction of a restaurant and motel in coordination with a long-term concessionaire. As with Alternative 3, Alternative 4 would convert the existing BC zone of Medeiros Use Area to FC to accommodate the increase in visitation. Alternative 4 would discontinue grazing in Medeiros Use Area as it may conflict with increased visitor use in that area.

Because Alternative 4 would provide for the greater degree of visitation than the other alternatives, the WROS designation for the eastern part of O'Neill Forebay would change from RD5 for Alternatives 1 and 2 and RD4 for Alternative 3 to S4, reflecting a shift from Rural Developed to Suburban. Accordingly, this WROS designation accommodates a greater target boat density for the eastern part of O'Neill Forebay: 10 to 20 acres per boat for S Zones compared with 20 to 50 acres per boat for RD Zones.

At the OHV Use Area, Alternative 4 would provide for the addition of underground utilities such as water and power. Up to six primitive campsites (with picnic tables, fire rings, and food lockers) could be added. This alternative would allow for more intensive activity in the OHV Use Area, such as by constructing a professional motocross track. If additional adjacent property becomes available, the OHV Use Area could be expanded. If property were acquired for expansion, additional environmental review and a Plan amendment would be necessary.

At Los Banos Creek Use Area, Alternative 4 proposes the same management actions as Alternative 3. Outside of the use area, Alternative 4 would provide up to 40 tent/RV sites on the South Shore just off of Canyon Road (compared with 20 tent/RV sites for Alternative 3). This alternative would also allow for 40 tent sites and a group camp in the La Plata area (west of Los Banos Creek Use Area) and boat-in primitive camping at Padre Arroyo Flat (Map 11). Finally, Alternative 4 would allow for creation of a trail linking Los Banos Creek Use Area to Basalt

Use Area, consistent with Goal REG-L1 (Linkages). The trail could incorporate segments of decommissioned county roads that lie between the two areas. As the trail would cross private property between the two use areas, any trail development and use would have to be with permission from the affected landowners. As with Alternative 3, the land management zone designation in the approximate area of the new South Shore tent/RV sites would change from BC to FC to accommodate the new visitor facilities. Under Alternative 4, an additional area of the North Shore would also change from BC to FC because of the proposed facilities at La Plata and Padre Arroyo Flat. The presence and visibility of additional visitors, facilities, and potentially vehicles from the water surface would result in changes in WROS zones. The western side of Los Banos Creek Reservoir would be RN7, compared with RN8 for all other alternatives. The eastern side of the reservoir would be RD5, compared with RD6 for all other alternatives. The target boat density would remain the same.

In general, Alternative 4 proposes a greater degree of facility expansion than Alternatives 2 and 3. Some additional facilities and uses, such as those along the southern part of San Luis Reservoir and south and west of Los Banos Creek Use Area, would extend into undeveloped areas.

**Local and Regional Planning.** This alternative would facilitate local and regional planning objectives as described for Alternative 3.

**Infrastructure and Operations.** Alternative 4 would provide for the same management actions related to circulation and utilities as Alternative 3. However, it would also allow for working with Caltrans to explore creation of a new exit from I-5 to Canyon Road for access to Los Banos Creek Use Area.

**Water Operations.** Water operations improvements proposed in Alternative 4 would be the same as proposed in Alternative 3. The managing agencies would provide information about how to obtain wind and water level information, and visitor access to sensitive areas such as dams and other water conveyance facilities and structures would be clarified. Alternative 4 would provide for engineering solutions to be explored to improve safety and access in shallow water areas at low pool levels.

## 4.5 Carrying Capacity

PRC §5019.5 requires CSP to assess carrying capacity as part of General Plans for SRAs. Recreation carrying capacity has been defined as “a prescribed number and type of visitors that an area will accommodate given the desired natural/cultural resource conditions, visitor experiences, and management programs” (CSP 2010). The assessment helps to ensure that future visitor attendance and use do not exceed an SRA’s ecological, spatial, facility, or social capacity. Exploring capacity is important in determining where capacity concerns may exist and where management priorities and monitoring programs should be directed. This section discusses the existing capacity of developed facilities in the Plan Area, adaptive

management measures that may be used to achieve sustainable resources and social conditions during the planning horizon, and Plan Area quality indicators.

### 4.5.1 Existing Capacity

A summary of visitor use, parking capacity, and existing facilities is presented in Table 4-2. Table 4-3 provides details about ongoing or proposed facility improvements that will take place independent of Plan implementation. Together, this information describes the baseline condition for carrying capacity.

**Table 4-2**
**Visitor Use, Existing Parking Capacity, and Existing Facilities**

| Use Area | Visitors[1] | Existing Parking Capacity[2] | Existing Facilities |
|---|---|---|---|
| San Luis Creek | | 698 auto spaces | – |
| Paid day use | 137,913 | – | 148 shade ramadas[3] |
| Free day use | 11,705 | – | |
| Overnight use | 10,987 | – | 53 tent/RV[4]<br>2 group sites (90 people) |
| Boats launched | 3,371 | (181 spaces for autos with boat trailers) | 3-lane launch |
| Non-vehicle day use | N/A | – | – |
| Group camp | 360 | – | – |
| Total | 164,336 | 698 | 55 campsites/148 ramadas (1,191 people) |
| Medeiros | | 300 (informal) | – |
| Paid day use | 43,895 | – | 50 shade ramadas |
| Free day use | 5,732 | – | |
| Overnight use | 9,479 | – | 50 tent/RV<br>300 primitive[5] |
| Boats launched | N/A | – | – |
| Non-vehicle day use | 834 | – | – |
| Group camp | N/A | N/A | N/A |
| Total | 59,950 | 300 | 350 campsites/50 w/ shade ramadas (1,020 people) |
| Basalt | | 511 auto spaces | – |
| Paid day use | 32,752 | – | – |
| Free day use | 5,989 | – | – |
| Overnight use | 4,658 | – | 79 tent/RV |
| Boats launched | 2,010 | (54 spaces for autos with boat trailers) | 4-lane launch |

**Table 4-2**
**Visitor Use, Existing Parking Capacity, and Existing Facilities**

| Use Area | Visitors[1] | Existing Parking Capacity[2] | Existing Facilities |
|---|---|---|---|
| Non-vehicle day use | N/A | – | – |
| Group camp | N/A | – | – |
| Total | 45,409 | 511 | 79 campsites (315 people) |
| Dinosaur Point | | 123 auto spaces | |
| Paid day use | 17,441 | – | 5 shade ramadas |
| Free day use | 3,727 | – | |
| Overnight use | N/A | – | 0 |
| Boats launched | 1,845 | (additional auto and boat trailer parking on boat ramp) | 4-lane launch |
| Non-vehicle day use | N/A | – | – |
| Group camp | N/A | – | – |
| Total | 23,013 | 123 | 5 shade ramadas (30 people) |
| Los Banos Creek | | 40 | – |
| Paid day use | 22,649 | – | – |
| Free day use | 3,810 | – | – |
| Overnight use | 3,640 | – | 14 tent/RV w/shade ramadas |
| Boats launched | 2,390 | (All spaces allow autos with boat trailers) | 2-lane launch |
| Non-vehicle day use | N/A | – | – |
| Group camp | N/A | – | N/A |
| Total | 32,489 | 40 | 14 campsites w/shade ramadas (56 people) |
| OHV Use Area | N/A | 30 (informal) | – |
| Paid day use | N/A | 30 | |
| GRAND TOTAL | 490,691 | 1702 | **- 497 campsites** (176 tent/RV, 300 primitive, 14 tent, 63 w/shade ramadas)<br>- 48 day use shade ramadas<br>**(2,612 people)** |

Notes:
[1] FY 2008–2009 visitor data from CSP Four Rivers Sector 2010.
[2] Data taken from Table 2-23. Parking does not include spaces provided as part of campgrounds.
[3] Assumed 6 persons per shade ramada.
[4] Assumed 3 persons per tent site and 5 persons per RV site. To calculate total visitors, mixed sites were assumed to be used for tent sites and one half for RVs.
[5] Assumed 2 persons per primitive site.

**Table 4-3**
**Facility Summary Update**

| | Projects Completed since FY 2009-2010 | Future Planned Projects |
|---|---|---|
| Plan Area-wide, where appropriate | Wind warning light upgrades | None |
| | Solar gates at four entrance areas | |
| San Luis Creek | Water treatment plant and lift station upgrades at group and day use areas | Install an ADA fishing pier near the boat ramp area |
| | | Upgrade boat ramp |
| Medeiros | Completion of ADA updates to three new vault toilets | None |
| Basalt | Water treatment plant upgrade | Launch ramp |
| Dinosaur Point | None | Launch ramp parking area upgrades |
| Los Banos Creek | New replacement water tanks | None |
| | Four new ADA day-use picnic sites | |
| O'Neill Forebay | Installation of one new wind warning light tower and light | None |
| | ADA trail improvements | |

**Source:** CSP Four Rivers Sector 2012.

Table 4-2 attempts to quantify the approximate number of visitors that can be accommodated at any one time at each use area (see the Total for each use area under "Existing Facilities"). As monthly attendance figures by use area are not available for recent fiscal years, it is not possible to quantify when and how often capacity is exceeded. However, a 2008 survey of CSP staff provided the following capacity recommendations (Aukerman, Haas, and Schuster 2008):

- San Luis Reservoir – Increase opportunities for boat mooring and boat rentals; add group camping and day use facilities.
- O'Neill Forebay – Increase group camping capacity, add launch facility, add restroom at Medeiros Use Area; to accommodate high levels of visitation on holiday weekends, add day use sites and parking.
- Los Banos Creek Reservoir – Add camping and day use facilities to accommodate high levels of visitation on holiday weekends.

Insufficient data exists to precisely quantify other parameters such as ecological or social capacity. However, the goals and guidelines outlined in Section 4.2 provide qualitative parameters for attaining the desired natural and cultural resource conditions, visitor experiences, and management efforts that are compatible with the existing and maximum future capacity of the Plan Area.

Part of Plan implementation will be to gather more information about visitor demographics and facility use as well as natural and cultural resource capacity. This will serve to create a more thorough baseline from which to verify if the proposed uses and facilities in this Plan are meeting the desired future conditions

in the Plan Area (outlined in Sections 4.2 and 4.3) and the desired indicators and standards (see Section 4.5.3).

### 4.5.2 Adaptive Management

Adaptive management is an explicit and analytical process for adjusting management and research decisions to better achieve management objectives. The process includes a number of steps, beginning with the identification of issues, opportunities, and constraints (discussed in Section 3.4), a vision for the Plan Area (Section 4.1), and goals and guidelines for visitor use management that will lead to the desired future conditions (Section 4.2). The goals and guidelines and management zones established in this Plan serve to prescribe the future carrying capacity of the Plan Area by identifying the maximum number of facilities that may ultimately be developed. Adaptive management is an ongoing, iterative process of determining desired conditions, selecting and monitoring indicators and standards that reflect these desired conditions, and taking management action when the desired conditions are not being realized. If the managing agency determines that a specific location within the Plan Area is not meeting the desired future conditions, then management action would begin. Management action could determine that the violation was caused by natural variation (e.g., by a storm) or by human-induced variables (e.g., trampling associated with hiking). Management actions should comply with the requirements of NEPA/CEQA and other applicable regulations and could include, but are not limited to, the following:

- Site management (e.g., facility design, barriers, site hardening, area/facility closure, redirection of visitors to suitable sites);
- Regulation (e.g., the number of people, the location or time of visits, permitted activities, or allowable equipment);
- Enforcement of regulations (e.g., patrols, notification, citations);
- Education (e.g., information signs and exhibits, interpretive programs, visitor's center exhibits, brochures and fliers, public meetings, meetings with user groups); and
- Altering access (e.g., parking in proximity to sensitive resources, limiting certain types of access such as vehicular access in certain areas).

### 4.5.3 Plan Area Quality Indicators

Indicators and standards of quality are integral components of determining recreation carrying capacity of an area. Indicators are defined as measurable, manageable variables that help define the quality of the visitor experience; standards of quality are defined as the minimum acceptable condition of indicator variables (Manning 2001). Quality indicators assist land managers in determining whether desired future conditions are being met. For each of the planning areas, an overall goal is presented in Table 4-4, and quality indicators and corresponding management actions are shown to provide examples of indicators and adaptive management actions that could be used. These will be enhanced as the Plan is implemented.

**Table 4-4**
**Plan Area Quality Indicators**

| Planning Area | Goal | Quality Indicators | Possible Management Actions |
|---|---|---|---|
| Resource Management | Protect and preserve, restore, and rehabilitate the physical, cultural, scenic, vegetative, and wildlife resources. | | |
| Scenic/Aesthetic | | - Scenic vistas are reduced or interrupted with features not compatible with landscape character.<br>- New facilities dominate the landscape. | - Remove incompatible structure or elements. |
| Cultural/Historic | | - Cultural resources are threatened or lost during construction. | - Where required, a qualified archaeologist will be present during construction or redesign project to avoid potential damage to resources. |
| Geology/Soils | | - Erosion is occurring along trails or adjacent areas as evidenced by exposed tree roots and ruts. | - If erosion is caused by visitor use, limit intensity, duration, or type of use accordingly.<br>- Consider trail closure and removal or relocation. |
| Hydrology | | - Sedimentation is evident in ponds and springs. | - Ensure adequate plant cover over easily eroded soils or provide temporary stabilization during construction. |
| Vegetation | | - There are reduced occurrences of special-status species.<br>- Invasive species are spreading or new occurrences are becoming evident. | - Restore habitat or reintroduce lost species.<br>- Increase or alter removal program for invasive species.<br>- Revegetate disturbed areas with native species. |
| Wildlife | | - Wildlife is disturbed. | - Implement avoidance measures where necessary during construction |

**Table 4-4**
**Plan Area Quality Indicators**

| Planning Area | Goal | Quality Indicators | Possible Management Actions |
|---|---|---|---|
| Visitor Use and Experience | Preserve and enhance optimum and diverse experiences for a wide range of visitors. | | |
| Visitor Facilities | | - Visitors complain about lack of necessary facilities or overcrowding. | -Improve facilities to accommodate visitor use.<br>- Limit access during peak times. |
| Trails | | - Conflicts such as accidents occur between users on multi-use paths. | - Consider limiting use of certain trails during peak times.<br>-Increase and improve signage<br>-Increase visitor education<br>-Increase patrols including volunteer multi-use patrols |
| Interpretive Themes | | - Visitors complain about lack of Plan Area information.<br>- Visitors display disrespect toward Plan Area resources. | - Interpretive materials and programs may need to be increased and/or improved. |
| Concession Opportunities | | - Certain key interpretive programs cannot be fully implemented without concessionaire participation. | - Supplement interpretive activities with seasonal or temporary assistance, or from concessionaires. |
| Infrastructure and Operations | Ensure efficient, safe, and adequate infrastructure and operations. | | |
| Plan Area Access and Circulation | | - Accidents occur at SR 152 accessing the Plan Area. | - Work with Caltrans to get improvements funded and implemented. |
| Staffing Needs and Facilities | | - Safety or overcrowded conditions are prevalent.<br>- Seasonal workers cannot be accommodated. | - Explore feasibility of upgrading existing structures.<br>- Add housing onsite. |

**Table 4-4**
**Plan Area Quality Indicators**

| Planning Area | Goal | Quality Indicators | Possible Management Actions |
|---|---|---|---|
| Utilities | | - Overcrowding of sanitary facilities reduces visitor experience | - Add or improve facilities to handle peak use. |

# 5 Environmental Analysis

## 5.1 Introduction

### 5.1.1 Integrated Environmental Impact Statement/Environmental Impact Report

Both the NEPA and the CEQA encourage the use of an integrated EIS/EIR. CEQA and its guidelines contain numerous provisions allowing state and local agencies to use an EIS as a substitute for an EIR. The joint RMP/GP for the Plan Area, including the environmental analyses, is consistent with NEPA and CEQA requirements (40 CFR Parts 1500-1508; California PRC Section 21000 et seq.; California Code of Regulations [CCR] Section 15000 et seq.).

### 5.1.2 Purpose

The purpose of the EIS/EIR is to inform decision-makers and the public about any effects that could result from the implementation of the Plan. The EIS/EIR also provides information on potential growth-inducing impacts and cumulative impacts of past, present, and reasonably foreseeable future projects.

As required under NEPA, this Draft EIS/EIR includes a description of the proposed action, an evaluation of the potential impacts of each alternative at equal levels of detail, and a description of the environmentally preferable alternative. As required under CEQA, an environmentally superior alternative is identified.

This document is a programmatic Draft EIS/EIR for the Plan and, as such, does not contain project-specific analysis of proposed projects or management actions included in each alternative. Additional management planning, schematic design, and construction documentation would be completed as necessary before improvements were made. The information currently available is insufficient to support a project-specific analysis, but future projects would undergo subsequent NEPA and/or CEQA review as appropriate.

This programmatic Draft EIS/EIR is intended for use in a “tiered” process of environmental review, and the discussion of project impacts is commensurate with the level of specificity of this Plan. Tiering in an EIS/EIR on a programmatic plan allows agencies to deal with broad environmental issues at the planning stage, followed by more detailed examination of actual development projects (that are consistent with the Plan) in subsequent NEPA and CEQA assessments. The assessments may later incorporate by reference the general discussion from the programmatic EIS/EIR, in this case the Plan, and concentrate solely on the issues specific to the later projects (PRC Section 21093: State CEQA Guidelines; CCR Section 15152 [40 CFR 1508.28]). Accordingly, the Plan and Draft EIS/EIR constitute the first (broadest and most general) tier of environmental review.

Specific projects considered in this Plan may require subsequent environmental review that would tier off of this programmatic Draft EIS/EIR.

### 5.1.3 Focus

Reclamation and CSP established the focus of this Draft EIS/EIR after considering comments from public agencies and the community regarding the Plan (Section 6.1). Comments received on the 2005 Draft EIR were also reflected in the focus of this document. In addition, the preparers of this EIS/EIR coordinated with public agencies including the County of Merced, the SJVAPCD, and the DWR in the process of updating and revising the 2005 Draft EIR. Chapter 6 describes the public and agency involvement conducted to date.

### 5.1.4 Environmental Review Process

Consistent with NEPA/CEQA requirements, a good-faith effort has been made during the preparation of this Draft EIS/EIR to contact and consult affected agencies, organizations, and persons who may have an interest in this project. The effort included the circulation of an NOI/NOP, which began a 30-day comment period. The purpose of the NOI/NOP was to inform agencies and the public that a Draft EIS/EIR was being prepared for the Plan Area and to invite comments on the scope and content of the EIS/EIR. The letters and comments that were received are summarized in Chapter 6 and included in Appendix C.

Upon issuance of this draft for public review, Reclamation will file a NOA for placement in the Federal Register, and CSP will file a NOC with the Governor's Office of Planning and Research, State Clearinghouse, indicating that a Draft Plan and EIS/EIR has been completed and is available for review and comment by the public. A review period (starting on the date the NOA is published in the Federal Register) will be provided for the public and other agencies to review and comment on the Draft EIS/EIR.

Reviewers of the Draft EIS/EIR should focus on the sufficiency of the document in the identification and analysis of the potential environmental impacts of the Plan. Comments may be made on the Draft EIS/EIR in writing before the end of the comment period. After the close of the public review period, Reclamation and CSP will prepare responses to comments on the content and conclusions of the Draft EIS/EIR and will revise the document as necessary to address the comments. The Draft EIS/EIR and technical appendices, together with the responses to comments, will constitute the Final EIS/EIR.

Written comments on the Draft RMP/GP and Draft EIS/EIR should be sent to:

Mr. Dave Woolley
Land Resource Specialist
Department of the Interior
Bureau of Reclamation
South-Central California Area Office
1243 "N" Street
Fresno, CA 93721-1813

*or*

Ms. Elizabeth Steller
California State Parks
District Services Manager
Central Valley District
22708 Broadway St.
Columbia, CA 95310-9400

Reclamation and CSP will review the Final EIS/EIR for adequacy and consider it for certification pursuant to the requirements of NEPA and CEQA. If Reclamation and CSP certify the Final EIS/EIR and decide to approve the Plan, a Record of Decision (ROD) will be prepared and filed with the Federal Register, and following Commission approval, a Notice of Determination will be prepared and filed with the State Clearinghouse. The ROD and Notice of Determination will include a description of the project, the date of approval, and the address where the Final EIS/EIR and record of project approval are available for review.

As described in Section 1.3.2, the Plan includes recommendations for various resource management actions and facility improvement projects. The management actions and projects are defined at a conceptual or programmatic level in this Plan. Reclamation and CSP would review phasing, siting, and grading plans to ensure that they are consistent with the Plan. If Reclamation or CSP finds, pursuant to Sections 1500.4, 1500.5 and 1502.20 of the NEPA Guidelines and Section 15162 of the State CEQA Guidelines (CCR, Section 15000 et seq.) that no new effects could occur or no new mitigation measures would be required, they can approve the activity as being within the scope of the project covered by the EIS/EIR. In such a case, no new environmental documentation would be required. However, if a proposed action or project would have effects that were not examined in the EIS/EIR, preparation of an additional environmental document would be required (NEPA Regulations Section 1502.20 and State CEQA Guidelines Section 15168[c][1]).

## 5.2 Environmental Analysis Summary

An evaluation of environmental effects from the proposed action is provided in Sections 5.2.4 and 5.4.

The protection and rehabilitation of natural and cultural resources are key components of the Plan. Much of the Plan Area will remain undeveloped, thereby keeping wildlife habitat intact, protecting scenic resources, preserving native vegetation, safeguarding watershed water quality, and continuing historic and cultural landscape protection and interpretation. Additionally, the Plan allows for staff and public safety, appropriate infrastructure and operations, and coordination with regional planning efforts and initiatives. The Plan also includes conceptual locations for Plan Area facilities. Wildlife areas set aside for habitat mitigation

when the Plan Area facilities were built will remain as managed by DFG, consistent with the original intent.

### 5.2.1 Summary of Alternatives Considered

In addition to the NEPA- and CEQA-mandated No Action/No Project Alternative, three action alternatives were considered during development of the Plan. Each alternative includes resource management actions to protect the physical resources of the Plan Area balanced with different scenarios for visitor facilities and experiences, while maintaining the Plan Area purpose and vision. In all three action alternatives, provisions have been made for infrastructure and operations, and for coordination with local and regional planning agencies and other entities. The goals and guidelines provided in Chapter 4 apply to all three action alternatives. A description of the alternatives is provided in Section 4.4, and an environmental evaluation of all alternatives is provided in Section 5.4. The following is a summary of the alternatives:

- Alternative 1, the No Action/No Project Alternative, would continue the management direction set by previous planning documents as well as ongoing programs initiated under existing legislation and regulations. Alternative 1 is intended to reflect current and expected future conditions in the Plan Area should the proposed Plan not be implemented.
- Alternative 2: Limited new access and development. Alternative 2 would include the fewest physical additions and visitor use modifications among the action alternatives but would implement an array of resource management actions. Visitor access would remain the same as under Alternative 1.
- Alternative 3: Moderate new access and development. Alternative 3 balances the need for future visitor facilities with resource management. This alternative anticipates increased future visitation by providing for physical additions and visitor use modifications but concentrates them in and around existing developed areas. Compared to Alternative 2, Alternative 3 would provide for the same level of resource management and a higher level of visitor access.
- Alternative 4: Maximum new access and development. Alternative 4 would provide for the most physical additions and visitor use modifications among the action alternatives, some in areas that are currently undeveloped. Compared to the other action alternatives, Alternative 4 would provide for the same level of resource management and the highest level of visitor access.

### 5.2.2 Plan Description

Chapter 4 presents the Plan description with the Plan Area purpose and vision, Plan Area-wide goals and guidelines, a delineation of management zones, and a description of the alternatives.

### 5.2.3 Assumptions and Methods for Evaluating Impacts

Impact analyses and conclusions are based on interdisciplinary team knowledge of resources and the Plan Area, reviews of existing literature, and information provided by experts in Reclamation, CSP, and other agencies. Impacts described in this section are based on the conceptual Plan as implemented by the proposed alternatives described in Chapter 4. The information used to establish a baseline of existing conditions (including applicable laws and regulations for each resource) is described in Chapter 2. The management alternatives have been configured to optimize benefits and minimize adverse effects on both ecosystem function and the human environment. In the absence of quantitative data, best professional judgment prevails. Protocol surveys for special-status species were not conducted as part of this programmatic planning effort.

One of the primary differences between NEPA and CEQA is the way significance is determined and discussed in environmental documents. Under NEPA, significance is used to determine whether an EIS or some lower level of documentation will be required. NEPA requires preparation of an EIS when the proposed federal action (project) as a whole has the potential to "significantly affect the quality of the human environment." The determination of significance is based on context and intensity (40 CFR §1508.27). Some impacts determined to be significant under CEQA may not be of sufficient magnitude to be determined significant under NEPA. Under NEPA, once a decision to prepare an EIS is made, it is the magnitude of the impact that is evaluated, and no judgment of its significance is deemed important for the text. NEPA does not require that a determination of significance for individual resources be stated in an environmental document. Once the proposal itself is considered as a whole to have significant effects, all of its specific effects on the environment (whether or not "significant") must be considered, and mitigation measures must be developed where it is feasible to do so (40 CFR §1502.14(f), 1502.16(h), 1508.14, and the Council on Environmental Quality's [CEQ's] 40 Most Asked Questions #19a[7]).

CEQA, on the other hand, does require an identification of each "significant effect on the environment" resulting from the project and ways to mitigate each significant effect. A significant effect on any environmental resource triggers the preparation of an EIR. Each significant effect on the environment must be disclosed in the EIR and mitigated, if feasible. In addition, the CEQA Guidelines list a number of mandatory findings of significance that also require the preparation of an EIR. There are no types of actions under NEPA that parallel the findings of mandatory significance in CEQA.

According to the CEQA Guidelines Section 15382, a significant impact on the environment refers to 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 historical or aesthetic significance." Environmental impacts may be associated with visitor

[7] http://ceq.hss.doe.gov/NEPA/regs/40/40p3.htm.

use, facility construction or rehabilitation, or development projects, and adverse impacts can range from negative visual impacts to degradation of water quality to the disturbance or loss of cultural and natural resources.

For the purposes of this document only, the terms used for impact magnitude (NEPA) and thresholds of significance (CEQA) are shown below. Mitigation measures are provided where applicable.

| NEPA Impact Magnitude | CEQA Threshold |
|---|---|
| Beneficial | – |
| No impact | No impact |
| Minor adverse impact | Less than significant impact |
| Major adverse impact | Significant impact |

As discussed above, this Plan is a first-tier EIS/EIR and, as such, the description of proposed development, program impacts, and associated mitigation are programmatic. The Plan goals and guidelines (Section 4.2) would provide program-level avoidance and/or minimization for effects that may result from proposed management actions. Additional program-level mitigation measures are provided in Section 5.4. As additional area development plans or specific projects are proposed or developed, they will be subject to further environmental review. Project-specific mitigation measures may be implemented where necessary based on more specific project review. The potential mitigation measures identified in this section may be necessary for specific projects that could be implemented under this Plan. Impacts are summarized in Table 5-4, at the end of this chapter.

### 5.2.4 Environmental Effects Found Not to Be Significant

As required by CEQA (CEQA Guidelines §15128), this section presents discussions related to environmental effects found not to be significant. At this first tier of planning and environmental analysis, some topical issues were found not to be significant and were not evaluated further in this Draft EIS/EIR. These topical issues are identified and briefly discussed in this section. If the Plan is amended in the future or conditions as presented herein change, these effects will have to be re-evaluated to ensure that they are still deemed to be not significant.

#### *5.2.4.1 Agricultural and Forest Resources*

Implementation of the Plan would not convert farmland to nonagricultural use. The Plan Area is not designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency. Thus, the proposed Plan would have no effect on agricultural resources.

No lands in the Plan Area are zoned as forest land or timberland (Merced County 1990, Merced County Planning and Community Development Department 2008a, b). The Plan would not result in the conversion of forest land to non-forest use.

#### 5.2.4.2 Geology and Soils

The action alternatives would not permit development of structures that are subject to the Alquist-Priolo Earthquake Fault Zoning Act in Alquist-Priolo fault zones. Geologic studies and site-specific geotechnical investigations for siting and design of permanent structures, campgrounds, roads, and trails to minimize potential damage from erosion, unstable soil, landslides, and earthquakes would be required. The risk related to a seismic event would not increase from current conditions as a result of Plan implementation.

#### 5.2.4.3 Hazards and Hazardous Materials

A Spill Prevention, Control, and Countermeasure Plan is in place for the Plan Area and will be reviewed and updated in accordance with regulatory requirements independent of Plan implementation. Implementation of the Plan would not result in the release of hazardous substances, create a health hazard, expose people to any existing sources of health hazards, or increase a fire hazard. Implementation of the Plan would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials because no unusual use of hazardous materials is anticipated. Use of hazardous materials, as defined by and regulated through the CCR, is expected to be limited to the periodic use of pesticides and herbicides in conjunction with maintenance of the landscaping and control of invasive plants, and use of motor oils, gas, and similar materials for employee vehicles and maintenance equipment. Application and storage of these substances in accordance with the manufacturers' specifications would not pose any significant hazards. This use would not cause a significant hazard to the public or result in a foreseeable upset or accident condition. Future projects would be subject to further, more detailed review. Should any hazardous substances or other health hazards be identified, appropriate warning and protective methods would be developed and implemented.

Remediation at the site of a former underground fuel storage tank and waste oil tank at the CSP operations area on Gonzaga Road (Section 2.9.3.3) will continue independent of Plan implementation.

#### 5.2.4.4 Land Use and Planning

The Plan provides guidelines for future land use and development and is consistent with the Merced County General Plan. The Plan would not physically divide an established community or conflict with any HCP or Natural Communities Conservation Plan (NCCP); therefore, it would not cause a change in the environment related to land use and planning.

#### 5.2.4.5 Indian Trust Assets and Indian Sacred Sites

The nearest Indian Trust Asset is approximately 70 miles northeast of the Plan Area. Implementation of the Plan will not affect Indian Trust Assets (Rivera 2010).

The NAHC was consulted in 2003 and again in 2011 regarding the presence of Native American cultural resources in the Plan Area. No Native American

cultural resources were identified in the NAHC sacred lands file. Implementation of the Plan will not affect known Indian Sacred Sites.

#### 5.2.4.6 Energy and Mineral Resources

The Plan policies encourage resource conservation and recreational uses for the Plan Area. Plan implementation in and of itself would not require additional energy. The potential development and improvements that are recommended in the Plan would require minimal amounts of energy and would not adversely affect peak- and base-period demands for electricity.

The Plan includes the protection of large expanses of undeveloped land and would not preclude the development of any mineral resources if found. Therefore, the proposed Plan would not have an adverse impact on the environment related to mineral resources.

#### 5.2.4.7 Noise

Plan implementation would not expose visitors to excessive noise, groundborne vibration, or substantial increases in ambient noise. Additional visitor facilities and uses are concentrated in the Frontcountry (FC), Administration and Operations (AO), Rural Developed (RD), and Suburban (S) zones of existing use areas, where noise from visitor activities and vehicles exists and is consistent with the setting. CSP rules and regulations pertaining to visitor noise (e.g., radios must not be audible beyond a visitor's immediate campsite regardless of the time of day or night; generators or other devices are not to be operated between the hours of 8 PM and 10 AM) would continue to apply and would not be affected by Plan implementation.

The effects of noise on biotic species are discussed in Section 5.4.3.

#### 5.2.4.8 Socioeconomics

Implementation of the Plan would not result in impacts related to population, employment, or housing. The Plan would not induce substantial population growth in the area because it does not propose any substantial new housing or businesses. The Plan would not displace any people or housing or result in the need to construct replacement housing elsewhere. Implementation of the Plan could result in an increased need for staff, but the number of new jobs generated would not be significant and would not exceed the projected job growth in the area.

#### 5.2.4.9 Environmental Justice

Executive Order 12898, Environmental Justice, is a federal requirement to identify the disproportionately high and adverse health and environmental effects on minority populations and low-income populations that could be caused by a proposed federal action. Accompanying Executive Order 12898 is a Presidential Transmittal Memorandum that references existing federal statutes and regulations, including NEPA, to be used in conjunction with the Executive Order. The Council on Environmental Quality (CEQ) issued Guidance Under NEPA in 1997 (CEQ 1997). Minority populations include all persons identified by the U.S. Census of

Population and Housing to be of Hispanic origin, regardless of race, and all persons not of Hispanic origin other than White (i.e., Black, American Indian, Eskimo or Aleut, Asian or Pacific Islander, or other race).

No formal, commonly accepted significance criteria have been adopted for Environmental Justice impacts. However, the Presidential Memorandum accompanying the Executive Order directs federal agencies to include measures to mitigate disproportionately high and adverse environmental effects of proposed federal actions on minority and low-income populations. Federal agencies are also required to give affected communities opportunities to provide input into the NEPA process, including identification of mitigation measures. No specific significance thresholds have been developed. Application of Executive Order 12898 to NEPA documentation suggests that the following two questions should be examined:

- Is a federal project with significant adverse environmental impacts being proposed in a community comprised largely of minority or low-income persons?
- Would any significant adverse human health or environmental effects of the project disproportionately affect minority or low-income persons?

No aspect of the Plan or any of the action alternatives would result in disproportionately high and adverse human health or environmental effects on minority or low-income populations. Any restrictions on travel or access to areas of the Plan Area that might result from implementation of the Plan would be equally applied to all visitors, regardless of race or socioeconomic standing. Furthermore, none of the action alternatives would change current management direction or housing policies with respect to housing policies in the Plan Area or vicinity. Therefore, the Plan and the action alternatives would not result in the destruction or disruption of community cohesion or economic vitality, displacement of public and private facilities and services, and/or exclusion or separation of minority or low-income populations from the broader community.

## 5.3 Environmental Setting

The analysis of environmental consequences is based on the description of the existing Plan Area environment, resource values, and the local and regional vicinity presented in Chapter 2.

## 5.4 Environmental Consequences

### 5.4.1 Hydrology, Floodplain, and Water Quality

Hydrology refers to hydrologic processes such as flooding, erosion, deposition, and channel movement. Water quality, particularly the enhancement or degradation of water quality, relates to and has an effect on the suitability of surface water for recreational use and wildlife habitat. The Clean Water Act

requires CSP and Reclamation to comply with federal, state, interstate, and local requirements; administrative authority; and sanctions with respect to the control and abatement of water pollution.

#### 5.4.1.1 Impact Summary

The following mechanisms have the potential to affect hydrology, floodplains, and water quality in the Plan Area:

- Facilities maintenance and construction
- Trail and road use, maintenance, and construction
- Motorized vessel emissions
- Human use and waste disposal
- Climate change

Because the Plan Area includes few flood-prone areas and development is not proposed in these areas, none of the alternatives would have impacts associated with flooding and floodplains.

#### 5.4.1.2 Impact Criteria (Hydrology and Floodplain/Water Quality)

- Beneficial Impact (NEPA): Impact that is detectable and positively alters historical or desired hydrology and floodplain or water quality conditions. Beneficial impacts would contribute to the enhancement of Plan Area water resources or the public's enjoyment of water resources, or would advance Plan Area goals for water quality. There is no CEQA equivalent to a NEPA beneficial impact.
- No Impact: Impact that cannot be detected.
- Minor Adverse Impact (NEPA): Impact that is detectable and within or below regulatory standards or thresholds for water quality, and does not interfere with Plan Area goals. This is equivalent to a CEQA less than significant impact.
- Major Adverse Impact (NEPA): Impact that is detectable and significantly and negatively alters historical baseline or desired water quality conditions. Major adverse impacts would contribute to the deterioration of water quality in the Plan Area, diminish the public's enjoyment of Plan Area resources, or interfere with Plan Area goals for water quality. A major adverse impact is equivalent to a CEQA significant impact, which would result from one or more of the following:
  - Violate any water quality standard or waste discharge requirements;
  - Substantially deplete groundwater supplies or interfere with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level;
  - Substantially alter the existing drainage pattern of the site or area, including through alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation onsite or offsite;

- Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- Otherwise substantially degrade water quality;
- 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 delineation map;
- Place within a 100-year flood hazard area structures that would impede or redirect floodflows; or
- Expose people or structures to significant risk of loss, injury, or death involving flooding, including that caused by dam or levee failures, seiche, tsunami, or mudflow.

#### *5.4.1.3 Environmental Evaluation*

**Facilities Maintenance and Construction** Each of the alternatives include maintenance or construction of sites and facilities including campgrounds, picnic areas, boat ramps, boarding floats, shade ramadas, and buildings. Maintenance and construction could expose loose soils, potentially increasing erosion and siltation. Depending on the distance between the activity and the nearest Plan Area waterbody, minor adverse impacts could occur to surface waters due to erosion and a resulting temporary increase in turbidity or siltation in localized areas. The addition of new paved surfaces could increase the amount of impermeable surface within the Plan Area, potentially resulting in additional runoff and pollutants in runoff. Moreover, the use of construction equipment and related chemicals has a minor potential to result in the accidental release of pollutants. Any release of pollutants could affect surface water, runoff, and groundwater.

Maintenance and construction activities would have the potential to result in minor, short-term adverse effects to water quality within the Plan Area. The effects would vary by alternative as follows:

- Alternative 1, No Action/No Project, would not construct any additional features or facilities in the Plan Area, but standard maintenance activities would continue. These activities could have minor, short-term adverse effects to water quality, but to a lesser degree than the action alternatives, which all allow for additional construction.
- Alternative 2 proposes the fewest additional features and facilities of the three action alternatives. The water quality effects described above could result from expanding the group picnic facilities at San Luis Creek Use Area and the campground at Los Banos Creek Use Area, as well as from adding up to 30 tent sites at the northwest shoreline of San Luis Creek Use Area. In addition, Alternative 2 would allow for reopening or relocating the boat launch at Medeiros Use Area and removing sandbars in shallow water areas. If these actions were pursued, potential impacts to water quality from construction-related turbidity would range from minor to major and would likely require second-tier environmental review. The

adverse effects to water quality from Alternative 2 would be greater than from Alternative 1 but less than Alternatives 3 and 4. Measures such as those described in Section 5.4.1.4 would reduce potential effects, but minor impacts could remain.

- Alternative 3 would allow for a greater degree of facility development than Alternatives 1 and 2. Effects to water quality could result from addition of several camping and day use facilities at Basalt, Dinosaur Point, San Luis Creek, Medeiros, and Los Banos Creek use areas, as well from expanding the boat launch at San Luis Creek Use Area and relocating the entrance station and maintenance facilities at Los Banos Creek Reservoir. Paving currently unpaved roads in Medeiros Use Area would increase the amount of impermeable surface runoff in that area. Like Alternative 2, Alternative 3 would allow for reopening or relocating the boat launch at Medeiros Use Area and removing sandbars in shallow water areas. If these actions were pursued, potential impacts to water quality from construction-related turbidity would range from minor to major and would likely require second-tier environmental review. Adverse effects to water quality from Alternative 3 would be greater than from Alternatives 1 and 2 but are expected to remain short-term. Measures such as those described in Section 5.4.1.4 would reduce potential adverse effects, but minor impacts could remain.
- Alternative 4 would allow for the greatest degree of facility development of the action alternatives. In addition to including most components of Alternative 3, this alternative would provide for several new facilities that would increase the amount of impermeable surface, such as a new visitor's center at the Gonzaga Road Facilities Area and a restaurant and motel (in coordination with a long-term concessionaire) at Medeiros Use Area. Like Alternatives 2 and 3, Alternative 4 would allow for reopening or relocating the boat launch at Medeiros Use Area and removing sandbars in shallow water areas. If these actions were pursued, potential impacts to water quality from construction-related turbidity would range from minor to major and would likely require second-tier environmental review. Adverse effects to water quality from Alternative 4 would be greater than from the other alternatives and could range from minor to major, if the new facilities result in exceedance of any standards, substantially change drainage patterns, or contribute excessive runoff. Measures such as those described in Section 5.4.1.4 would reduce potential adverse effects, but minor impacts could remain.

When specific construction and maintenance activities are developed, a site-specific environmental analysis would be conducted and a more focused assessment of the activity's impacts to water quality would take place. If significant impacts to water quality were to be identified, the proposed project would be modified or mitigation measures would be implemented to reduce these impacts to minor impact levels (see Section 5.4.1.4).

**Trail and Road Use, Maintenance, and Construction** All of the alternatives include use and maintenance of existing roads and trails, and some action alternatives allow for construction of new roads and trails. Depending on the distance between the roads or trails and the nearest Plan Area waterbody, use, maintenance, and construction could result in minor adverse impacts to surface waters due to erosion and the resulting temporary increase in turbidity at localized areas. Impacts would be similar to those for facilities maintenance and construction, discussed above. Paving road and trails could increase runoff by adding impermeable surfaces. Spills of oil, grease, or other hydrocarbons from motor vehicles or construction equipment could affect surface water, runoff, and groundwater. The effects would vary by alternative as follows:

- Alternative 1, No Action/No Project, would not construct any new roads or trails, but use of those roads and trails, along with standard maintenance activities such as trail grading, would continue. These activities could have minor, short-term adverse effects to water quality, but to a lesser degree than the action alternatives.
- Alternative 2 proposes no additional trails. Alternative 2 and the other action alternatives would implement a trails management plan, which would be a beneficial impact that would not be realized under Alternative 1. The plan would incorporate best management practices (BMPs) to maintain trails and minimize erosion, especially in areas where trail use could affect water quality. All of the action alternatives also allow for working with Caltrans to explore roadway access improvements, which, if pursued, would be subject to Caltrans Statewide National Pollutant Discharge Elimination System (NPDES) permit requirements and storm water BMPs in addition to the measures proposed in Section 5.4.1.4. Continued trail and road use and potential development of roadway improvements with Alternative 2 would result in minor, short-term adverse water quality effects. These effects would be greater than with Alternative 1 but less than Alternatives 3 and 4. At Los Banos Creek Use Area, the access road at the entry station would be improved under Alternative 2 and the other action alternatives to address periodic flooding. This would be a beneficial impact that would not be realized under Alternative 1. Effects would be minimized to minor levels through implementation of the trails management plan and measures such as those described in Section 5.4.1.4.
- Alternative 3 includes new trails linking Basalt Use Area with Pacheco State Park and Dinosaur Point with surrounding areas. Construction of a trail through a currently undeveloped area has the potential for minor to major effects. Implementation of the trails management plan would minimize these effects to minor levels. Therefore, water quality effects from continued trail and road use and development of new trails would be minor and short-term. At San Luis Creek Use Area, Alternative 3 would allow for a construction of a new road for vehicle access to the fishing area at Check 12 as well as additional camping areas at the extreme northwest edge of the San Luis Creek Campground. Construction and

operation of these new facilities could result in minor changes in drainage patterns and runoff quantities, but adverse effects would remain minor and short-term. Overall, Alternative 3 would have greater effects on water quality than Alternatives 1 and 2 but less than Alternative 4. Effects would be minimized to minor levels through implementation of the trails management plan and measures such as those described in Section 5.4.1.4.

- Alternative 4 includes two new trails, which would link Basalt Use Area with Dinosaur Point Use Area and Los Banos Creek Use Area with Basalt Use Area. Otherwise, trails and roads and the associated impacts from construction and use would be identical to Alternative 3. Construction of trails through currently undeveloped areas, including privately owned land between the two parts of the Plan Area, would have the potential for minor to major adverse effects. These effects would be minimized to minor levels through implementation of the trails management plan and other measures such as those described in Section 5.4.1.4. Effects would be minimized to minor levels through implementation of the trails management plan and measures such as those described in Section 5.4.1.4.

**Motorized Vessel Emissions** Any release of fuel or other pollutants from a motorized vessel has the potential to affect Plan Area water quality. Some personal watercraft and fishing boats with outboard motors have carbureted two-stroke engines (nonconformant engines) that release an unburned fuel mixture from the engine directly into the water. As a result of new emissions regulations, all recreational marine vessel engines and personal watercraft were required to have compliant two-stroke (direct injection) or four-stroke engines from 2008 onward (see Sections 2.4.3.3 and 2.5). Almost 50 percent of the remaining nonconformant two-stroke engines are projected to remain in use by 2012 (Federal Register 1996). No data are available for the percentage of vessels with nonconformant engines typically present in the Plan Area.

Potential water quality effects from motorized vessel emissions would vary by alternative as follows:

- Alternative 1, No Action/No Project, would not impose a timed phaseout of nonconformant two-stroke engines. The duration of nonconformant engine use in Plan Area waterbodies would be longer in the absence of a timed phaseout. Water quality data show that no water quality standards associated with vessel fuel discharges have been exceeded (see Section 2.4.3.2); however, continued use of nonconformant two-stroke engines is anticipated to have minor adverse impacts on water quality, which would be greater than with the action alternatives.
- Alternative 2 and the other action alternatives would impose a three-year phaseout of nonconformant two-stroke engines. During the three-year phaseout period, continued use of nonconformant two-stroke engines would have minor adverse impacts on water quality, followed by beneficial impacts after the phaseout. After the three-year phaseout period, all recreational marine engines in use in the Plan Area will be required to

have a one-star, two-star, or three-star label (see Section 2.5.1.2). Enforcement measures will be specified in the boating management plan.

**Human Use and Waste Disposal** Recreational use in the Plan Area generates human waste. Possible sources of human waste pollution include developed campsites, primitive campsites, portable restrooms, and privately owned portable toilets, as well as body contact with reservoir waters. New or expanded facilities could accommodate a greater number of visitors. Additional campsites and restroom/toilet facilities would result in additional human waste. An increase in body contact with reservoir water from additional visitation has the potential to increase levels of coliform bacteria during periods of high visitation such as weekends and holidays.

These effects would vary by alternative as follows:

- Alternative 1, No Action/No Project, would not increase the number of campsites, add restroom/toilet facilities, or propose new or expanded facilities that could accommodate additional visitors and could result in additional human waste and body contact. The potential for minor adverse water quality impacts associated with human waste and body contact would be lower than with the action alternatives.
- Alternative 2 would allow for adding up to 30 tent sites each at Los Banos Creek and San Luis Creek use areas. The additional camping capacity would accommodate more visitors and could result in additional human waste and body contact. This would slightly increase the potential for minor adverse water quality impacts compared with Alternative 1. Effects would be minimized to minor levels through implementation of measures such as those described in Section 5.4.1.4.
- Alternatives 3 and 4 would allow for the greatest increase in camping and day use capacity, and include additional restroom facilities at Dinosaur Point, Medeiros, and Los Banos Creek use areas. The additional camping and overnight lodging, restrooms, and day use capacity would accommodate more visitors than the other alternatives. The resulting increase in human waste and body contact would increase the risk for water quality impacts compared to Alternatives 1 and 2; however, potential adverse impacts would remain minor. Effects would be minimized to minor levels through implementation of measures such as those described in Section 5.4.1.4.

**Climate Change** As described in Section 2.2, San Luis Reservoir levels vary by year and season and decline by an average of more than 100 feet from the late winter to summer months. The fluctuation in reservoir levels requires a system of ramps that are operated to allow boat and water recreation access to the reservoir as water levels decline. This allows recreation access at even the lowest lake levels.

In the last 25 years, there have been two years (1989 and 2008) when droughts caused reservoir levels to be drawn down over 180 feet below normal high water

level. Climate change has the potential to increase the frequency and magnitude of fluctuations in reservoir levels due to decreased snowpack and subsequent decreased summer runoff. As a result, the current ramp system may be necessary for recreational access to the reservoir on a more frequent basis, and other temporary or permanent infrastructure improvements may need to be implemented to accommodate water level changes. This condition would occur regardless of which alternative is implemented, including No Action/No Project. Plan implementation would have no impact on reservoir level fluctuations from climate change.

Groundwater levels and recharge rates have the potential to be affected by decreased precipitation in the Plan Area from climate change (see Section 2.2.2). This condition would occur regardless of which alternative is implemented, including No Action/No Project. Plan implementation would have no impact on groundwater level fluctuations from climate change.

#### *5.4.1.4 Mitigation*

The following measures would be considered and applied as necessary for all of the action alternatives during project construction and implementation.

**Goals RES-WQ1 through RES-WQ4** Goals RES-WQ1 through RES-WQ4 and their associated guidelines (Section 4.2.1.4) will minimize or avoid potential impacts on hydrology and water quality from facilities maintenance and construction; trail and road use, maintenance, and construction; motorized vessel emissions; and human waste and disposal. In particular, RES-WQ1 provides for suspension or limitation of visitor uses if water quality monitoring shows exceedances of standards that are clearly associated with recreational uses. The Plan proposes to continue monitoring at existing locations. In addition, project-specific mitigation measures will be developed and implemented on a project-by-project basis, if mitigation is necessary.

**Mitigation Measure WQ1**

- Develop and implement a stormwater pollution prevention plan to control erosion and sedimentation, both during and after construction, thereby reducing water pollution.
- Place construction debris in refuse containers at least daily.
- Dispose of refuse frequently. Avoid burning or burying refuse inside the Plan Area where feasible.
- Dispose of volatile wastes and oils in approved containers for removal from construction sites to avoid contamination of soils, drainages, and watercourses.
- Inspect equipment for hydraulic and oil leaks prior to use on construction sites, and implement inspection schedules to prevent contamination of soil and water.
- When using heavy equipment, keep absorbent pads, booms, and other materials on-site to contain oil, hydraulic fluid, and solvents.

- Incorporate methods for minimizing flood damage into the design of all new structures.
- Store and stabilize excavated material in upland areas to prevent discharge into water bodies or wetlands.

## 5.4.2 Air Quality

The SJVAPCD's Guide for Assessing and Mitigating Air Quality Impacts (SJVAPCD 2002) provides measures to avoid and minimize air quality impacts. These measures address the types of activities proposed in the action alternatives. The Plan incorporates measures from the SJVAPCD guidance (Section 5.4.2.4), which will be implemented as appropriate to avoid major adverse air quality impacts.

### *5.4.2.1 Impact Summary*

The following mechanisms have the potential to affect air quality in the Plan Area:

- Criteria pollutant emissions from motorized vehicles and vessels
- Dust emissions caused by motorized vehicles, construction, or recreation
- Short-term combustion emissions caused by prescribed burning or wildland fires
- GHG emissions and climate change

None of the four alternatives would introduce stationary sources of air pollution into the Plan Area.

### *5.4.2.2 Impact Criteria (Air Quality)*

- Beneficial Impact (NEPA): Impact that is detectable and positively alters historical or desired air quality conditions. Beneficial impacts would contribute to the enhancement of Plan Area air quality, the public's enjoyment of Plan Area resources, or would advance Plan Area goals for air quality. There is no CEQA equivalent to a NEPA beneficial impact.
- No Impact: Impact that cannot be detected.
- Minor Adverse Impact (NEPA): Impact that is detectable and within or below regulatory standards or thresholds for air quality, and does not interfere with Plan Area goals. This is equivalent to a CEQA less than significant impact.
- Major Adverse Impact (NEPA): Impact that is detectable and significantly and negatively alters historical baseline or desired air quality conditions. Major adverse impacts would contribute to the deterioration of air quality in the Plan Area, the public's enjoyment of Plan Area resources, or would interfere with Plan Area goals for air quality. A major adverse impact is equivalent to a CEQA significant impact, which would result from one or more of the following:
  - Conflict with or obstruct implementation of the applicable air quality plan;

- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- Result in a cumulatively considerable net increase of any criteria air pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to substantial pollutant concentrations; or
- Create objectionable odors affecting a substantial number of people.

#### *5.4.2.3 Environmental Evaluation*

**Criteria Pollutant Emissions from Motorized Vehicles and Vessels** Vehicle and motorized watercraft emissions include ozone precursors, carbon monoxide, nitrogen and sulfur oxides, and particulate matter. These emissions have the potential to affect local and regional air quality. The action alternatives would support increased visitor use, associated vehicle travel, and motorized watercraft use, as well as construct visitor, operations, and maintenance facilities. The action alternatives could also result in increased vehicle traffic to, from, and in the Plan Area.

The level of the potential increase in motorized vehicle and vessel use is unclear, since Plan Area visitation has fluctuated in recent years independent of local and regional population growth (see Chart 2-1). Future criteria pollutant emissions related to Plan Area motorized vehicle and vessel use were estimated using the CARB EMFAC 2007 and Offroad 2007 models, respectively. The modeling assumed a 98 percent increase in daily vehicle trips and boat launches in future year 2040 over existing conditions (Section 2.5.2 and Table 2-15). The increase was based on the California Department of Finance's projected population increase of 98 percent in 2040 for Merced County (DOF 2011). Applying this increase to Plan Area vehicle and vessel use is considered highly conservative. Santa Clara County, which is the source of at least a portion of Plan Area visitation,[8] is projected to have a 2040 population increase of only 21 percent. In addition, the 98 percent increase assumes that Plan Area visitation will nearly double.

[8] CSP does not have data for county of visitor origin, but because Santa Clara County is adjacent to the western side of the Plan Area, it is reasonable to assume that some vistors come from that county.

**Table 5-1**
**Future Criteria Pollutant Emissions from Plan Area Visitation (2040)**

| Type | CO | VOC | $NO_x$ | $PM_{10}$ | $PM_{2.5}$ | $SO_2$ |
|---|---|---|---|---|---|---|
| Vehicle Emission Factors (lb/mi) | 0.0135 | 0.0013 | 0.0012 | 8.42252E-05 | 5.23E-05 | 9.00E-06 |
| Vehicle Emissions (tons/yr) | 12.744 | 1.248 | 1.158 | 0.079 | 0.049 | 0.008 |
| Boat Emission Factors (ton/boat) | 0.00037 | 1.97E-04 | 1.80E-05 | 2.59E-05 | 2.59E-05 | 4.48E-08 |
| Evap Boat Factors (tons/boat) | | 2.71E-05 | | | | |
| Boat Emissions (tons/day) | 0.01922 | 0.01171 | 0.00094 | 0.00135 | 0.00135 | 0.00000 |
| Boat Emissions (tons/year) | 7.02 | 4.28 | 0.34 | 0.49 | 0.49 | 0.00 |
| **Total Emissions (tons/year)** | **19.764** | **5.524** | **1.500** | **0.574** | **0.544** | **0.009** |
| **SJVAPCD Thresholds (tons/year)** | **NA** | **10** | **10** | **15** | **15** | **NA** |
| **GCR De Minimis Levels (tons/yr)** | **Attainment** | **10** | **10** | **100** | **100** | **Attainment** |

As shown in Table 5-1, future total emissions from the Plan Area would remain well below the SJVAPCD thresholds (where thresholds exist) and GCR de minimis levels. No exceedances would occur if Plan Area motor vehicle and vessel use doubled. Motor vehicle and vessel use would have to quadruple before a single threshold (for VOC) would be exceeded; all other criteria emissions would remain below SJVAPCD thresholds and GCR de minimis levels. Although automotive and boat traffic would likely vary among the four alternatives, a quadrupling in future motor vehicle and vessel use in the Plan Area is unlikely to occur. None of the alternatives would result in levels of park visitation high enough to create heavy and sustained traffic patterns that would produce major air quality issues. The indirect effects of increasing vehicle traffic in the region from Plan implementation would result in only a minor increase in total vehicular emissions in the area.

In addition, new regulations are expected to reduce air emissions as motorized vehicle and vessel manufacturers improve their technology to meet emission standards. As described in Section 2.5, all marine outboard and personal watercraft engines manufactured in 2008 or later are required to comply with California Air Resources Board (CARB) 2008 exhaust emission standards for hydrocarbons and $NO_x$. All marine outboard and personal watercraft engines manufactured in 2010 or later will be required to comply with USEPA 2008 emission standards (USEPA 2008a), and spark-ignition marine vessel engines from 2012 and later will be required to comply with CARB and USEPA standards for evaporative emissions (CARB 2010c). Regulations regarding GHG emissions from motor vehicles (see below under “Greenhouse Gas Emissions”) would also reduce criteria pollutant emissions.

Emissions effects would vary by alternative as follows:

- Alternative 1, No Action/No Project, would not construct any additional features or facilities in the Plan Area that would accommodate or support increased visitor use. Continued visitation and motorized vehicle and vessel use could have minor adverse effects to air quality, but to a lesser degree than the action alternatives. Airborne emissions such as VOC, $NO_x$, and CO from continued use of nonconformant two-stroke engines with Alternative 1 would have minor adverse impacts on air quality, which would be greater than with the action alternatives.
- Alternative 2 proposes the fewest additional features and facilities of the three action alternatives. A minor increase in visitors and motorized vehicle travel to, from, and in the Plan Area could result from expanding the group picnic facilities at San Luis Creek Use Area and the campground at Los Banos Creek Use Area, as well as adding up to 30 tent sites at the northwestern shoreline of San Luis Creek Use Area. Some increase in boating could occur from expanding the boat launch at Dinosaur Point Use Area or reopening/relocating the boat launch at Medeiros Use Area. Any addition in motorized vessel use would be offset by the three-year phaseout of nonconformant two-stroke engines that Alternative 2 and the other action alternatives would impose. The phaseout of nonconformant engines will reduce VOC, $NO_x$, and CO emissions. Since VOC and NOx are precursors to ozone formation, the phaseout will also reduce ozone creation. Overall, Alternative 2 could result in minor adverse effects to air quality that are greater than Alternative 1 but less than Alternatives 3 and 4.
- Alternative 3 proposes many of the same expanded or additional facilities as Alternative 2, along with the three-year phaseout of nonconformant two-stroke engines, but includes features to accommodate a greater number of visitors. This alternative would allow for several new campsites and other facilities at Basalt, San Luis Creek, Medeiros, and Los Banos Creek use areas. Alternative 3 would allow for potential expansion of the OHV Use Area if new property becomes available, although any related increase in emissions would be minimized with continuation of seasonal restrictions on Red Sticker OHV use (Section 2.5.1.2). WROS designations for Alternative 3 would not result in any increases in boat density. Minor adverse air quality impacts from Alternative 3 would be greater than from Alternatives 1 and 2.
- Alternative 4 would allow for many of the same expanded or additional facilities as Alternative 3 but provides for a greater number of overnight and day use facilities. It also includes a separate launch area for personal watercraft at San Luis Creek Use Area and construction of a professional motocross track at the OHV Use Area. By providing the largest increase in facilities to accommodate additional visitors and motorized vehicle and vessel use, Alternative 4 could result in minor adverse air quality impacts that are greater than the other alternatives. In addition, WROS designations for Alternative 4 (Map 11) would allow for increases in boat

density in the southern part of San Luis Reservoir (from 50–110 acres per boat with the other alternatives to 20–50 acres per boat with Alternative 4) and the eastern part of O'Neill Forebay (from 20–50 acres per boat with the other alternatives to 10–20 acres per boat with Alternative 4).[9] These changes in boat density would be partly offset by the three-year phaseout of nonconformant two-stroke engines; however, short-term, minor adverse effects could remain.

**Dust Emissions Caused by Motorized Vehicles, Construction, or Recreation**
Dust and particulate matter in the Plan Area are potentially generated from three sources: automobile traffic and OHV use on dirt roads and unpaved areas; nonmotorized recreational trail use, including hiking, horseback riding, and mountain biking; and grading disturbance from facilities construction. The dust generated by motor vehicles—including OHVs—driving on dirt roads and unpaved areas would result in localized minor adverse air quality impacts. Other recreational trail use such as hiking and horseback riding is not likely to result in air quality impacts because is not usually fast or intensive enough to create substantial dust clouds. Other effects of trail erosion are discussed in Section 5.4.1.2 (under Trail and Road Use, Maintenance, and Construction). Site maintenance and facilities construction that includes ground-disturbing activities could raise dust and cause minor adverse impacts to air quality.

These effects would vary by alternative as follows:

- Alternative 1, No Action/No Project, would not expand or construct facilities, roads, or trails, but use of unpaved roads and trails, along with standard maintenance activities such as trail grading, would continue. These activities could have minor, short-term adverse effects to air quality, but to a lesser degree than the action alternatives.
- Alternative 2 proposes some additional features and facilities that could accommodate or support additional visitors and increase motorized vehicle travel in unpaved areas (see "Emissions from Motorized Vehicles and Vessels," above). These changes could result in minor adverse effects to air quality that are greater than Alternative 1 but less than Alternatives 3 and 4. Implementation of a trails management plan that incorporates BMPs to reduce dust could have a beneficial impact on dust emissions that would not be realized under Alternative 1. With implementation of measures such as those described in Section 5.4.2.4, any residual impacts would be minor.
- Alternative 3 would allow for a greater number of features and facilities that could accommodate or support additional visitors and increase motorized vehicle travel in unpaved areas (see "Emissions from Motorized Vehicles and Vessels," above), compared with Alternative 2. This alternative would also allow for new trails linking Basalt Use Area with

[9] Acres per boat for each WROS zone are described in Sections 4.3.1 through 4.3.3.

Pacheco State Park and Dinosaur Point with surrounding areas. As part of the proposed trails management plan, trail construction would incorporate BMPs to minimize dust emissions, and as stated above, routine trail use is not expected to create a substantial amount of dust. Potential expansion of the OHV Use Area, if new property becomes available, could result in an increase in dust emissions from additional OHV use. This increase could be partially offset by paving all unpaved roads in Medeiros Use Area, which is also proposed under Alternative 3. As with Alternative 2, implementation of a trails management plan could have a beneficial impact on dust emissions that would not be realized under Alternative 1. Overall, Alternative 3 could have minor adverse air quality impacts that are greater than Alternatives 1 and 2 but less than Alternative 4. With implementation of measures such as those described in Section 5.4.2.4, any residual impacts would be minor.

- Alternative 4 would allow for new trails linking Basalt Use Area with Dinosaur Point Use Area and Los Banos Creek Use Area and Basalt Use Area. In addition to allowing for expansion of the OHV Use Area, Alternative 4 proposes construction of a professional motocross track. The proposed trails and changes to the OHV Use Area would increase dust emissions compared with Alternative 3. This increase could be partially offset by paving all unpaved roads in Medeiros Use Area, which is also proposed under Alternative 4. Otherwise, facility, road, and trail maintenance and construction, and any associated increase in motorized vehicle travel on unpaved areas, would be the same as Alternative 3. Alternative 4 could result in minor to major adverse air quality impacts from dust emissions. Implementation of measures such as those described in Section 5.4.2.4 would reduce the severity of impacts; however, minor adverse impacts would remain.

When specific construction and maintenance activities are developed, a site-specific environmental analysis would be conducted and a more focused assessment of the activity's impacts to air quality would occur. At that time, applicability of the SJVAPCD's Indirect Source Review Rule (Section 2.5.1.2) would be evaluated, although the 2 ton per year threshold of construction $NO_x$ and $PM_{10}$ emissions is not anticipated to be exceeded. If major impacts to air quality were to be identified, the proposed project would be modified or mitigation measures would be implemented to reduce these impacts to no-impact levels (see Section 5.4.2.4, Mitigation Measure AQ1).

**Short-Term Combustion Emissions Caused by Prescribed Burning or Wildland Fires** All four alternatives include the potential for short-term, localized impacts from wildland fires or prescribed burns. Prescribed burns are not conducted regularly in the Plan Area. These effects would vary by alternative as follows:

- Alternative 1, No Action/No Project, would not plan for or include prescribed burns. As prescribed burns reduce fuel loads that can contribute

to wildland fires, the risk of wildland fire would be somewhat elevated under this alternative. Fires, whether accidental or prescribed, would result in temporary, localized increases in combustion emissions that would have minor adverse impacts on air quality.

- Alternatives 2, 3, and 4 include the development of a vegetation management statement, which would allow prescribed burning in accordance with the Cal Fire Vegetation Management Program (Section 3.2.5). The vegetation management statement would provide timing guidelines to minimize impacts to air quality (such as not conducting burns on days when air quality is below normal conditions). Residual impacts would still be detectable and therefore would be classified as minor.

**Greenhouse Gas Emissions and Climate Change** Motor-driven equipment used for activities such as digging, grading, and paving during construction of Plan Area facilities has the potential to generate additional ozone precursors, carbon monoxide, nitrogen and sulfur oxides, and particulate matter in the Plan Area. These localized, short-term increases would be greatest for Alternatives 3 and 4, and less for Alternative 2. Alternative 1 would involve no construction; therefore, emissions would not increase.

Motorized vehicle traffic to, from, and within the Plan Area also has the potential to result in GHG emissions. GHG emissions from existing vehicle and motorized watercraft use were estimated using the CARB EMFAC 2007 and Offroad 2007 models, as described in Section 2.5.3. The CARB EMFAC 2007 post-processor was used to account for recently adopted California GHG regulations for passenger vehicles. The modeling assumed a 98 percent increase in daily vehicle trips and boat launches in future year 2040, as was assumed for the estimate of future criteria pollutants (see "Criteria Pollutant Emissions from Motorized Vehicles and Vessels," above). Table 5-2 shows estimated GHG emissions from future vehicle and motorized watercraft use, quantified as the pollutants analyzed in Section 2.5.3.

**Table 5-2**
**Future GHG Emissions (2040)**

| Parameter | Pollutant | | | |
|---|---|---|---|---|
| | $CO_2$ | $CH_4$ | $N_2O$ | $CO_2e$ |
| Vehicle Emission Factors (lb/mi) | 0.91 | 1.05E-04 | 0.06 | 20.61 |
| Vehicle Emissions (tons/yr) | 435.34 | 0.05 | 30.29 | 9825.12 |
| Boat Emission Factors (ton/boat) | 2.83E-03 | 1.23E-05 | 7.92E-07 | 3.33E-03 |
| Boat Emissions (tons/day) | 0.07 | 3.23E-04 | 2.09E-05 | 0.09 |
| Boat Emissions (tons/year) | 27.23 | 0.12 | 0.01 | 32.08 |
| Total Emissions (tons/year) | 462.58 | 0.17 | 30.29 | 9,857.20 |
| Total Emissions (metric tons/year) | 419.64 | 0.15 | 27.48 | 8,942.30 |

Note: The data shown were calculated using the 2010 CARB GHG inventory for the state, which only covered up to 2008.

The emissions estimates shown in Table 5-2 are considered highly conservative and are not expected to be exceed by any of the Plan alternatives. Compared to Alternative 1, Alternatives 2 through 4 would allow for some level of net increase in total vehicle hours in the Plan Area from the operation of motorized vessels or vehicles. Alternative 4 would increase it the most, and Alternative 2 the least. Unlike Alternative 1, the action alternatives would also impose a three-year phaseout of nonconformant two-stroke engines, which is expected to reduce GHG emissions.

As discussed in Section 2.5.1.5, no numeric thresholds of significance for GHG emissions exist. The SJVAPCD has established performance-based standards to assess significance of project-specific GHG emissions on global climate change. According to SJVAPCD guidelines, if Best Performance Standards (BPS) are adopted for a project, the GHG cumulative impacts can be considered less than significant. As of January 2012, the BPS that have been approved apply primarily to stationary sources. For projects that involve mobile sources such as this Plan, one of the following would be required to determine that the project would have a less than cumulatively significant impact:

- Demonstration of a 29 percent reduction in GHG emissions from business-as-usual, or
- Compliance with an approved GHG plan or mitigation program.

Few of the vehicles and vessels in use in the Plan Area are part of a fleet intended to operate within the Plan Area, thus it is infeasible to apply measures that would reduce GHG emissions by 29 percent. As vehicle manufacturers are expected to follow the California and federal GHG regulations for light-duty vehicles (Section 2.5.1.5), future GHG emissions are expected to decrease even if visitor use of the Plan Area increased (either from regional population growth or Plan elements that would accommodate additional visitation). Full implementation of the Pavley standards are expected to result in a 22 percent (for 2009–2012) to 30 percent (for 2013–2016) reduction in GHG emissions. When California and federal regulations to reduce GHG emissions are in effect, a combined 30 percent reduction in GHG emissions is expected to result from visitor vehicles in the Plan Area. Therefore, at this time, any increase in GHG levels from Plan implementation would be considered minor and less than significant.

In addition, the Air Quality Element of the Draft Merced County General Plan Update (Policy AQ-1.5; Merced County 2011) calls for preparing a Climate Action Plan. That plan would include an inventory of 1990 and 2010 greenhouse gas emissions, determine project-related air quality impacts using analysis methods and significance thresholds recommended by the SJVAPCD, and identify strategies to achieve the SJVAPCD emission reduction targets of 5 percent by 2020 and 10 percent by 2035. If Merced County's proposed Climate Action Plan qualifies as an approved GHG plan or mitigation program in accordance with SJVAPCD guidelines, compliance with the Climate Action Plan would render GHG emissions from implementation of the San Luis Reservoir RMP/GP minor and less than significant.

#### *5.4.2.4 Mitigation*

The following would be considered and applied as necessary for all of the action alternatives, including during maintenance and construction activities.

**Mitigation Measure AQ1** The following measures from the San Joaquin Valley Air Pollution Control District's Guide for Assessing and Mitigating Air Quality Impacts (SJVAPCD 2002) would be considered as appropriate for all of the action alternatives:

- Apply county general plan policies, local ordinances, and state and federal policies;
- Provide pedestrian/transit-oriented design elements where appropriate and feasible;
- Provide traffic flow improvements for areas affected by plan proposals, where practicable;
- At least twice daily, water all active construction areas, disturbed areas, stock piles, and other loose materials;
- Cover the loads of all trucks hauling soil, sand, and other loose materials;
- Water at least twice daily or pave all access roads, parking areas, and staging areas;
- Control fugitive dust emissions from clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities through watering or presoaking, where necessary;
- Sweep paved areas and roads to remove the accumulation of mud or dirt;
- Hydroseed or apply nontoxic soil stabilizers to inactive construction areas and replant vegetation in disturbed areas as quickly as possible;
- Limit traffic speeds on unpaved roads and minimize construction vehicle idling time;
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways;
- Design site layout and development to minimize the number of vehicle trips in the Plan Area, thereby reducing vehicle-related emissions;
- Minimize construction-related vehicle trips through carpooling and the elimination of unnecessary trips during project construction; and
- Use up-to-date technology in all furnaces, boilers, engines, and other lodging- and visitor-related air pollutant sources associated with new buildings and facilities.

### 5.4.3 Biological Resources

#### *5.4.3.1 Impact Summary*

The following activities and management actions have the potential to affect biological resources in the Plan Area:

- Facility maintenance, expansion, and development
- Camping, boat use, and day use
- Trail and road use and construction

- Resource management, including prescribed burns
- Climate change

#### 5.4.3.2 Impact Criteria (Biological Resources)

- Beneficial Impact (NEPA): Impact that is detectable and positively alters historical or desired conditions. Beneficial impacts would contribute to the enhancement of vegetation, wildlife, fisheries and aquatic communities, or special-status species. There is no CEQA equivalent to a NEPA beneficial impact.
- No Impact: Impact that cannot be detected.
- Minor Adverse Impact (NEPA): Impact that is detectable and within or below regulatory standards or thresholds, and does not interfere with Plan Area goals. This is equivalent to a CEQA less than significant impact.
- Major Adverse Impact (NEPA): Impact that is detectable and significantly and negatively alters historical baseline or desired conditions of biological resources. Major adverse impacts would contribute to the deterioration of vegetation, wildlife, fisheries and aquatic communities, or special-status species. A major adverse impact is equivalent to a CEQA significant impact, which is gauged as being equivalent to one or more of the following results:
  - A substantial adverse effect, either directly or indirectly 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 DFG or USFWS;
  - A substantial adverse modification to designated critical habitat regulated by the USFWS;
  - A substantial adverse effect on any riparian or other sensitive natural community identified in local or regional plans, policies, and regulations, or by DFG or USFWS;
  - 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 pools, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
  - Substantial interference 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;
  - Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
  - Conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state HCP.

Potential impacts to special-status species (those covered by ESA and/or CESA) in this section have been evaluated using the terminology and the degree of impact as described above. Potential impacts to special-status species were not addressed using ESA or CESA terminology or methodology. Project-level actions

discussed under each alternative will not be implemented until separate NEPA and/or CEQA compliance is completed. At that time, project-level (site-specific) impacts to special-status species will be evaluated, and consultation under ESA and/or CESA would be initiated as needed.

#### *5.4.3.3 Environmental Evaluation*

**Facility Maintenance, Expansion, and Development** All of the alternatives assume that existing facilities would be maintained, and the action alternatives allow for some replacement or expansion of existing facilities and construction of new facilities. This subsection addresses maintenance, expansion, and development of facilities other than trails and roads, which are addressed below under the subheading "Trail and Road Use and Construction." Ongoing maintenance and facility expansion and development could have a range of direct and indirect effects to biological resources from the following mechanisms:

- Loss of or disturbance to trees, sensitive habitat, or special-status vegetation or wildlife species
- Introduction of invasive species
- Reduction in habitat quality
- Habitat fragmentation

For individual development projects proposed in all action alternatives, a site-specific environmental review and focused analysis of potential impacts to biological resources would be conducted as appropriate. The design and siting of expanded or new facilities would avoid sensitive resources to the extent feasible. If major adverse impacts to biological resources are identified, the proposed project would be modified to reduce those impacts, and/or project-specific mitigation measures would be developed to compensate for impacts.

Potential effects are described below for vegetation and wildlife by alternative.

*Vegetation and Natural Communities* No special-status plant species or trees protected by local policies or ordinances have been recorded in the Plan Area, and the Plan Area is not subject to an HCP or NCCP. However, the Plan Area contains potential wetland vegetation and vernal pool complexes, potential habitat for special-status plants, and two special-status communities (sycamore alluvial woodland and valley sink scrub). Construction of expanded or new facilities and maintenance of existing facilities could have temporary and permanent effects ranging from short-term vegetation disturbance (such as trampling from construction equipment or staging) to direct removal or permanent alteration. Ground disturbance related to construction or maintenance can increase the ability of nonnative or invasive species to spread, including on the tires of construction vehicles. With implementation of the Plan, major adverse impacts on vegetation and natural communities would be avoided, but minor adverse impacts could occur. The effects would vary by alternative as follows:

- Alternative 1, No Action/No Project, would not construct any additional features or facilities in the Plan Area, but standard, ongoing facility

maintenance would continue. These activities could have short-term, minor adverse effects, but to a lesser degree than the action alternatives.

- Alternative 2 proposes the fewest additional features and facilities of the three action alternatives. Minor removal or other disturbance of native vegetation could result from expanding the group picnic facilities at San Luis Creek Use Area and the campground at Los Banos Creek Use Area, adding up to 30 tent sites at the northwestern shoreline of San Luis Creek Use Area, and relocating the equestrian camp at Los Banos Creek Use Area. Alternative 2 and the other action alternatives would implement a focused vegetation management statement to allow for rehabilitation of natural ecosystems using BMPs (described in detail in Section 4.4.2), which would have a beneficial impact that would not be realized under Alternative 1. Alternative 2 and the other action alternatives would allow for reopening or relocating the boat launch at Medeiros Use Area and exploring engineering solutions for shallow-water areas in O'Neill Forebay, including dredging and removal of sandbars. These activities have the potential to temporarily or permanently affect wetland vegetation if any is present. Minor adverse effects to vegetation caused by maintenance, expansion, or construction from Alternative 2 would be greater than from Alternative 1 but less than from Alternatives 3 and 4. Prudent siting of new facilities and implementation of other measures such as those described in Section 5.4.3.4 would reduce potential impacts to minor.
- Alternative 3 would allow for additional camping facilities at all of the use areas, including alternative overnight lodging such as cabins or yurts at Basalt and San Luis Creek use areas. This alternative also provides for new or expanded day use facilities such as 30 shade ramadas at Dinosaur Point Use Area; a new boarding float, ADA-accessible fishing pier, and additional group picnic facilities at San Luis Creek Use Area; and shelter and restrooms at Medeiros Use Area. The proposed improvements would not overlap with CNDDB-recorded occurrences of special-status plants (Map 6g) or habitat communities (Map 6h), wetlands recorded in the National Wetland Inventory (Map 6a), or vernal pool habitat recorded in Holland 2009 (Map 6b). In addition, these facilities would be primarily sited in FC Zones, where development is already present; therefore, no major adverse impacts to vegetation are anticipated. Like Alternative 2, Alternative 3 would also allow for reopening or relocating the boat launch at Medeiros Use Area and dredging/removing sandbars in shallow-water areas in O'Neill Forebay, and in addition would expand the boat launch at San Luis Creek Use Area. These actions have the potential to temporarily or permanently affect wetland vegetation if any is present. Minor to major adverse effects to vegetation could result from Alternative 3, but prudent siting of new facilities and implementation of other measures such as those described in Section 5.4.3.4 would reduce potential impacts to minor.

- Alternative 4 would construct many of the same additional facilities as Alternative 3 but would also allow for a new marina and a personal watercraft launch area at San Luis Creek Use Area; a marina at Dinosaur Point Use Area; construction of a restaurant and motel at Medeiros Use Area; and potential reconfiguration of the OHV Use Area to include a professional motocross track. Alternative 4 would provide for the most new camping facilities of the action alternatives, including a new wayside campground near the entrance station for Medeiros Use Area. Waterside facilities such as new or enhanced marinas and the personal watercraft launch could have minor to major adverse effects on wetland vegetation if any is present. Addition of a motocross track within the existing boundaries of the OHV Use Area is not anticipated to have major adverse effects because no special-status vegetation or habitat communities are known to exist there, but expansion of the OHV Use Area could result in the loss of native grassland, a minor adverse impact. Minor to major adverse effects to vegetation could result, but prudent siting of new facilities and implementation of other measures such as those described in Section 5.4.3.4 would reduce potential impacts to minor.

*Wildlife* Special-status mammals, amphibians, birds, and reptiles are known to occur or have potential habitat in Plan Area, and the western side of the Plan Area is within designated critical habitat for California red-legged frog (federally listed as threatened and a California species of special concern). None of the proposed facilities would remove large tracts of potential habitat or substantially reduce opportunities for wildlife movement. Most development would be confined to existing developed FC zones and would have relatively small footprints. However, construction of expanded or new facilities and maintenance of existing facilities could have temporary and permanent effects ranging from short-term disturbance caused by construction noise and equipment, to direct removal or permanent alteration of potentially suitable habitat. With implementation of the Plan, major adverse impacts on wildlife would be avoided, but minor adverse impacts could occur. The effects would vary by alternative as follows:

- Alternative 1, No Action/No Project, would not construct any additional features or facilities in the Plan Area, but standard, ongoing activities would continue. These activities could have short-term, minor adverse effects to wildlife, but to a lesser degree than the action alternatives.
- Alternative 2 proposes the fewest additional features and facilities of the three action alternatives. The construction or expansion of facilities at San Luis Creek Use Area (expanding the five group picnic areas, constructing a multipurpose building, and adding up to 30 tent sites on the northwestern shoreline) could have minor, temporary effects to American badger habitat (Map 6c). Alternative 2 and the other action alternatives would allow for reopening/relocating the boat launch at Medeiros Use Area. Although CNDDB records from the 1930s exist for blunt-nosed leopard lizard near Medeiros Use Area and San Joaquin kit fox have been documented in the vicinity (Maps 6f and 6c), the species are not expected to be affected by

the proposed boat launch work. At Los Banos Creek Use Area, adding up to 30 tent sites at the existing campground on the North Shore and relocating the equestrian camp has the potential to result in minor temporary and/or permanent effects to San Joaquin whipsnake and western pond turtle (Map 6f). Minor adverse effects to wildlife caused by maintenance, expansion, or construction from Alternative 2 would be greater than from Alternative 1 but less than from Alternatives 3 and 4. Site-specific impacts to wildlife from proposed features or facilities will be evaluated in detail in project-level documents. These documents will specify location- and species-specific BMPs and measures such as those described in Section 5.4.3.4 to minimize and avoid impacts to wildlife populations. Minor residual impacts could remain.

- Alternative 3 would have potential effects to the same wildlife species as Alternative 2. However, it would include a greater degree of facility development in each location discussed above and also allow for Backcountry (BC) Zones at Medeiros and Los Banos Creek use areas to become FC Zones. Facilities would be sited to not interfere with potential San Joaquin kit fox use of artificial dens that have been installed in the Plan Area. At the OHV Use Area, Alternative 3 would provide for minor additions to existing facilities such as shade ramadas, minor infrastructure improvements, addition of six primitive campsites, and potential future expansion of the area if new property becomes available. Expansion of the OHV Use Area could affect habitat for San Joaquin kit fox (Map 6c) and blunt-nosed leopard lizard (Map 6f). Minor adverse effects to wildlife caused by maintenance, expansion, or construction from Alternative 3 would be greater than from Alternatives 1 and 2 but less than from Alternative 4. As described for Alternative 2, project-level documents will address potential site-specific wildlife impacts and location- and species-specific BMPs and measures such as those described in Section 5.4.3.4 to minimize and avoid those impacts. Minor residual impacts could remain.
- Alternative 4 would construct many of the same additional facilities as Alternatives 2 and 3 but would also allow for a new marina and a personal watercraft launch area at San Luis Creek Use Area; a marina at Dinosaur Point Use Area; construction of a restaurant and motel at Medeiros Use Area; and potential reconfiguration of the OHV Use Area to include a professional motocross track. Alternative 4 would provide for the most new camping facilities of the action alternatives, including a new wayside campground near the entrance station for Medeiros Use Area. Expanding the boat launch at Dinosaur Point Use Area would require construction activity near designated CRLF critical habitat and anecdotal sightings of CRLF, although the nearest CNDDB occurrences of CRLF are close to 2 miles away (Map 6d). Alternative 4 would affect the same wildlife species as Alternative 3, but potential effects from Alternative 4 would be generally greater because of additional development in the locations described above. Minor to major adverse effects to wildlife caused by maintenance, expansion, or construction from Alternative 4 would be

greater than from the other alternatives. As described for Alternatives 2 and 3, project-level documents will address potential site-specific wildlife impacts and location- and species-specific BMPs and measures such as those described in Section 5.4.3.4 to minimize and avoid those impacts. Minor residual impacts could remain.

**Camping, Boat Use, and Day Use** All of the alternatives would continue recreational uses in the Plan Area. The action alternatives would allow for some expansion of facilities that would accommodate increased visitation and recreation uses. Increased recreation could have a range of direct and indirect effects to biological resources from the following mechanisms:

- Reduction in habitat quality caused by human disturbance, including increased presence, noise, and light
- Disturbance to vegetation that provides habitat for special-status species
- Introduction of invasive species, including invasive mussels

With all alternatives, visitor use of the Plan Area can be expected to increase as a result of population growth in Merced County and other nearby counties over the Plan horizon (Section 2.12). In general, effects would be concentrated in the vicinity of visitor-serving facilities. The degree of those effects would depend on the proximity of campsites, day use areas, interpretive facilities, and shoreline areas to sensitive biological resources.

With all alternatives, the potential exists for wildlife to forage on human food at camping and picnic facilities as a result of improper storage or disposal. Human food may attract and support raccoons or striped skunks in mesic areas such as Basalt and Los Banos Creek use areas. These animals can carry rabies and pose an epidemiological threat to wildlife such as San Joaquin kit fox. Availability of human food may also alter the behavior of kit fox, which are adept at changing foraging patterns in urban areas to scavenge for food (USFWS 1998). Access to human food may also support feral cats, feral dogs, and red fox, a competitor of San Joaquin kit fox for food and dens.

Noise and light associated with RV traffic, generators, and large groups of people (50 or more) in group picnic or camping facilities, especially during the dusk through dawn hours, have the potential to degrade habitat quality for animals such as San Joaquin kit fox and potentially nesting birds. Boating has the potential to introduce noise disturbance and human presence to shoreline areas and result in potential disturbance to waterfowl.

Finally, with all alternatives, boating and other water-based recreation could result in the introduction of invasive quagga mussels *(Dreissena rostriformis bugensis)* or zebra mussels *(D. polymorpha)* (Section 2.6.6.1). Invasive mussels can multiply quickly and clog waterways and infrastructure (e.g. pipelines), affect lake ecosystems, and create costly maintenance issues. The mussels consume large amounts of phytoplankton in water, which can lead to a reduction in zooplankton, some crustaceans, and fish (California Science Advisory Panel

2007). The decrease of phytoplankton also increases water clarity (DFG 2008), which can cause an explosive growth of bottom algae. The result can be a shift in native species and a disruption of the ecological balance of entire bodies of water. California Fish and Game Code Section 2302 was enacted to require any entity that owns or manages a reservoir where public recreational, boating, or fishing is allowed to assess the vulnerability of the reservoir to infestation by invasive mussels and to develop and implement a program to prevent the introduction of invasive mussels.

As described in Section 2.9.1, a mandatory vessel inspection program was implemented in the Plan Area in October 2011. The inspection program is designed to address not only boats, personal watercraft, kayaks, canoes, sailboards, inflatables, and float tubes but also items on these vessels that are exposed to water, such as lifejackets, ropes, and wetsuits (which must be dry to ensure no mussels or larvae, if attached, have survived). The program will remain in place until October 2014 and may continue if funding is available.

Potential effects to wildlife and vegetation are described below by alternative.

- Alternative 1, No Action/No Project, would not construct any additional features or facilities in the Plan Area to accommodate increased visitation or recreation. Table 4-1 lists current recreation uses for Alternative 1. Assuming visitor use would increase as a result of population growth, minor adverse effects to wildlife and vegetation could occur from increased recreation and use of existing facilities. Alternative 1 would not provide for the development and implementation of focused management plans for boating, vegetation, and trails, which would be included with the action alternatives. With the current mandatory vessel inspection program, no impacts from the introduction of invasive mussels are expected. If no funding is available to continue the program, , Alternative 1 would include a voluntary self-inspection program for watercraft operators to comply with California Fish and Game Code Section 2302 and allow for other potential inspection or control measures. Overall effects for Alternative 1 would be minor.
- Alternative 2 would provide for minor increases in recreation at Basalt, San Luis Creek, and Los Banos Creek use areas by allowing for a minor expansion in camping facilities. Adding sites and or reconfiguring the campground to accommodate larger RVs would be considered at Basalt Use Area. This alternative would allow for expanding the group picnic facilities at San Luis Creek Use Area and adding up to 30 tent sites each at the San Luis Creek and Los Banos Creek use areas. The increase in camping capacity could result in more human disturbance such as noise and trash, which could interrupt wildlife foraging and nesting patterns. The addition of camping and day use facilities could accommodate a nominal increase in boating (assuming that some of the additional visitors bring boats). Relocating/reopening the boat launch at Medeiros Use Area could also attract a greater number of boats on San Luis Reservoir and

O'Neill Forebay. Additional boating in any Plan Area waterbody could slightly increase disturbance to lake waterfowl and also increase the risk of potential impacts from invasive mussels. Alternative 2 would provide for the development and implementation of focused management plans for boating, vegetation, and trails, which would benefit Plan Area biological resources. With the current mandatory vessel inspection program, no impacts from the introduction of invasive mussels are expected. If no funding is available to continue the program, this alternative would include a watercraft operator self-inspection program to comply with California Fish and Game Code Section 2302, allow for evaluating other potential inspection or control measures, and include measures such as those described in Section 5.4.3.4 to mitigate potential impacts if invasive mussels were detected in Plan Area waterbodies. This would reduce the potential major adverse impacts from introduction or infestation of invasive mussels to minor levels. Site-specific impacts to wildlife from proposed features or facilities will be evaluated in detail in project-level documents. These documents will specify location- and species-specific BMPs and measures such as those described in Section 5.4.3.4 to minimize and avoid impacts to wildlife populations. However, minor adverse residual impacts could remain. Overall, Alternative 2 could have minor adverse effects from recreation that would be greater than with Alternative 1 but less than with Alternatives 3 and 4.

- Alternative 3 would allow for increased camping, boating, and water sport opportunities by providing additional camping capacity at Basalt and Medeiros use areas; a backpackers campground with up to 10 tent sites and vault toilets in the Basalt BC Zone; up to 30 tent sites at Dinosaur Point Use Area; an expanded boat launch and additional camping and group picnic facilities at San Luis Creek Use Area; up to six primitive campsites, minor infrastructure improvements, and potential expansion of the OHV Use Area; a shelter/restroom and parking at Medeiros Use Area; and additional tent/RV campsites at Los Banos Creek Use Area where no visitor facilities currently exist. The resulting increases in camping and boating opportunities could have minor to major adverse effects to vegetation and wildlife, by increasing the human traffic, trash, and noise around the use areas and on the water. In particular, the addition of up to 100 new tent/RV sites and 100 primitive sites at Medeiros Use Area would increase the human and vehicle traffic, noise, and trash, which could interrupt wildlife foraging and nesting patterns. As with Alternative 2, Alternative 3 includes potentially relocating/reopening the boat launch at Medeiros Use Area, which could result in an increase in boating and therefore increase the risk of potential impacts from invasive mussels. Overall, Alternative 3 could have minor to major adverse effects from recreation that would be greater than with Alternatives 1 and 2 but less than with Alternative 4. As with Alternative 2, with the current mandatory vessel inspection program, no impacts from the introduction of invasive mussels are expected. If no funding is available to continue the program,

Alternative 3 would implement a watercraft operator self-inspection program, allow for evaluating other potential inspection or control measures, and include measures such as those described in Section 5.4.3.4 to mitigate potential impacts if invasive mussels were detected in Plan Area waterbodies, which would reduce potential major adverse impacts to minor levels. Alternative 3 would also provide for the development of project-level documents to address potential site-specific wildlife impacts and location- and species-specific BMPs and measures such as those described in Section 5.4.3.4 to minimize and avoid those impacts; however, minor adverse residual impacts would remain.

- Alternative 4 would have generally the same effects from recreation as Alternative 3, except the level of disturbance to vegetation and wildlife has the potential to be greater. Alternative 4 would provide slightly more camping capacity than Alternative 3, including in areas where no visitor facilities currently exist (La Plata, Padre Arroyo Flat [for boat-in primitive camping], and South Shore at Los Banos Creek Reservoir). WROS designations for Alternative 4 (Map 11) would allow for increases in boat density in the southern part of San Luis Reservoir (from 50–110 acres per boat with the other alternatives to 20–50 acres per boat with Alternative 4) and the eastern part of O'Neill Forebay (from 20–50 acres per boat with the other alternatives to 10–20 acres per boat with Alternative 4). In addition, Alternative 4 would allow for both expansion of the boat launch at Dinosaur Point and consideration of relocating/reopening the boat launch at Medeiros Use Area, which could result in an increase in boating and the associated risk of potential impacts from invasive mussels. The primary difference between the two alternatives would be at the OHV Use Area, where Alternative 4 would allow for reconfiguration of the existing area, potentially by creating a professional motocross track. As with Alternatives 2 and 3, with the current mandatory vessel inspection program, no impacts from the introduction of invasive mussels are expected. If no funding is available to continue the program, Alternative 4 would implement a watercraft operator self-inspection program, allow for evaluating other potential inspection or control measures, and include measures such as those described in Section 5.4.3.4 to mitigate potential impacts if invasive mussels were detected in Plan Area waterbodies, which would reduce potential major adverse impacts to minor levels. Alternative 4 would also provide for the development of project-level documents to address potential site-specific wildlife impacts and location- and species-specific BMPs and measures such as those described in Section 5.4.3.4 to minimize and avoid those impacts; however, minor adverse residual impacts would remain.

**Trail and Road Use and Construction** Trail and road use in and around the Plan Area will occur with all alternatives. Trail and road use and construction could have a range of direct and indirect effects to biological resources as a result of the following:

- Disturbance of habitat that provides food and shelter for special-status wildlife species
- Disturbance of wildlife, including wildlife foraging, through increased presence of humans and their canine companions
- Injury or mortality to individuals by vehicle strikes or other means
- Disturbance of wildlife migration and movement corridors
- Disturbance of native vegetation and potential introduction of non-native or invasive species

With all alternatives, vehicles could hit wildlife species that use the Plan Area for movement and foraging, potentially resulting in injury or mortality. State Route (SR) 152 bisects summer and winter habitat for California red-legged frog, and the species has been observed on both sides of the road.

Current state law (Title 14, California Code of Regulations, Section 4312) prohibits dogs on trails and off-leash. There have been no reports of pets harassing wildlife on trails or elsewhere in the Plan Area**.** Trail improvements under the action alternatives would not increase habitat fragmentation appreciably. Trails would have native soil surfaces and be relatively narrow, which will not create barriers to the free movement of species. Scat from local wildlife is frequently found on existing trails in the Plan Area, and it is likely that wildlife would respond similarly to any new trails implemented under the action alternatives.

For individual trail/road use projects proposed in all action alternatives, a site-specific environmental study and focused analysis of potential impacts to biological resources would be conducted. The design and maintenance of any new trails and roads would account for sensitive resources to the maximum extent feasible and avoid effects where practicable. If major adverse impacts to biological resources are identified, the proposed project would be modified to reduce those impacts, and/or project-specific mitigation measures would be developed to compensate for specific impacts.

Potential effects are described below for vegetation and wildlife by alternative.

*Vegetation and Natural Communities* Alternative 1 would not construct or allow for any additional trails or roads in the Plan Area, but standard maintenance activities such as trail grading would continue. These activities could have short-term, minor adverse effects to vegetation, but to a lesser degree than the other action alternatives.

- Alternative 2 would not construct or allow for any additional trails or roads in the Plan Area, but this and the other action alternatives would provide for improving the existing road at the Los Banos Creek Use Area entrance station, where flooding occurs from seasonal rains and water releases. Roadwork in this area could affect wetland vegetation if any is present along the roadway, resulting in minor to major adverse effects. Standard maintenance activities such as trail grading would continue and

could have short-term, minor adverse effects to vegetation. For Alternative 2, prudent siting of new trails and implementation of measures such as those described in Section 5.4.3.4 would avoid or minimize potential impacts.

- Alternative 3 would allow for the development of two multi-use trails linking Basalt Use Area with Pacheco State Park and linking Dinosaur Point with Pacheco State Park and the San Luis Wildlife Area, as well as construction of a road from San Luis Creek Campground to Check 12 in San Luis Creek Use Area. The construction of new trails through undeveloped areas increases the potential for impacts to native vegetation and habitat for special-status vegetation, and for the spread of invasive species. Minor to major adverse effects to vegetation could result from Alternative 3, but prudent siting of new trails and roads and implementation of measures such as those described in Section 5.4.3.4 would reduce potential impacts to minor.
- Alternative 4 would allow for trails linking Basalt Use Area with Dinosaur Point and Los Banos Creek Use Area with to Basalt Use Area. The trail from Los Banos Creek Use Area has the potential to affect valley sink scrub and sycamore alluvial woodland, if present (Table 2-17 and Map 6h), through vegetation removal during construction and habitat disturbance from hikers and regular trail maintenance. This alternative would also include a road from San Luis Creek Campground to Check 12 in San Luis Creek Use Area. Minor to major adverse effects to vegetation could result, but prudent siting of new trails and other facilities and implementation of measures such as those described in Section 5.4.3.4 would reduce potential impacts to minor.

*Wildlife*

- Alternative 1 would not construct or allow for any additional trails or roads in the Plan Area, but standard maintenance activities such as trail grading would continue. These activities could have short-term, minor adverse effects to wildlife, but to a lesser degree than the other action alternatives.
- Alternative 2 would not construct or allow for any additional trails or roads in the Plan Area, but as noted above, roadwork would be conducted to address flooding near the entrance station to Los Banos Creek Use Area. This activity could have minor to major adverse effects to San Joaquin whipsnake and western pond turtle (Map 6f). Standard maintenance activities such as trail grading would continue, which could have short-term, minor adverse effects to wildlife, but to a lesser degree than the other action alternatives.
- Alternative 3 would allow for the development of two multi-use trails linking Basalt Use Area with Pacheco State Park and linking Dinosaur Point with Pacheco State Park and with the San Luis Wildlife Area. The creation of new trails could lead to the disturbance of wildlife habitat, and human presence on new trails along the shoreline of San Luis Reservoir

could disturb foraging patterns for wildlife that use the lake shore for food and water. The construction or expansion of facilities at San Luis Creek Use Area could include a potential interchange for access from SR 152, which could disturb or remove American badger habitat (Map 6c). Major adverse impacts from trail or road development, maintenance, and use would be avoided through implementation of measures such as those described in Section 5.4.3.4; however, minor adverse impacts could remain.

- Alternative 4 would include generally the same trail and road improvements proposed for Alternative 3, and impacts would be minor to major as described for Alternative 3. In addition, Alternative 4 would also allow for a new trail linking Los Banos Creek Use Area with Basalt Use Area. This trail has the potential to increase human traffic, trash, and disturbance in an area with documented San Joaquin kit fox occurrences and potential habitat for San Joaquin pocket mouse (Map 6c).[10] The construction of the trail and introduction of human activity could affect San Joaquin kit fox if present in the area, as well as other wildlife species that use the area for foraging and movement. For all proposed trails, construction and use would result in minor habitat loss and may result in a very slight fragmentation of habitat, particularly for kit fox. However, San Joaquin kit fox may actually use the trails (Cypher 2008); therefore, only minor adverse impacts are expected. Project-specific documents with location- and species-specific BMPs and mitigation measures such as those described in Section 5.4.3.4 would minimize and avoid impacts; however, minor adverse residual impacts would remain.

**Resource Management, Including Prescribed Burns** All of the action alternatives assume some resource management activities will be undertaken in the Plan Area. Plan goals and guidelines listed in Sections 4.2.1.5 and 4.2.1.6 provide for identifying, maintaining, and—where appropriate—protecting and/or restoring biological resources. The action alternatives propose resource management strategies such as developing a vegetation management statement (described in Section 4.4.2 and Goals RES-V4 and RES-V5) and a trails management plan, conducting habitat rehabilitation, inventorying wildlife species in the Plan Area, and maintaining wildlife corridors where feasible. These actions would result in beneficial impacts that would not be realized under Alternative 1, No Action/No Project.

All four alternatives include the potential for short-term, localized impacts from wildland fires or prescribed burns. Prescribed burns are not conducted regularly in the Plan Area.

Prescribed burns are typically conducted during the fall and winter months when fuel conditions make it harder for the fire to burn out of control. These burns also

[10] Although San Joaquin pocket mouse has been affected by habitat loss, it currently has no federal or state listing status.

typically occur outside of the nesting and breeding season to minimize impacts to wildlife. The impact of prescribed burns within the Plan Area is difficult to predict, but some of the factors influencing the potential effect on the landscape include the timing, site topography, vegetation composition, fuel conditions, existing firebreaks, and intended size of the burn. Under normal conditions, a prescribed burn conducted in accordance with approved Cal Fire procedures and control measures that also takes into account regional wildlife concerns has a minimal impact on natural resources. The use of fire as a landscape management tool also carries inherent risks, such as delay in regrowth and decrease in wildlife food sources. In addition, if the burns are conducted in a manner not consistent with Cal Fire and/or do not take into account the moisture content of the fuel load and animal nesting and breeding periods, there could be a risk of a major impact to biological resources within the Plan Area.

Alternatives 2, 3, and 4 include the development of a vegetation management statement, which would allow prescribed burning in accordance with the Cal Fire Vegetation Management Program (Section 3.2.5). Compliance with Cal Fire procedures and control measures would avoid major adverse impacts to biological resources. Minor adverse residual impacts could remain.

**Climate Change** Climate change could result in the increased variability of and overall reduction in precipitation in the Plan Area (Section 2.2.2). Decreased precipitation could reduce the area and persistence of wetlands and vernal pools, if present. Decreased precipitation could also reduce or eliminate vegetation or water-dependent habitats for special-status species. In addition, higher air temperatures could increase water temperatures, resulting in increased stress on fisheries. Warmer water temperatures could also increase the potential for invasive species infestations; for example, quagga mussel reproduction cycles respond favorably to warmer water temperatures (Reclamation 2011a). These conditions would occur regardless of which alternative is implemented, including No Action/No Project. Plan implementation would have no impact on biological resources with regard to climate change.

#### *5.4.3.4 Mitigation*

In addition to Goals and Guidelines RES-V1 through V5 and RES-W1 through W2, the mitigation measures listed below are examples of feasible measures that could be applied if Plan goals and guidelines are not sufficient to reduce potential impacts on biological resources. Individual projects will be carried out at different times in the Plan Area, and more detailed mitigation measures would be determined if needed on a project-specific basis. In addition to the measures detailed below, the implementation of Mitigation Measure AQ1 and WQ1 will reduce impacts to vegetation and wildlife in the Plan Area by reducing the potential for erosion and sedimentation into species habitat and the loss of valuable topsoil.

**Mitigation Measure BIO1** Before siting new facilities that would require ground disturbance, assessments would be conducted to determine whether wetland vegetation, special-status plants, or special-status natural communities

occur at the project site. If wetland vegetation, special-status plants, or special-status natural communities are identified, the facility site would be sited to avoid or minimize effects to these biological resources. If avoidance of impacts to wetland vegetation, special-status plants, or special-status natural communities is not possible, the following are some examples of mitigation measures that could be implemented to reduce the impacts.

- If a sensitive natural community were damaged or destroyed as a result of facility construction, an appropriate type and amount of natural community would be restored in a suitable location.
- If native grassland were removed, an appropriate amount of suitable native grassland habitat would be enhanced or restored. Enhancement or restoration would include weed management and planting and/or seeding of native plants collected from the local watershed.

**Mitigation Measure BIO2** Before new facilities are sited, assessments would be conducted to determine whether special-status wildlife species or habitat for those species occur at the project site. If special-status wildlife species or habitat is identified, the facility would be relocated to avoid the species or habitat. If avoidance and minimization of impacts to special-status wildlife species or habitat is not possible, the following are some examples of mitigation measures that could be implemented to reduce the impacts.

- Implement additional signage or patrols in new camping and day use areas to ensure that visitors understand and comply with Plan Area regulations under all alternatives.
- Operate concession stands such that trash and food products are inaccessible to animals at all times, under all alternatives.
- Time construction activities in the vicinity of special-status species habitat as appropriate to avoid impacts to the species, particularly nesting raptors, aestivating CRLF, and migrating waterfowl during their breeding period.

**Mitigation Measure BIO3** In the event that invasive mussels are identified in the Plan Area, the following control and eradication methods could be evaluated.

- The control and eradication methods outlined in the California Science Advisory Panel report *California's Response to the Zebra/Quagga Mussel Invasion in the West* (May 2007) are incorporated by reference. Methods that have been identified as technically feasible include dewatering, isolation and treatment, covering, heating, biocide treatment, mechanical removal, and/or a combination of these methods.
- If an infestation occurred at some future date, additional methods could be available that would be considered for implementation. Reclamation, in coordination with other state and federal agencies, is conducting research and field testing in several areas (Reclamation 2009), including field trials using *Pseudomonas fluorescens*, antifouling and foul-release coatings, ultraviolet (UV) treatment, controlling mussels with natural predators, and quagga mussel control using copper-ion generators.

**Mitigation Measure BIO4** The trails management plan will provide measures to avoid and minimize impacts to natural resources during trail construction, and the vegetation management statement will address invasive plant species and weed control. If it is not possible to avoid or minimize impacts from trail and road use and construction or from resource management, including prescribed burns, the following are some examples of mitigation measures that could be implemented to reduce the impacts.

- Monitor any known sensitive vegetation or natural community that occurs near trails to ensure its protection. If the vegetation or community occurs near trail edges and is subject to trampling, fencing and educational signs should be installed to prevent people from entering these areas.
- Expand annual weed control activities if there is a noticeable increase in weeds along trails to reduce the opportunities for weeds to spread into native areas.
- Create a Prescribed Burn Plan in accordance with the Cal Fire Vegetation Management Program for each proposed prescribed burn.
- Seek partnerships with adjacent private landowners on fuel management, including the use of prescribed burns. Ensure that prescribed burns on adjacent private lands do not adversely affect water quality and sediment conditions in the Plan Area through such coordination and partnerships.

### 5.4.4 Cultural Resources

As described in Chapter 2, a total of 51 prehistoric and historic cultural resources have been identified in the Plan Area. The resources include 40 in or around San Luis Reservoir, 10 at Los Banos Creek Reservoir, and one at O'Neill Forebay. In addition to these resources, a number of historic sites are known to exist in the Plan Area but have not been formally recorded (such as a toll road and precursor to SR 152 constructed by Andrew Firebaugh in 1857). Although numerous cultural resource studies have taken place in the SRA since the early 1960s, no inclusive systematic inventory of prehistoric and historic sites has been conducted. As a result, large portions of the Plan Area have never been surveyed and undocumented resources may exist in the area. Because of this likelihood, future developments in the Plan Area may have the potential to disturb cultural resources; however, cultural resource goals and guidelines will reduce impacts to these resources. For actions that will involve new ground-disturbing activity, an appropriate level of archaeological survey (which may include archival documentation, pedestrian survey, and/or subsurface exploration if necessary) will be conducted prior to disturbance in accordance with all applicable federal and state statutes.

#### *5.4.4.1 Impact Summary*

The following mechanisms have the potential to affect cultural resources in the Plan Area:

- Unauthorized collection and vandalism at cultural resource sites

- Ground-disturbing activities associated with facility installation or improvements, including new trail or road construction
- Prescribed burns and vegetation management
- Climate change

#### *5.4.4.2 Impact Criteria (Cultural Resources)*

- Beneficial Impact: Impact that would occur if a planning element results in enhanced visitor awareness regarding the fragile and irreplaceable nature of cultural resources, or if opportunities for public interpretation of cultural resource sites are implemented. There is no CEQA equivalent to a NEPA beneficial impact.
- No Impact: Impact that cannot be detected.
- Minor Adverse Impact: Impact to a cultural resource that does not qualify as a historic property, historic resource, or unique archaeological resource. This is equivalent to a CEQA less than significant impact.
- Adverse Impact: Impact that would occur if a proposed undertaking results in a Finding of Adverse Effect to a Historic Property in accordance with Section 106 or significant impact to a historic resource or a unique archaeological resource. An adverse impact is equivalent to a CEQA significant impact, which would result from one or more of the following:
  - A prehistoric or historic archaeological site or property of historic or cultural significance to a community or ethnic social group;
  - A prehistoric or historic archaeological site determined to be an "important archaeological resource" as defined in the State CEQA Guidelines;
  - A property that is listed or eligible for listing on the California Register/National Register; or
  - Any human remains, historic or prehistoric, including those interred outside of marked formal cemeteries.

In the event a significant cultural resource (historic property), as defined by the NRHP criteria; an historic resource, as defined by CRHR criteria; or a unique archaeological resource, as defined by CEQA; is identified that may be affected by future projects, the potential for impacts (effects) will be taken into consideration, and measures to avoid the resource will be considered. In the event the resource cannot be avoided, it would be resolved (36 CFR Section 800.6) through the resolution of adverse effect as spelled out in either a MOA or a PA executed by the federal agency and SHPO. The resource would be subject to mitigation measures such as data recovery, further study, enhanced recordation, interpretation, physical protection, or some combination of these measures.

#### *5.4.4.3 Environmental Evaluation*

**Unauthorized Collection and Vandalism** Under all alternatives, existing visitor uses have some potential to disturb or destroy cultural resources, particularly those that are not documented. The action alternatives include additional features or facilities in the Plan Area that would accommodate or support increased visitor use. Increased visitation, or visitation to parts of the Plan

Area that are currently inaccessible, could affect cultural resources. These effects would vary by alternative as follows:

- Alternative 1, the No Action/No Project Alternative, would not accommodate or support additional visitors to the Plan Area. The continuation of existing visitor uses could have minor adverse to adverse effects on cultural resources.
- Alternative 2 has some potential to increase visitation by allowing for improvements or additions to campgrounds and day use facilities. Recorded prehistoric or historic resources are not known to exist in most areas where improvements or additions are proposed, although no final conclusions can be reached about the level of impact to cultural resources until project footprints are identified and an appropriate level of archaeological survey is conducted. The addition of 30 tent sites at Los Banos Creek Use Area included in Alternative 2 and the other action alternatives could expose two prehistoric housepit sites (CA-Mer-36 and CA-Mer-37) to increased unauthorized collection and other forms of disturbance. These sites are inundated at least part of the year. By including an appropriate level of archaeological survey, development of a cultural resources management plan, and appropriate measures from Section 5.4.4.4, adverse impacts from Alternative 2 would be avoided, although minor impacts could remain. Alternative 2 would have a slightly greater potential for unauthorized collection or vandalism of cultural resources than would Alternative 1, but less than from Alternatives 3 and 4.
- Alternative 3 proposes a greater number of features and facilities in the Plan Area that would accommodate or support increased visitor use than does Alternative 2. Most would be in areas with no recorded prehistoric or historic resources, although no final conclusions can be reached about the level of impact to cultural resources until project footprints are identified and an appropriate level of archaeological survey is conducted. This alternative would have the same potential impacts listed for Alternative 2. In addition, the proposed multi-use trail linking Basalt Use Area with Pacheco State Park could expose eight documented prehistoric sites (Table 5-3) to new visitation and potential unauthorized collection or vandalism. Four of the sites are particularly sensitive, as they are typically above the high-water line of San Luis Reservoir. In addition, trail use has the potential to affect undocumented historic resources related to the original site of Rancho San Luis Gonzaga. The original land-grant period ranch and the Pacheco Adobe were in an area now under the reservoir and dam, but related structure remains and features could still be present. Although not formally surveyed or recorded, the Rancho San Luis Gonzaga site could constitute a significant cultural resource, and any related facility remains or features disturbed by visitation or other Plan Area activities would constitute a significant impact.

Alternative 3 would have a slightly greater potential for unauthorized collection or vandalism of cultural resources than the other alternatives. As with Alternative 2, by including an appropriate level of archaeological survey, development of a cultural resources management plan, and appropriate measures from Section 5.4.4.4, adverse impacts from Alternative 3 would be avoided, although minor impacts could remain.

**Table 5-3**
**Documented Cultural Resource Sites at San Luis Reservoir Potentially Affected by Alternative 3: Basalt Use Area to Pacheco State Park Trail (listed North to South)**

| Site Number | Site Type | Comment |
|---|---|---|
| CA-Mer-83 | Prehistoric - midden | Above high water line |
| CA-Mer-138 | Prehistoric - midden | Above high water line |
| CA-Mer-42 | Prehistoric – midden | May be inundated part of year |
| CA-Mer-82 | Prehistoric – midden | May be inundated part of year |
| CA-Mer-41 | Prehistoric – midden | May be inundated part of year |
| CA-Mer-139 | Prehistoric – midden | Above high water line |
| CA-Mer-32 | Prehistoric/historic | Above high water line |
| CA-Mer-31 | Prehistoric - midden | May be inundated part of year |

- Alternative 4 would have generally the same potential impacts as those listed for Alternative 3, except that it would include the following additional actions:
  - The southernmost extent of a proposed trail from Los Banos Creek Use Area to Basalt Use Area could affect two prehistoric sites (CA-Mer-97 and CA-Mer-98) along the northern shore of the reservoir, as well as undocumented cultural resources over a large unsurveyed area. Although both sites are below the high water line during part of the year, such a trail would result in higher levels of visitation to the area.
  - A new exit off of I-5 at Canyon Road for access to Los Banos Creek Reservoir that is being considered with this alternative could result in indirect impacts from increased visitation. Roadway access improvements would be developed in coordination with Caltrans and would be subject to detailed environmental review.
  - By including an appropriate level of archaeological survey, development of a cultural resources management plan, and appropriate measures from Section 5.4.4.4, adverse impacts from Alternative 4 would be avoided, although minor impacts could remain.

**Ground-Disturbing Activities** Other than the trails and features described above in “Unauthorized Collection and Vandalism,” construction of the majority of facilities proposed in the action alternatives would take place in existing developed areas that are likely to have low potential for cultural resource impacts. (No final conclusions can be reached about the level of impact to cultural resources until project footprints are identified and an appropriate level of

archaeological survey is conducted.) The effects of ground-disturbing activities on cultural resources would vary from minor adverse to adverse by alternative based on the degree of new facility development proposed, with the greatest potential for disturbance associated with Alternatives 3 and 4.

The action alternatives include an appropriate level of archaeological survey, development of a cultural resources management plan, and appropriate measures from Section 5.4.4.4 that would reduce potential adverse impacts to minor.

**Prescribed Burns and Vegetation Management** Prescribed burns are not conducted regularly in the Plan Area and are included in the action alternatives in certain BC Zones to reduce the threat for wildland fire. Weed eradication (mowing, weed whacking and native plant restoration) and selective use of herbicides on invasive species are ongoing and would continue with all Plan alternatives. These activities have a potential to affect both documented and undocumented archaeological and historic resources through exposure, which could subject the resources to vandalism or unauthorized collection, or inadvertent disturbance or destruction. These effects would vary by alternative as follows:

- Alternative 1, No Action/No Project, would not plan for or include prescribed burns. Weed eradication would continue. The continuation of existing vegetation management practices could have minor adverse to adverse effects on cultural resources.
- Alternatives 2, 3, and 4 would allow for prescribed burns in the BC Zones of Basalt and Los Banos Creek use areas. Vegetation management practices would continue in accordance with the vegetation management statement that would be included for the action alternatives. The cultural resources management plan that would be implemented under the action alternatives will identify known cultural resources sites in areas where prescribed burns and vegetation management activities will take place and include BMPs for cultural resource protection. Additional measures such as those described in Section 5.4.4.4 would minimize adverse impacts; however, minor adverse residual impacts could remain.

**Climate Change** Climate change could decrease precipitation and increase temperatures in the Plan Area (Section 2.2.2), which could result in drier vegetation that is more susceptible to wildfires. Climate change would not directly affect cultural resources in the Plan Area; however, a fire that is triggered by the dry vegetation could result in the exposure or disturbance/destruction of a cultural resource site. This condition would occur regardless of which alternative is implemented, including No Action/No Project. Plan implementation would have no impact on exposure or destruction of cultural resources from climate change.

#### *5.4.4.4 Mitigation*

The following measures would be considered and applied as necessary for all of the action alternatives during project construction and implementation.

**Goal RES-H1** Goal RES-H1 and associated guidelines require that efforts be made to minimize impacts on cultural resources when future facilities are sited. With proper precautions, proposed facilities could be sited and constructed in a way that would not result in substantial impacts on existing known and unrecorded resources.

**Mitigation CUL1** In addition to the Plan goals and guidelines, the following measures would be considered and applied as necessary for all of the action alternatives during project construction to avoid or minimize adverse impacts.

- Prior to any specific proposed undertaking that would have the potential to affect cultural resources, a cultural resources inventory will be conducted for the areas of potential effects by qualified personnel who meet the Secretary of the Interior's professional qualification standards (36 CFR Part 61). This effort may be in conjunction with consultation with members of the local Native American community and consultation with other interested members of the public as appropriate. This inventory would identify the known cultural resources that would be affected by a proposed project. The cultural resources would then be evaluated for their eligibility for the NRHP or CRHR. If the affected resource is not significant (does not qualify as an historic property, historic resource, or unique archaeological resource), then no mitigation would be required and the impact would be considered minor. If the affected resource qualifies as an historic property, historic resource, or unique archaeological resource and the impacts can be mitigated (treated) through the Section 106 process and CEQA, there would be no residual impact (i.e., considered less than significant under CEQA). If the resource cannot be mitigated through the Section 106 process, Reclamation may still be able to conclude the Section 106 Process as described in 36 CFR Part 800.7 (Failure to resolve adverse effects) of the Section 106 implementing regulations. Reclamation may also elect to reconsider the action to the affected resource, seek measures to resolve adverse impacts outside the Section 106 process, or implement the project upon conclusion of the Section 106 process.
- In the event a significant cultural resource, as defined by the NRHP and CRHR criteria, is identified and has the potential to be adversely affected, appropriate measures will be taken to avoid the resource. In the event the resource cannot be avoided, measures such as data recovery, further study, enhanced recordation, interpretation, physical protection, or some combination of these measures will be implemented. With implementation of these measures, residual minor impacts would likely result in a finding of no adverse effect or no significant impact.

**Mitigation CUL2** Prescribed burn areas and areas where weed eradication and pest management would take place shall be monitored and/or surveyed as appropriate for early detection and evaluation, if required, of previously unknown cultural resources. The cultural resources management plan should be implemented for known cultural resources sites that qualify as historic properties

and will be exposed to prescribed burns and vegetation management. Burning, mowing and weed whacking, and pest eradication activities should occur seasonally in the known prescribed burn areas. Residual impacts would be minor. With implementation of these measures, residual minor impacts would likely result in a finding of no adverse effect.

### 5.4.5 Scenic/Aesthetics

As described in Section 2.8, the Plan Area offers scenic qualities including expansive vistas of rolling terrain and open water. In addition, SR 152 in the Plan Area is a county- and state-designated scenic highway. Built structures and operational facilities remind visitors of the Plan Area's purpose of water storage and distribution. The expansion of existing facilities and construction of new facilities in the Plan Area could have the potential to reduce these scenic qualities. The Plan includes scenic/aesthetic goals and guidelines to reduce or avoid impacts to these resources.

#### *5.4.5.1 Impact Summary*

The following mechanism has the potential to affect scenic resources and aesthetics in the Plan Area:

- Facilities expansion and construction.
- Climate change

#### *5.4.5.2 Impact Criteria (Scenic/Aesthetics)*

- Beneficial Impact: Impact that would occur if the visual quality or the visual character of an existing viewshed improved as a result of a specific Plan element or group of elements, or if a new viewshed was created. There is no CEQA equivalent to a NEPA beneficial impact.
- No Impact: No detectable change in the quality or visual character of a viewshed.
- Minor Adverse Impact: Impact that would occur if a specific element or group of elements results in a decrease in the visual quality or visual character of a viewshed. This impact would be minimal or temporary, but detectable. A minor adverse impact is equivalent to a less-than-significant impact under CEQA.
- Major Adverse Impact: Impact that would occur if a specific element or group of elements results in a permanent, highly noticeable, and substantial decrease in the visual quality or visual character of a viewshed. A major adverse impact is equivalent to a significant impact under CEQA and would result from one or more of the following:
  - A substantial adverse effect on a scenic vista;
  - Substantial damage to scenic resources, including but not limited to trees, rock outcroppings, and historic buildings;
  - Substantial degradation of the existing visual character or quality of the site and its surroundings; or
  - Creation of a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

#### 5.4.5.3 Environmental Evaluation

**Facilities Expansion and Construction** The action alternatives would allow for the development of additional visitor facilities including day-use, camping, shoreline and water surface facilities, maintenance, and staff facilities in the Plan Area. The additional development of current use areas (with more facilities or a change in size of existing facilities) could affect the Plan Area's existing scenic quality and character by reducing scenic vistas and open landscape character or damaging scenic resources. In addition, new facilities have the potential to create new sources of light or glare, which could affect day or nighttime views in the area. Effects to scenic resources and aesthetics would vary by alternative as follows:

- Alternative 1, the No Action/No Project Alternative, would not involve expansion of existing facilities or construction of new facilities. Alternative 1 would have no impact to scenic resources or aesthetics.
- Alternative 2 would include the fewest physical additions and visitor use modifications of the action alternatives. Constructing a multipurpose building for group events and interpretive programs at San Luis Creek Use Area and expanding existing campgrounds at San Luis Creek, Los Banos Creek, and Basalt use areas could have minor adverse impacts to scenic resources, including new sources of light and glare. These facilities are not anticipated to affect views from SR 152, a designated scenic highway. Goals RES-S1 and RES-S5 and their associated guidelines (Section 4.2.1.1) would reduce visual impacts from new or expanded facilities, although minor adverse impacts could remain.
- Alternative 3 would allow for several additional features and facilities that have the potential to affect scenic resources and aesthetics. This alternative would allow for larger expansions of campgrounds than Alternative 2 (including 30 new tent sites at Dinosaur Point and up to 20 tent/RV sites on the South Shore of Los Banos Creek Reservoir); expansion of the boat launch at San Luis Creek Use Area; and construction of a ranger station, staff housing, and maintenance facilities at Los Banos Creek Use Area. At the OHV Use Area, Alternative 3 would provide for the addition of six primitive campsites, minor additions to existing facilities such as shade ramadas, and potential future expansion of the area if new property becomes available. Expansion of the OHV Use Area would involve the construction and use of unpaved OHV trails on adjacent undeveloped lands. The majority of the proposed development under Alternative 3 would be in FC zones, where existing facilities are concentrated. Nonetheless, these actions would have minor adverse impacts to scenic resources and aesthetics, including new sources of light and glare; minor changes in the Plan Area viewshed from SR 152, a designated scenic highway; and increased visibility of human-made features and reminders of human presence in a primarily undeveloped environment, both from land and water. Goals RES-S1 and RES-S5 and their associated guidelines would reduce visual impacts from new or expanded facilities, although minor adverse impacts could remain.

- Alternative 4 would allow for the same features and facilities proposed for Alternative 3 but would accommodate more overnight and day use, as well as other facilities that have the potential to affect scenic resources and aesthetics. Alternative 4 would allow for expansion of boat launches at the San Luis Creek and Dinosaur Point use areas; and construction of marinas at Dinosaur Point and San Luis Creek use areas. At Medeiros Use Area, this alternative includes construction of a wayside campground in an undeveloped area near the entrance station as well as a motel and restaurant in coordination with a long-term concessionaire. At the OHV Use Area, Alternative 4 would allow for potential reconfiguration of the OHV Use Area to include a professional motocross track. Addition of a professional motocross track at the OHV Use Area could involve placement of fill or ramp structures to make the existing flat terrain more hilly. In general, the majority of the proposed development under Alternative 4 would be in FC and AO zones, where existing facilities are concentrated. Nonetheless, these actions would have minor adverse impacts to scenic resources and aesthetics, including new sources of light and glare; minor changes in the Plan Area viewshed from SR 152, a designated scenic highway; and increased visibility of human-made features and reminders of human presence in a primarily undeveloped environment, both from land and water. Goals RES-S1 and RES-S5 and their associated guidelines would reduce visual impacts from new or expanded facilities, although minor adverse impacts could remain.

**Climate Change** Climate change could reduce precipitation and increase temperatures in the Plan Area (Section 2.2.2), which could result in a reduction of vegetation or drier vegetation. In addition, climate change could increase the frequency of low water levels in San Luis Reservoir (Section 5.4.1.3, under Climate Change). A drier or less vegetated environment or a regularly lower reservoir could adversely affect the scenic quality of the Plan Area. These conditions would occur regardless of which alternative is implemented, including No Action/No Project. Plan implementation would have no impact on decreased aesthetic quality from climate change.

#### *5.4.5.4 Mitigation*

The following measures would be considered and applied as necessary for all of the action alternatives during project construction and implementation.

**Goals RES-S1 through RES-S5** Goals RES-S1 through RES-S5 and their associated guidelines (Section 4.2.1.1) would minimize or avoid potential impacts on scenic resources and aesthetics from facilities expansion and construction and installation of additional lighting. The visual assessments and careful siting of new structures within viewsheds would preserve scenic vistas, maintain large expanses of open space, and use design and materials in keeping with the character of the Plan Area. Goal RES-S5 would minimize the intensity of additional lighting and consider techniques to reduce light pollution. In addition,

specific mitigation measures will be developed and implemented on a project-by-project basis, if mitigation is necessary.

## 5.4.6 Recreation

### *5.4.6.1 Impact Summary*

The following mechanisms have the potential to affect recreation in the Plan Area:

- Temporary construction activities at camping and recreation facilities
- Addition of new recreation activities and facilities
- Management of boat density levels
- Climate change

### *5.4.6.2 Impact Criteria (Recreation)*

- Beneficial Impact: The impact of the action is positive. There is no CEQA equivalent to a NEPA beneficial impact.
- No Impact: The impact is at the lower level of detection; there would be no measurable change.
- Minor Adverse Impact: The impact is slightly adverse, but detectable; there would be a small change. This impact category is equivalent to a less-than-significant impact under CEQA.
- Major Adverse Impact: The impact is adverse and severe; there would be a highly noticeable, long-term or permanent measurable change. A major adverse impact on recreation would indicate a marked decline in the quality or quantity of opportunities to participate in a recreation activity as a result of implementing an alternative. Therefore, to determine whether an impact is major, this discussion considers the effect of an alternative on recreational facilities, the setting and physical resources, and use density. A major adverse impact is also equivalent to a CEQA significant impact, which would result from the following:[11]
    - Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

### *5.4.6.3 Environmental Evaluation*

Visitors to the Plan Area participate in a wide variety of activities. Popular water-based recreation includes fishing, boating, windsurfing, swimming, water skiing, and personal watercraft use. Camping, hiking, picnicking, horseback riding, seasonal hunting, and wildlife viewing are also common. Under each of the alternatives described in Section 4.4, opportunities for recreationists to engage in any or all of these activities depend on: 1) the availability of appropriate facilities

[11] CEQA also identifies the following as an impact criterion for recreation: “Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?” This question as it pertains to other environmental resource areas is analyzed throughout Chapter 5 of this document.

and resources, 2) the quality of these resources and settings, and 3) the density of recreational use. Recreation goals and preferences will vary and may even conflict among users, and Plan Area managers will have to make decisions that guide recreational uses. Management actions for each alternative are intended as broad guidelines and may be altered based on actual usage. For example, management actions may be adjusted during holiday and high-use summer weekends when visitation is high. Management actions will influence visitor perceptions of the quality of the recreation experience.

As described in Section 4.3, management zones were assigned to the Plan Area for each alternative, based on projections for types of use, management actions, and physical and social settings. For recreational resources, these zones serve as a guide to understanding the types and locations of the opportunities that make up the spectrum of recreation intensity (RN, RD, and S for water-based management and BC and FC for land-based management; Administration and Operations is not, by nature, a recreation zone). The attributes that differentiate these management zones have implications on the recreational opportunities and benefits that recreationists may experience.

Under all alternatives, applicable federal and state regulations would be followed, and appropriate actions to ensure compliance would be taken. The existing recreational facilities will be upgraded as necessary to comply with applicable laws and regulations, such as ADA. At a minimum, existing facilities that are currently in compliance with governing laws and regulations will continue to be maintained under all alternatives, and no adverse impacts to recreation would occur as a result. Regular maintenance will preserve the quality of the facilities, which would have a beneficial impact for users. Continued use of recreational facilities would not result in substantial physical deterioration of those facilities. Seasonal events and activities would continue to be accommodated and are not anticipated to result in recreation impacts.

Speed limits and no-ski zones in controlled areas of San Luis Reservoir, O'Neill Forebay, and Los Banos Creek Reservoir will be continued regardless of the alternative selected, enhancing safety for recreation users such as swimmers who may be sharing the lake with boaters. These restrictions would also have other beneficial impacts that could enhance the recreational experience of swimmers and shoreline campers such as by reducing noise levels, depending on the relative location and speed of watercraft. Enforcing restrictions would have minor adverse impacts on some recreational users.

Plan implementation could result in effects to recreation from the following mechanisms.

**Temporary Construction Activities at Camping and Recreation Facilities**
Maintenance, expansion, or addition of camp sites, shade ramadas, boat launches, trails and other recreation facilities could have temporary, minor construction-related impacts such as fugitive dust and noise, disruption to visitor circulation, and restriction to visitor areas. These activities could affect the quality of the

recreation experience for visitors near construction areas. In most cases, construction would take place in FC Zones, where activity rather than quiet and passive recreation is typical (Section 4.3.5). Construction-related effects would be minor under all alternatives, primarily because improvements would be planned to take place during off-peak times. Some minor adverse impacts would remain and would be greater for Alternatives 3 and 4 than for Alternatives 1 and 2.

**Addition of New Recreation Activities and Facilities** Recreational opportunities are determined by the physical infrastructure available to support recreational activities, access to recreational resources, and the services provided in the Plan Area. Over time, the opportunities relative to increasing demand (from regional population growth, for example) will decline without proportionate increases in recreational resources. The quality of visitor experiences may differ based on the user group in question. However, impacts to recreational experiences are determined by the quality of the available resources and settings provided in the Plan Area and the density of recreational use.

Under the No Action/No Project Alternative (Alternative 1), management would basically maintain the status quo. Alternatives 2, 3, and 4 provide for a range of increases in the amount of recreational facilities and services and variation in recreational experiences at the Plan Area, with Alternative 2 representing the lowest increase and Alternative 4 representing the highest increase. At the low end of the range (Alternative 2), the amount of facilities, services, and opportunities allowed under the Plan may be perceived as insufficient by those seeking a more active and varied recreation experience, whereas the same amount may be considered optimum for those seeking a more passive or primitive experience. At the high end of the range (Alternative 4), the Plan would allow for a substantial expansion in recreational facilities, services, and opportunities, which would benefit those seeking a more active and varied recreation experience but could compromise recreational quality for those seeking a more passive or primitive experience. Alternative 3 is intended to balance the quality of recreational experiences with opportunities for various user groups.

The effects of adding new recreation activities and facilities would vary by alternative as follows:

- Alternative 1, No Action/No Project, would not add recreational facilities or activities, and management zones would remain the same throughout the Plan horizon. Basic infrastructure and operational improvements would be implemented to comply with applicable laws and regulations, as under all alternatives, and any increase in demand and visitor use would be accommodated at a minimal level. Alternative 1 would not fully satisfy Goal VIS-F1, which includes providing new visitor facilities and uses that enhance recreational enjoyment of the Plan Area while avoiding resource degradation. Over the course of the Plan horizon, regional population growth could result in demand being exceeded in more locations and more frequently than at present. The likelihood of visitors being turned away or having lower-quality recreational experiences would be higher than with

the other alternatives, and the variety of recreational experiences would not change from current conditions. Periodic minor adverse impacts could occur.

- Alternative 2 emphasizes expansion of, or minor additions to, existing recreational facilities and activities, such as reconfiguring the camping area and upgrading the campfire center at Basalt Use Area; expanding the group picnic facilities at San Luis Creek Use Area; reopening or relocating the boat launch at Medeiros Use Area; and providing for additional interpretive programs throughout the Plan Area. Although Alternative 2 would maintain the same management zones as Alternative 1, it would accommodate additional/future demand and visitor use to a greater degree than Alternative 1 and would satisfy Goal VIS-F1. The increase in the variety of recreational experiences would be less than for Alternatives 3 and 4. No impacts to the quality of visitor experiences are expected to occur.
- Alternative 3 would modify some existing management zone designations to provide for a moderate level of additional recreational facilities and activities. Campsites would be added in Basalt, San Luis Creek, Medeiros, and Los Banos Creek use areas, and the variety of camping opportunities would be increased (by adding hookups to some sites and providing alternative overnight lodging such as camping and yurts, for example). Campsites would also be added at the OHV Use Area and Dinosaur Point (where none currently exist). Alternative 3 would provide new trails and trailside facilities that would accommodate a greater variety of recreational opportunities and would provide greater compliance with Goals VIS-F1, VIS-T1, and VIS-T3 than Alternatives 1 and 2. Because Alternative 3 would allow for additional facilities, particularly in use areas such as San Luis Creek and Los Banos Creek where capacity is exceeded several days each year, this alternative would also accommodate a greater increase in visitor use over the Plan horizon, in accordance with Goal VIS-F2. The management zone designations concentrate the majority of additional facilities and uses in areas of high visitor use, which would preserve recreational quality for visitors who prefer a passive or primitive experience. Finally, all of the action alternatives include developing and implementing a new boating management plan and a trails management plan. The plans would help to minimize potential conflicts that could result from differences in visitor use (such as between anglers and personal watercraft users, or equestrians and bicyclists). These factors comprise a beneficial impact.
- Alternative 4 would modify several existing management zone designations to provide for a maximum level of additional recreational facilities and activities. Campsites and day use facilities would be added in generally the same locations as proposed for Alternative 3; however, the visitor capacity of those facilities would be greater than with Alternative 3. In some cases (such as the proposed group picnic facilities at San Luis Creek Use Area), the size and capacity of the facilities may result in a

visitor density that compromises the quality of the recreational experience for some. Overnight and day use facilities would also be allowed in areas where they currently do not exist (such as the campgrounds at Golden Eye and La Plata, and a motel at Medeiros Use Area), and new activities and services could be offered (such as tours of Basalt quarry, a trail between Los Banos Creek and Basalt use areas, and a concession at Dinosaur Point). Like Alternative 3, Alternative 4 would comply with Goals VIS-F1, VIS-T1, and VIS-T3. However, the expansion in recreational facilities and activities could increase the potential for conflicts among users, which would constitute a minor adverse impact and would be less consistent with Goal VIS-F3. As some impacts to the quality of visitor experiences are expected even with implementation of the boating and trails management plans, minor adverse impacts could remain.

**Management of Boat Density Levels** As described in Sections 4.3.1 through 4.3.3, each WROS zone is associated with a range of acceptable boats per acre. The range is designed to be consistent with the recreation purpose and intent for each zone. In the Plan Area, the highest numbers of boats per acre are allowed in S Zones, consistent with the active nature of water recreation in that zone; the lowest numbers are allowed in the RN Zone, consistent with the primitive nature of water recreation in that zone.

In order to maintain the quality and character of the proposed WROS zones for each of the alternatives (shown in Maps 8 through 11), Plan Area managers will need to establish measures to ensure that the target ranges of boats for the WROS zones are not regularly exceeded. When boat density exceeds the target range, the quality of the recreation experience may be compromised for some water recreation users.

Effects would vary by alternative as follows:

- With Alternative 1, No Action/No Project, no formal system would be in place to manage boat densities; the ability to enter and launch at any Plan Area water body would be limited only by the availability of boat trailer parking. Although management zones for Alternative 1 are shown in Map 8, the proposed Plan would not be implemented, no Plan measures would be applied to manage those zones, and the March 1972 Boating Plan for San Luis Reservoir State Recreation Area and other guidance set forth in previous planning documents described in Section 3.1 would essentially remain in effect. The 1972 Boating Plan would allow for a substantially higher boat density than that associated with the WROS zones for existing conditions and Alternative 1 (Map 8). The 1972 Boating Plan set thresholds of 2.5 acres per boat in 5 mph speed zone areas and 7 acres per boat in all other areas. (The 1966 Recreation Development Plan for Los Banos Creek Reservoir did not specify any target metrics for boat density.) The target boat densities with the proposed Plan range from 10 to 20 acres per boat for S Zones (on the high end) to 50 to 110 acres per boat for RN Zones (on the low end). Under Alternative 1, no thresholds would be in

place to manage water surfaces to accommodate a variety of different user groups and minimize conflicts among users; consequently, Goal VIS-F3 (Visitor Uses/Opportunities and Facilities) would not be satisfied. High boat densities currently occur during peak use periods and can be expected to occur more frequently in the future from increased visitation related to regional population growth. This could reduce recreation quality for some visitors and increase potential boating safety concerns. Minor to major adverse impacts could occur.

- Alternatives 2 and 3 would not change WROS classes in any Plan Area waterbody (Maps 9 and 10); as a result, the target boat ranges associated with the WROS zones shown in Map 8 for existing conditions and Alternative 1 would not increase. However, the action alternatives provide for development and implementation of a boating management plan that would identify boat densities that are compatible with the different WROS designations. Setting density thresholds is consistent with Goal VIS-F3 (Visitor Uses/Opportunities and Facilities) to manage water surfaces to accommodate a variety of different user groups and minimize conflicts among users. The total number of boats allowed daily could be managed by limiting the number of launches to the number of boat trailer parking spaces available, instituting a reservation system, monitoring, or other methods. Management personnel would have the flexibility to allow boat numbers to exceed maximum densities on holidays or high-use weekends if safety requirements are met. The boating management plan may consider data points such as accidents, violations, and historic data. The plan would be reviewed periodically to assess whether updates are necessary as a result of changes to boat types or boating areas. Implementation of the boating management plan would help to prevent adverse impacts associated with high boat densities and reduced recreation quality. During peak use periods, there is a potential that visitors may be turned away from their preferred boat launch site and encouraged to launch elsewhere (for example, when Los Banos Creek Reservoir is at maximum allowed capacity but capacity is available at Dinosaur Point). This could result in a minor residual impact.
- Alternative 4 would change WROS designations as shown in Map 11. As a result, this alternative would allow for increases in boat density in the southern part of San Luis Reservoir (from 50–110 acres per boat with the other alternatives to 20–50 acres per boat with Alternative 4) and the eastern part of O'Neill Forebay (from 20–50 acres per boat with the other alternatives to 10–20 acres per boat with Alternative 4). As with Alternatives 2 and 3, Alternative 4 would provide for development and implementation of a boating management plan, which is consistent with Goal VIS-F3 and would help to prevent adverse impacts associated with high boat densities and reduced recreation quality. Because the allowable maximum number of boats per acre would be higher than with Alternatives 2 and 3, boating demand could be met more frequently during high-use periods than with Alternatives 2 and 3. The higher density could

reduce recreation quality for some visitors. Minor residual impacts could occur and could be greater than with the other action alternatives.

**Climate Change** As described in Sections 2.2.2 and 5.4.1.3, climate change could increase the frequency of low water levels in San Luis Reservoir. Recreation access to the reservoir would be possible regardless of reservoir elevation, but a lower (and thus smaller) reservoir cannot hold as many vessels and recreationists, which may result in restrictions on use. Warmer water temperatures from climate change could also increase the potential for invasive species infestations (Reclamation 2011b). An invasive mussel infestation in the Plan Area would result in restrictions on vessel use for an undetermined period of time. These conditions would occur regardless of which alternative is implemented, including No Action/No Project. Plan implementation would have no impact on recreation access restrictions due to low reservoir levels or invasive mussel infestations that result from climate change.

Potential climate change effects (in terms of GHG emissions) from Plan-related motorized vehicle and vessel use are described in Section 5.4.2.3, under Greenhouse Gas Emissions and Climate Change. Nonmotorized vehicle and vessel use and other forms of recreation are not expected to contribute to climate change.

## 5.4.7 Circulation

### *5.4.7.1 Impact Summary*

The following mechanisms have the potential to affect circulation in the Plan Area:

- Increased traffic to, from, and within the Plan Area
- Vehicle turning conflicts and other access issues at Plan Area access points
- Increased parking demand
- Climate change

### *5.4.7.2 Impact Criteria (Transportation)*

- Beneficial Impact: Impact that would occur if visitor access to and circulation within the Plan Area is improved. An activity would be considered a beneficial impact if it improves conditions beyond the No Action/No Project Alternative. There is no CEQA equivalent to a NEPA beneficial impact.
- No Impact: Impact that would occur if planning elements result in no changes over the existing conditions.
- Minor Adverse Impact: Impact that would occur if a Plan element leads to a decrease in visitor access or circulation within the Plan Area. This impact would be minimal or temporary, but detectable. This impact category is equivalent to a less-than-significant impact under CEQA.
- Major Adverse Impact: Impact that would occur if a Plan element results in a considerable decrease in visitor access or circulation within the Plan

Area. This type of impact would often be long term, highly noticeable, and substantial. A major adverse impact is equivalent to a CEQA significant impact, which would result from one or more of the following:

- Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel, and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit;
- Conflict with an applicable congestion management program, including but not limited to LOS standards and travel demand measures established by the county congestion management agency for designated roads or highways;
- A change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks;
- Substantially increased hazards caused by a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
- Inadequate emergency access; or
- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

#### *5.4.7.3 Environmental Evaluation*

**Increased Traffic to, from, and within the Plan Area** Traffic on SR 152 currently exceeds capacity during peak hours, and additional development has been approved in the region that would further increase automobile and truck traffic along SR 152. Regional planning documents include the future widening and partial rerouting of SR 152 to accommodate the increase in traffic volumes and maintain an acceptable level of service (Sections 3.3.9 through 3.3.11). Projected increases in local and regional population (Section 2.12.2.1) will result in additional traffic on roadways in the Plan Area vicinity. Traffic congestion may reduce circulation along the Plan Area's roadway network and increase driving time for visitors to access various parts of the Plan Area. These effects will occur regardless of alternative or Plan implementation.

The action alternatives could increase visitation by providing for the development of additional facilities and uses. Increased visitor use could result in an increase in vehicle trips in and near the Plan Area, thereby contributing to traffic congestion on SR 33, SR 152, and other roadways near the Plan Area.

Under all of the alternatives, the Plan Area would remain accessible via bicycle from SR 152, a designated bike route. In addition, the existing Plan Area trail system provides nonmotorized options for traveling within use areas, and additional trails included in the action alternatives would facilitate nonmotorized travel between use areas.

When specific projects are developed, a site-specific environmental analysis would be conducted and a more focused analysis of the proposed project's impacts to circulation could occur. At that time, more clearly defined visitor access and circulation impacts may be identified. If significant visitor access or circulation impacts were to be identified, the proposed project would be modified or mitigation measures would be implemented to reduce these impacts. Effects related to increased visitation would vary by alternative as follows:

- Alternative 1, the No Action/No Project Alternative, would not improve or develop new facilities and features that would accommodate additional visitor traffic to the Plan Area. Alternative 1 would maintain existing trails but would not provide for new trails. This alternative would not affect local traffic or nonmotorized transportation in the Plan Area.
- Alternatives 2, 3, and 4 provide for facilities and features that could support or accommodate additional visitor traffic, although the increase is not expected to be substantial. SR 152 and SR 33 are the primary roadways for which recent Plan Area data are available (see Section 2.10.3.1). The combined average of peak daily trips to the Plan Area in fiscal year (FY) 2007–2008 was 1,167. This total is approximately 5 percent of FY 2007–2008 annual average daily traffic (AADT) on SR 152 and 13 percent of the AADT on SR 33. Even if the number of vehicle trips associated with the Plan Area increased by 50 percent (an increase that is much higher than anticipated), the total number of trips would account for less than 7 percent of the existing combined AADT for SR 152 and SR 33 in the vicinity of the Plan Area. Because the amount of traffic generated by visitor trips to the Plan Area constitutes a small portion of overall traffic in the area, implementation of Alternatives 2, 3, or 4 would have a minor adverse impact on local traffic.
- Alternatives 3 and 4 also provide for new trail development. Alternative 3 would allow for development of a multi-use trail for hiking, cycling, and equestrian use to link Basalt Use Area with Pacheco State Park, as well as trails linking Dinosaur Point to Pacheco State Park and San Luis Wildlife Area. Alternative 4 would allow for development of a multi-use trail from Basalt Use Area to Pacheco State Park and a trail linking Basalt Use Area with Los Banos Creek Use Area. New trail connections would facilitate nonmotorized travel between these locations and could result in a reduction in motor vehicle trips. This would have a beneficial effect on traffic that would not be realized under Alternatives 1 and 2.

**Vehicle Turning Conflicts and Other Access Issues** CSP staff have identified access between SR 152 and the San Luis Creek Use Area and Gonzaga Road facilities as a primary safety concern due to high traffic volumes and limited blending and turning lanes on SR 152. Access between Dinosaur Point Road and SR 152 could be improved by enhanced turning lanes and sight distance, and the General Plan for Pacheco State Park includes proposed improvements to safety and traffic flow at that intersection.

CSP staff must use SR 152 and SR 33 to travel between San Luis Creek and Medeiros use areas, which lengthens staff travel time for patrolling and monitoring. Distance to Los Banos Creek Use Area from the other use areas and the current indirect route requires substantial time for staff coordination of maintenance and operations activities.

SR 152, SR 33, and other project area roadways and their signage are under the jurisdiction of Caltrans or local agencies. Improved signage and roadway blending/ turning lanes could increase safety and efficiency for visitors and staff traveling between major roadways and Plan Area facilities but would not be subject to the Plan. Effects related to turning conflicts and other access issues would vary by alternative as follows:

- Alternative 1, the No Action/No Project Alternative, does not include measures to address turning conflicts, create more efficient access routes, or improve signage. In the absence of planning and coordination on these issues, conditions could worsen with regional traffic growth. Major adverse effects are unlikely to occur because it is expected that the agencies with jurisdiction over nearby signage and roadways would continue to incorporate improvements over time; however, minor adverse impacts could remain.
- Alternative 2 provides for working with Caltrans to identify alterations to existing roadways, including improved turning lanes on SR 152 and SR 33 at Plan Area entry points, improved access between SR 152 and Basalt Use Area, and improved access between SR 152 and San Luis Creek Use Area. Alternative 2 also provides for working with other agencies to improve signage outside of the Plan Area and at entry points. Minor adverse impacts could remain, but the management approach proposed for this alternative could have benefits that would not be realized under Alternative 1.
- Alternatives 3 and 4 include the same measures proposed for Alternative 2 and would also provide for working with Caltrans to explore the potential for an interchange at the San Luis Creek Use Area entry road with a limited access overpass from Gonzaga Road, and a crossing from Gonzaga Road to Medeiros Use Area with a blending lane to SR 152. This would increase safety and efficiency for visitors and staff traveling between these areas. Minor adverse impacts could remain, but the management approach proposed for this alternative could have benefits that would not be realized under Alternatives 1 and 2.
- Alternative 4 would also provide for working with Caltrans to explore the creation of a new exit off of I-5 at Canyon Road for access to Los Banos Creek Reservoir. At present, no direct access from I-5 exists, although it is approximately 2 miles east of the reservoir. Visitors and staff must travel toward Los Banos on SR 152 to Volta Road, turn right on Pioneer Road, turn left on Canyon Road, and turn right into the Plan Area, a distance of approximately 10 miles from SR 152. Impacts from this action would be subject to further environmental review and could range from minor to

major; however, the reduction in travel distance and time in this part of the Plan Area would be a beneficial effect that would not be realized under Alternatives 1, 2, and 3.

**Parking Demand** As described in Section 2.10.4, the Plan Area currently experiences parking shortages only at San Luis Creek and Los Banos Creek use areas during peak visitation periods. Sufficient parking is available at Basalt, Dinosaur Point, and Medeiros use areas and capacity is not exceeded. Increased visitor use, either from regional population growth or from Plan Area improvements introduced by the action alternatives, could contribute to peak use parking shortages in the Plan Area. This effect would vary by alternative as follows:

- Alternative 1, the No Action/No Project Alternative, would not provide improved or new facilities and features that would accommodate additional visitors to the Plan Area. Some increase in visitor attendance could be accommodated as some parking areas do not currently fill to capacity. No adverse impacts are anticipated.
- Alternative 2 proposes some enhanced or new facilities that could accommodate additional visitors, primarily from adding capacity at campgrounds at Basalt, San Luis Creek, and Los Banos Creek use areas. The increase in visitor attendance could be accommodated at Basalt Use Area regardless of improvements to facilities. This alternative could have minor adverse impacts to parking capacity at San Luis Creek and Los Banos Creek use areas.
- Alternative 3 would allow for new and expanded day use and camping facilities that could accommodate a greater number of Plan Area visitors but would not specifically add parking except at Medeiros Use Area. Where RV site capacity is increased, parking is automatically included, such as at Basalt (where the camping area would be reconfigured or sites would be added to allow for larger RVs, and 30 RV campsites would be added) and Medeiros use areas (where up to 100 new tent/RV sites could be added). Alternative 3 would also allow for providing up to 20 tent/RV sites on the South Shore of Los Banos Creek Reservoir, which again would automatically include parking in this constrained area; however, additional parking would need to be identified if up to 30 tent sites were added on the North Shore, as proposed in this alternatives. Other facilities would allow for an increase in day use and overnight use without specifically creating additional parking capacity: at Basalt Use Area, a new group camp could accommodate up to 60 people; at Medeiros, 100 primitive campsites could be accommodated; and at Los Banos Creek, the campground could be expanded by up to 30 tent sites. During nonpeak visitation periods, impacts to parking capacity would be minor. Major short-term impacts that could occur during peak periods such as holiday weekends would be reduced to minor levels through implementation of measures such as those described in Section 5.4.7.4.

- Alternative 4 would have generally similar impacts to parking to Alternative 3, although Alternative 4 would accommodate a greater number of visitors. In addition, WROS designations for Alternative 4 would allow for increases in boat density in the southern part of San Luis Reservoir (from 50–110 acres per boat with the other alternatives to 20–50 acres per boat with Alternative 4) and the eastern part of O'Neill Forebay (from 20–50 acres per boat with the other alternatives to 10–20 acres per boat with Alternative 4), which could result in greater demand for boat trailer parking. As with Alternative 3, impacts to parking capacity would be minor during nonpeak visitation periods. Major short-term impacts that could occur during peak periods such as holiday weekends would be reduced to minor levels through implementation of measures such as those described in Section 5.4.7.4. These effects would be greater with Alternative 4 than any of the other alternatives.

**Climate Change** Potential climate change effects (in terms of GHG emissions) from increased traffic in the Plan Area are described in Section 5.4.2.3, under Greenhouse Gas Emissions and Climate Change. Climate change is not expected to affect circulation or parking in the Plan Area.

#### *5.4.7.4 Mitigation*

The following measures would be considered and applied as necessary for all of the action alternatives during project construction and implementation.

**Goals OPS-A1 through OPS-A4** Implementation of Goals OPS-A1 through OPS-A4 and their associated guidelines would help to address and offset circulation and traffic concerns associated with Plan implementation.

**Mitigation Measure TR1** In addition to the Plan's goals and guidelines, the following measures would be considered and applied as necessary for all of the action alternatives during project construction and implementation, to avoid or minimize impacts.

- As part of the construction management plan for all of the action alternatives, develop a traffic and pathways diversion and circulation plan to ensure that safe and efficient traffic and pedestrian flow is maintained during construction and to protect sensitive resources. This plan will be reviewed by Plan Area resources, operations, and visitor safety staff prior to approval.
- Where necessary, signage will be provided at the entry stations, along the roadways, and at critical intersections noting where construction activities are taking place.
- Where necessary, a visitor communication and protection plan will be developed to ensure that visitors are safely and efficiently routed around construction in the Plan Area. This plan will include means for communicating construction and closure schedules to the public, adequate barriers to keep visitors clear of active construction areas, and clear

signage to direct visitors to open Plan Area destinations during construction. Interpretation for visitors of the activities, value, and effects of ongoing construction projects will be included.
- In areas where parking capacity has the potential to be exceeded, designate overflow parking areas that are large enough to accommodate demand.

### 5.4.8 Utilities and Emergency Services

As described in Section 2.11, utilities in the Plan Area include wastewater facilities, water storage tanks, high-voltage power lines, and propane tanks; and public services include fire protection, security, and medical aid. New or expanded facilities could include additional utility infrastructure and potentially increase demand for utilities and public services. The Plan includes goals and guidelines to reduce or avoid effects to these resources.

#### *5.4.8.1 Impact Summary*

The following mechanisms have the potential to affect utilities and emergency services in the Plan Area:

- Facilities expansion and construction
- Increased demand for emergency services resulting from increased visitation
- Climate change

#### *5.4.8.2 Impact Criteria (Utilities and Emergency Services)*

- Beneficial Impact: Impact that is detectable and that significantly and positively alters historical or desired conditions of the utilities and public services. There is no CEQA equivalent to a NEPA beneficial impact.
- No Impact: Impact to utilities and public services that cannot be detected.
- Minor Adverse Impact: Impact to utilities and public services that is detectable but does not interfere with Plan Area goals. This is equivalent to a CEQA less than significant impact.
- Major Adverse Impact: Impact to utilities and public services that is detectable and negatively alters historical baseline or desired conditions. Major adverse impacts would contribute to the deterioration of safe conditions in the Plan Area, the public's enjoyment of Plan Area, or would interfere with Plan Area goals for providing services. A major adverse impact is equivalent to a CEQA significant impact, which would result from one or more of the following:
  - Exceedance of wastewater treatment requirements of the California Regional Water Quality Control Board;
  - The need for new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
  - The need for new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;

- A lack of sufficient water supplies available to serve the project from existing entitlements and resources;
- A determination by the wastewater treatment provider that serves or may serve the project that it has inadequate capacity to serve the project's demand in addition to the provider's existing commitments;
- An increased demand for police protection and fire and emergency services exceeding existing or planned staffing levels; or
- An increase in response times to calls for police protection and fire and emergency services exceeding existing levels or established performance standards.

#### *5.4.8.3 Environmental Evaluation*

**Facilities Expansion and Construction** Maintenance and safety upgrades to utilities would be required under all alternatives. These upgrades would include wear items on specific utilities, replacement of broken or damaged equipment, and replacement of older equipment that is determined to be unsafe. The replacement of old systems such as leaking water tanks and treatment facilities would have the potential to at least partly offset an increase in visitation and demand from either regional population growth or additional facilities/uses included in the action alternatives. Development of facilities in areas currently without utility service could require additional utility infrastructure and connections, as well as associated service capacity, supply, and maintenance. Project-level analysis would be required to verify existing capacities and to determine the extent of effects from specific development on utility systems in the Plan Area. Effects to utilities would vary by alternative as discussed below.

- Alternative 1, the No Action/No Project Alternative, would not include the construction of any additional features or facilities; therefore, no new or expanded utility infrastructure and connections would be required. Utilities would be upgraded over time to meet current standards, and existing lighting would be maintained and repaired as needed. Alternative 1 would have no effects on utilities related to facilities expansion or construction.
- Alternative 2 would include the fewest physical additions and visitor use modifications of the action alternatives. Like Alternative 1, Alternative 2 would provide for upgrading utilities as needed to meet current standards. Alternative 2 would also including maintaining and repairing existing lighting using energy-efficient fixtures, and adding carbon-reducing features such as solar panels. Alternative 2 could have minor effects related to facilities expansion or construction, which would be reduced by implementation of measures such as those described in Section 5.4.8.4.
- Alternative 3 would include a greater number of features and facilities in the Plan Area than Alternative 2. The addition of RV hookups and other utilities could require new or expanded utility infrastructure and connections. Providing water service at Medeiros Use Area may require a new distribution system but would be limited to new facilities proposed in the immediate vicinity and may use existing infrastructure along SR 33 to

reduce crossing SR 152 and O'Neill Forebay. Potential expansion of the OHV Use Area could require new or expanded water and wastewater treatment facilities. Where new hookups and other electrical connections are proposed for Alternative 3, electric service facilities may need to be expanded or added to accommodate the additional demand. As development is proposed mainly in and around areas already serviced by utility infrastructure, additional capacity for most utilities could be readily available, and the need for extensive new distribution lines and associated maintenance may be reduced. Although Alternative 3 would have a greater potential to affect utilities than Alternatives 1 and 2, Alternative 3 would also upgrade and replace Plan Area utility infrastructure, which could partly offset an increase in demand. Utility upgrades, benefits from carbon-reducing measures such as solar panels, and implementation of measures such as those described in Section 5.4.8.4 would reduce adverse impacts, although minor impacts could remain.

- Alternative 4 proposes more intensive development of certain use areas, including a restaurant and motel at Medeiros Use Area. Potential impacts for Alternative 4 would range from minor to major and would be greater than with Alternative 3. Utility upgrades, benefits from carbon-reducing measures such as solar panels, and implementation measures such as those described in Section 5.4.8.4 would reduce adverse impacts to minor levels.

**Increased Demand for Emergency Services** Projected increases in local and regional population (Section 2.12.2.1) could result in additional demand for recreation at Plan Area facilities. As a result, an increased demand for emergency services could occur under all alternatives. The action alternatives include additional features and facilities that could support increased visitor use in the Plan Area. An increase in visitation beyond that associated with regional population growth could result in a greater need for additional fire protection, security, and medical aid. Project-level analysis of potential impacts on public services would be performed as needed for the action alternatives. Effects to public services would vary by alternative as discussed below.

- Alternative 1, the No Action/No Project Alternative, would not accommodate or support additional visitors to the Plan Area. Additional visitation resulting from population growth would result in the need for additional fire protection, security, and medical aid. This alternative would not provide for exploring ways to increase efficiency of emergency services. This would be a minor to major adverse impact.
- Alternative 2 includes some enhanced or new facilities that could accommodate additional visitors, primarily from adding capacity at campgrounds at Basalt, San Luis Creek, and Los Banos Creek use areas. This could result in an increased need for patrols, as well as the potential need for increased fire and emergency services. Minor adverse impacts could occur, which would be reduced by implementation of measures such as those described in Section 5.4.8.4.

- Alternatives 3 and 4 would allow for more features and facilities in the Plan Area that could accommodate increased visitor use than with Alternative 2. This could result in a greater potential need for patrols and fire and other emergency services than under Alternative 2, and could result in minor to major adverse impacts. Some proposed management actions, such as working with Caltrans to explore an interchange at the San Luis Creek Use Area entry and paving unpaved roads in Medeiros Use could benefit Plan Area staff, Cal Fire, and other emergency response agencies by facilitating access. In addition, Goal OPS-A2 and its guideline allow for exploring the use of private roads if needed for emergency response. These factors would reduce adverse impacts, but minor impacts could remain.

**Climate Change** Plan implementation has the potential to increase water use and demand but not to the extent that energy use from water circulation and treatment would measurably increase GHG emissions. Warmer temperatures associated with climate change (Section 2.2.2) could increase the demand for air conditioning in the Plan Area and therefore increase electricity use and subsequent GHG emissions from power generation. Additional visitation related to Plan implementation could also increase electricity use (and GHG emissions from power generation), but the increase would be minor relative to existing and projected electricity generation in surrounding communities. GHG emissions from generation of water supply and electricity for the Plan Area are expected to be highest for Alternative 4 and lowest for Alternative 1, but would be minor for all alternatives. Goal OPS-RE1 provides for use of carbon-reducing measures that could offset these effects, although minor impacts could remain.

#### *5.4.8.4 Mitigation*

Standard measures would be applied as necessary for actions that involve changes in utility infrastructure or provision of public services. These measures include notification of utilities and emergency response units prior to construction activities; observing standard clearances between sewer mains; and observing guidelines specified in the International Plumbing Code, Building Officials and Code Administration National Plumbing Code, National Electric Code, and the National Fire Protection Code regarding utilities installation and/or abandonment of pipelines.

The following measures would be considered and applied as necessary for all of the action alternatives during project construction and implementation.

**Goal OPS-A2** The Plan Area and surrounding vicinity contains a number of small private or abandoned public roads, some of them unimproved. Goal OPS-A2 and its guideline allow for working with surrounding landowners to clarify the ownership and location of roads and the possibility for Plan Area staff members and entities such as Cal Fire to use the roads if needed for emergency response.

**Goal OPS-U1** Goal OPS-U1 includes two guidelines for continuance of long-term infrastructure function in the Plan Area. They allow for devising a strategic

plan, in collaboration with the Santa Nella County Water District, for providing water distribution systems in use areas such as Medeiros; and assessing utility needs and improvements comprehensively to avoid unnecessary ground disturbance and utility work.

**Goal OPS-RE1** Goal OPS-RE1 allows for incorporating solar and other carbon-reducing measures into Plan Area facilities, improvements, and maintenance and operations.

**Mitigation Measure UPS1** In addition to the Plan goals and guidelines, the following measures would be considered and applied as necessary for all of the action alternatives during project construction and implementation.

- Maintain and use existing utilities infrastructure and facilities, when possible, to minimize impacts from construction of additional facilities.
- Avoid trees and existing buildings and facilities that would be affected during construction of additional utilities infrastructure and facilities, to the degree possible.
- Promptly reconnect utility services that are unexpectedly interrupted by construction activities. In addition, provide advanced notification to residents, concessionaires, and others in the event that utility services will be disrupted.

### 5.4.9 Impact Summary

Table 5-4 provides a summary of environmental consequences for each resource discussed above.

**Table 5-4**
**Impacts Summary**

| Impact | Alternative 1 | Alternative 2 | | Alternative 3 | | Alternative 4 | |
|---|---|---|---|---|---|---|---|
| | Impact Magnitude | Impact Magnitude | Impact After Mit. | Impact Magnitude | Impact After Mit. | Impact Magnitude | Impact After Mit. |
| **HYDROLOGY AND FLOODPLAIN/WATER QUALITY (Section 5.4.1)** | | | | | | | |
| Erosion, siltation, turbidity, pollutant release, or additional runoff from facilities maintenance and construction | Minor | Minor to Major | Minor | Minor to Major | Minor | Minor to Major | Minor |
| Erosion, siltation, turbidity, pollutant release, or additional runoff from trail and road use, maintenance, and construction | Minor | Minor | Minor | Minor | Minor | Minor to Major | Minor |
| Motorized vessel emissions of fuel or other pollutants | Minor | Minor | NA | Minor | NA | Minor | NA |
| Contaminants from human use (including body contact with reservoir water) and waste disposal | Minor | Minor | Minor | Minor | Minor | Minor | Minor |
| Reservoir fluctuations from climate change | No Impact | No Impact | NA | No Impact | NA | No Impact | NA |
| **AIR QUALITY (Section 5.4.2)** | | | | | | | |
| Criteria pollutant emissions from motorized vehicles and vessels | Minor | Minor | NA | Minor | NA | Minor | NA |
| Dust emissions from motorized vehicles, construction, and recreation | Minor | Minor | Minor | Minor | Minor | Minor to Major | Minor |
| Short-term combustion emissions from prescribed burning or wildland fires | Minor | Minor | NA | Minor | NA | Minor | NA |
| Greenhouse gas emissions from maintenance and construction equipment and motorized vehicle and watercraft use | Minor | Minor | NA | Minor | NA | Minor | NA |

**Table 5-4**
**Impacts Summary**

| Impact | Alternative 1 | Alternative 2 | | Alternative 3 | | Alternative 4 | |
|---|---|---|---|---|---|---|---|
| | Impact Magnitude | Impact Magnitude | Impact After Mit. | Impact Magnitude | Impact After Mit. | Impact Magnitude | Impact After Mit. |
| **BIOLOGICAL RESOURCES (Section 5.4.3)** | | | | | | | |
| Loss of or disturbance to trees, sensitive habitat, or special-status species; introduction of invasive species; reduction in habitat quality; or habitat fragmentation related to facility maintenance, expansion, and development | | | | | | | |
| Vegetation and Natural Communities | Minor | Minor | Minor | Minor to Major | Minor | Minor to Major | Minor |
| Wildlife | Minor | Minor | Minor | Minor | Minor | Minor to Major | Minor |
| Reduction in habitat quality caused by human disturbance, including increased presence, noise, and light; disturbance to vegetation that provides habitat for special-status species; or introduction of invasive species, including invasive mussels, related to camping, boat use, and day use | Minor | Minor to Major | Minor | Minor to Major | Minor | Minor to Major | Minor |
| Disturbance of habitat, wildlife, or movement corridors; injury or mortality to individuals by vehicle strikes; or disturbance of native vegetation and potential introduction of non-native or invasive species from trail and road use and construction | | | | | | | |
| Vegetation and Natural Communities | Minor | Minor to Major | Minor | Minor to Major | Minor | Minor to Major | Minor |
| Wildlife | Minor | Minor to Major | Minor | Minor to Major | Minor | Minor to Major | Minor |

**Table 5-4**
**Impacts Summary**

| Impact | Alternative 1 | Alternative 2 | | Alternative 3 | | Alternative 4 | |
|---|---|---|---|---|---|---|---|
| | Impact Magnitude | Impact Magnitude | Impact After Mit. | Impact Magnitude | Impact After Mit. | Impact Magnitude | Impact After Mit. |
| Disturbance to plant or wildlife species from resource management, including prescribed burns | Minor to Major | Minor to Major | Minor | Minor to Major | Minor | Minor to Major | Minor |
| Reduced wetland and species habitat, increased stress on fisheries, and increased potential for invasive species infestations from climate change | No Impact | No Impact | NA | No Impact | NA | No Impact | NA |
| **CULTURAL RESOURCES (Section 5.4.4)** | | | | | | | |
| Unauthorized collection and vandalism at cultural resource sites from visitor access and use | Minor to Major | Minor to Major | Minor | Minor to Major | Minor | Minor to Major | Minor |
| Exposure or inadvertent disturbance/destruction of cultural resources from ground-disturbing activities associated with facility construction or improvements | No Impact | Minor to Major | Minor | Minor to Major | Minor | Minor to Major | Minor |
| Exposure or inadvertent disturbance/destruction of cultural resources from prescribed burns and vegetation management | Minor to Major | Minor to Major | Minor | Minor to Major | Minor | Minor to Major | Minor |
| Exposure or inadvertent disturbance/destruction of cultural resources from climate change | No Impact | No Impact | NA | No Impact | NA | No Impact | NA |
| **SCENIC/AESTHETIC RESOURCES (Section 5.4.5)** | | | | | | | |
| Reduction of scenic vistas, damage to scenic resources, or light or glare from facilities expansion and construction | No Impact | Minor | Minor | Minor | Minor | Minor | Minor |
| Reduction in scenic quality from climate change related loss of vegetation or decrease in reservoir levels | No Impact | No Impact | NA | No Impact | NA | No Impact | NA |

**Table 5-4**
**Impacts Summary**

| Impact | Alternative 1 | Alternative 2 | | Alternative 3 | | Alternative 4 | |
|---|---|---|---|---|---|---|---|
| | Impact Magnitude | Impact Magnitude | Impact After Mit. | Impact Magnitude | Impact After Mit. | Impact Magnitude | Impact After Mit. |
| **RECREATION RESOURCES (Section 5.4.6)** | | | | | | | |
| Fugitive dust and noise, disruption to visitor circulation, and restriction to visitor areas from temporary construction activities at camping and recreation facilities | Minor | Minor | NA | Minor | NA | Minor | NA |
| Addition of new activities and facilities | Minor | No Impact | NA | Beneficial | NA | Minor | NA |
| Reduced recreation quality from management of boat density levels | Minor to Major | Minor | NA | Minor | NA | Minor | NA |
| Recreation access restrictions due to climate change related low reservoir levels or invasive species infestation | No Impact | No Impact | NA | No Impact | NA | No Impact | NA |
| **CIRCULATION (Section 5.4.7)** | | | | | | | |
| Increased traffic to, from, and within the Plan Area | No Impact | Minor | NA | Minor | NA | Minor | NA |
| Vehicle turning conflicts and other access issues at Plan Area access points | No Impact | Minor | NA | Minor | NA | Minor to Major | NA |
| Increased parking demand | No Impact | Minor | NA | Minor to Major | Minor | Minor to Major | Minor |
| **UTILITIES AND EMERGENCY SERVICES (Section 5.4.8)** | | | | | | | |
| Disruption to utility service or emergency services from facilities expansion and construction | No Impact | Minor | Minor | Minor to Major | Minor | Minor to Major | Minor |
| Increased demand for emergency services resulting from increased visitation | Minor to Major | Minor | Minor | Minor to Major | Minor | Minor to Major | Minor |

**Table 5-4**
**Impacts Summary**

| Impact | Alternative 1 | Alternative 2 | | Alternative 3 | | Alternative 4 | |
|---|---|---|---|---|---|---|---|
| | Impact Magnitude | Impact Magnitude | Impact After Mit. | Impact Magnitude | Impact After Mit. | Impact Magnitude | Impact After Mit. |
| GHG emissions from generation of water supply and electricity for Plan Area use | Minor | Minor | Minor | Minor | Minor | Minor | Minor |

Notes:
NA = Not applicable
Impact magnitudes are based on the impact criteria defined for each resource area in Section 5.4.

## 5.5 NEPA/CEQA Environmentally Preferable/Superior Alternative

The CEQ's NEPA regulations require that "the alternative or alternatives which were considered to be environmentally preferable" be identified at the time an agency issues its Record of Decision (40 CFR 1505.2). Environmentally preferable is defined as "the alternative that will promote the national environmental policy as expressed in Section 101 of the NEPA, meaning the alternative that causes the least damage to the biological and physical environment. In addition, it also means the alternative that best protects, preserves, and enhances historic, cultural, and natural resources" (CEQ 1981). The CEQ's NEPA regulations do not require that the alternative be adopted.

Section 101 of the NEPA states that:

> … it is the continuing responsibility of the Federal Government to (1) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations; (2) assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings; (3) attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences; (4) preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity, and variety of individual choice; (5) achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and (6) enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

The CEQA Guidelines (Section 15126.6[a] and [e][2]) require that the analysis of alternatives in an EIR include an identification of the "environmentally superior alternative" among all of those considered. In addition, if the No Project Alternative is identified as environmentally superior alternative, the EIR must also identify the environmentally superior alternative among the other alternatives. Under CEQA, the goal of identifying the environmentally superior alternative is to assist decision-makers in considering project approval. CEQA does not require an agency to select the environmentally superior alternative (State CEQA Guidelines, Sections 15042-15043).

Alternative 1, the No Action/No Project Alternative, would result in the least development but would not implement any of the focused management plans listed in Table 4-1 (boating, vegetation, trails, cultural resources). This alternative would not result in any new impacts, but existing impacts would continue. Alternative 2 would have minimal new development. The development under Alternative 2 would be centered on existing developed areas, and this alternative would not open new areas up to vehicular access. Alternative 2 also would include the development of focused resource management plans for biological resources and limited analysis of cultural resources. Alternative 3 would have the greatest long-range facility development concentrated and clustered in existing

developed areas where feasible. It would develop focused management plans and actions for biological and cultural resources. Alternative 3 would also minimize encroachment into surrounding undeveloped lands with access roads and trails. Alternative 4 would have a moderate-to-high development and would introduce new roadways into currently undeveloped areas and would expand the use of OHVs.

Alternative 1, No Action/No Project, would have the lowest level of development impacts but would not ensure future protection of biological and cultural resources because of its lack of focused management plans and other plan policies. Alternative 3 would be the Environmentally Preferred/Environmentally Superior Alternative because it would comply with Section 101 of the NEPA and minimize potential effects to biological resources, public services, utilities, water quality, traffic, noise, and cultural resources compared with the other action alternatives, and it would include focused management plans and plan policies to protect all resources of the area.

## 5.6 Unavoidable Adverse Impacts

The environmental evaluation in this first-tier programmatic Draft EIS/EIR identified no unavoidable adverse impacts that would result from the Plan. The potential impacts from proposed management actions, given the current baseline, would be avoided, minimized, or mitigated through a combination of appropriate facility siting and other best management practices, implementation of focused management plans, Plan goals and guidelines, and resource-specific measures listed in Section 5.4.

## 5.7 Significant Irreversible and Irretrievable Commitment of Resources and Environmental Impacts

No significant irreversible changes to the natural environment are anticipated from the adoption and implementation of this Plan. Although any facilities development, including structures, roads, and trails, may be considered a long-term commitment of resources, impacts can be reversed through removal of facilities and discontinued use. In areas where impacts have become unacceptable, either from excessive use or from a change in environmental conditions, CSP may consider removal, replacement, or realignment of facilities, such as trails and campsites, or closes areas on a seasonal or temporary basis until conditions can improve.

The construction and operation of facilities may require the use of nonrenewable resources. This impact would be minor because of the limited number of facilities planned for development and the consideration of sustainable practices in site design, construction, maintenance, and operations as proposed in the Plan. Sustainable principles used in design and management emphasize environmental

sensitivity in construction, the use of nontoxic materials and renewable resources, resource conservation, recycling, and energy efficiency.

In addition, many cultural resources are considered unique and nonrenewable. Destruction of any significant cultural resource may be considered a significant, irreversible effect. To avoid this impact, proposed development sites will be surveyed for cultural resources, all site and facilities designs will incorporate methods for protecting and preserving significant cultural resources, and human activities will be monitored as necessary to protect cultural resources.

The loss of special-status plants and animals also could be a significant, irreversible impact. To avoid such impacts, proposed development sites will be surveyed for biological resources, all sites and facility designs will incorporate methods for protecting and preserving significant biological resources, and human activities will be monitored to ensure protection of biological resources.

## 5.8 Growth-Inducing Impacts

An EIS/EIR must include a discussion of the ways in which a proposed project could foster economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment (State CEQA Guidelines [Title 14 CCR, Section 15126.2[d]] and NEPA [40 CFR 1508.8[b]]). Projects that would remove obstacles to population growth, such as an expansion of a wastewater treatment plant, are also considered when discussing growth inducement. Increases in population may also tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects.

Implementation of the Plan could result in an increase in visitation to the Plan Area. The Plan includes a recommendation for new visitor facilities, thereby increasing visitor capacity. Providing increased awareness of the Plan Area through improved signage and other infrastructure improvements could attract more visitors. Improving trail connections between the Plan Area and adjacent and nearby public lands may contribute to the potential for increased overnight use in areas of the SRA that currently lack these opportunities.

The increased capacity may increase the need for additional permanent and seasonal staff at the SRA. The Plan also includes a recommendation for consideration of additional seasonal staff housing and improvements to existing staff housing. These proposals would result in a minimal, direct population growth impact on the area. Improvements to the Plan Area's utilities, including future water supply and sanitary systems, will be self-contained for Plan Area use only and would not encourage population growth in the surrounding area.

Increased visitation to the Plan Area may create additional tourism and the need for tourist services in the adjacent communities and surrounding region. The Plan could potentially foster economic growth in the region by encouraging an increase

in supporting recreation and tourist services, such as recreation equipment, supplies, food, and related facilities.

Although population growth in the state and region will continue to create an increased use and demand for recreational opportunities in the Plan Area, increased use and demand will not have permanent, irreversible impacts in the region.

## 5.9 Cumulative Impacts

### 5.9.1 Introduction

"Cumulative impacts" refers to two or more individual effects that may be significant when considered together or that compound or increase other environmental impacts. The individual effects may be changes resulting from a single project or a number of separate projects. The cumulative impact of several projects is the change in the environment that results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time (State CEQA Guidelines: CCR Section 15355). CEQ/NEPA regulations (40 CFR 1508.27[b]) also require discussion of actions with individually insignificant but cumulatively significant impacts.

Large-scale transportation projects and other actions requiring federal approval are subject to laws and permit processes requiring consideration of and mitigation for impacts to publicly owned parkland, cultural resources, water quality, wetlands and waters of the U.S., and special-status species and their habitats. These laws and requirements are designed to assure that the impacts of such undertakings are fully mitigated and do not contribute to cumulative impacts.

Some types of local development projects are not subject to the same types of laws and permit requirements as federal actions. New development that may occur during the planning horizon is planned in Santa Nella, Los Banos, and Gustine and on surrounding ranch properties near the Plan Area. These developments include residential subdivisions and commercial uses. To the extent that impacts would occur in the region due to these activities or others, any loss, disturbance, or degradation of the resources resulting from the Plan would contribute to cumulative impacts.

Some future projects that are proposed in or near the Plan Area have the potential to contribute to cumulative impacts, including the B.F. Sisk (San Luis) Dam Safety of Dams Project (Section 3.3.9), the San Luis Reservoir Low Point Improvement Project (Section 3.3.8), and the San Luis Renewable Resource Project (Section 3.3.15.1). As each project is still in the planning stages, neither project-specific potential environmental impacts nor cumulative impacts can be identified. Descriptions of the projects and proposed alternatives (if known) are provided in Chapter 3. When these proposed projects are advanced for

environmental review, their cumulative impacts, including those to the Plan Area, will have to be considered in their respective environmental documents.

Resources for which cumulative impacts could occur, either from the San Luis Reservoir RMP/GP alone or in combination with other projects, are discussed below.

## 5.9.2 Air Quality

### *5.9.2.1 Criteria Pollutants*

Air quality in the Plan Area and Merced County will be affected by ongoing and future development activities, which will result in increased vehicle miles traveled (VMTs). The combined average of peak daily trips to the Plan Area in fiscal year (FY) 2007-2008 was 1,167 (Table 2-24). Even if the number of vehicle trips associated with the Plan Area increased by 50 percent, the total number of trips would account for less than 7 percent of the combined AADT for SR 152 and SR 33 in the project vicinity (Section 5.4.2.3). When the potential increase in VMTs is considered cumulatively, an increase in vehicle trips to and within the Plan Area could have a minor effect on air quality because the area is already in nonattainment of federal ozone and $PM_{2.5}$ standards and state ozone, $PM_{10}$ and $PM_{2.5}$ standards. Of the four alternatives, San Luis Reservoir RMP/GP Alternatives 3 and 4 would have the highest potential to contribute to cumulative air quality effects because they would allow for a greater degree of visitation and, presumably, vehicle traffic. Contributions to cumulative air quality effects are expected to remain minor because recent state emissions standards would reduce overall countywide emissions from VMTs and offset increases in Plan Area visitor use emissions.

In particular, the CARB's LEV standards impose strict emission reduction requirements on all passenger cars, light trucks, and medium-duty passenger vehicles sold in California. Introduced in 1990, the LEV standards were designed to reach the state's clean air goal through improved reductions in smog-producing automotive emissions. The first LEV standards, in effect from 1994 through 2003, were replaced with the more stringent LEV II regulations from 2004 through 2010. When LEV II was fully implemented in 2010, the statewide emissions reduction was estimated at 155 tons per day (CARB, no date). LEV III standards, currently in development, will impose even stricter emissions requirements (CARB 2010b). In the San Joaquin Valley air basin, emissions reductions are also expected as a result of incentive measures in the SJVAPCD's 2007 Ozone Plan, which is designed to reduce ozone-forming NOx emissions by 50 tons per day in 2012, 56 tons per day in 2015, 41 tons per day in 2020, and 26 tons per day in 2023 (SJVAPCD 2007). Therefore, ozone emissions from future Plan Area visitor use would have a less than significant contribution to cumulative air quality impacts.

While LEV II standards and the 2007 Ozone Plan would offset the ozone emissions associated with increased visitor usage and associated VMTs, they do not address $PM_{2.5}$ exhaust emissions or $PM_{2.5}$ fugitive dust emissions associated

with vehicle travel. (The draft LEV III standards do, however, include a reduction in particulate matter emissions; CARB 2010b.) The majority of $PM_{2.5}$ emissions result from industrial, farming, prescribed burning and disposal sources. $PM_{2.5}$ on-road mobile exhaust emissions contribute 10.5 percent and $PM_{2.5}$ fugitive dust emissions from paved road travel contribute 6.7 percent of total $PM_{2.5}$ emissions in the air basin (CARB 2010b). The majority of $PM_{2.5}$ emissions result from industrial, farming, prescribed burning and disposal sources (CARB 2010b). Exhaust and fugitive dust from visitor use of the Plan Area are not expected to result in a cumulatively considerable net increase in $PM_{2.5}$ emissions. On-road mobile exhaust emissions and fugitive dust emissions represent a total of approximately 17.5 percent of total $PM_{2.5}$ emissions, and contributions from the Plan Area would represent only a small percentage of that total. The measures listed in Section 5.4.2.4 would further reduce cumulative contributions to less-than-considerable net increases in $PM_{2.5}$ emissions.

Other proposed projects in the Plan Area and vicinity have the potential to contribute to cumulative air quality impacts. As developments such as the Santa Nella Community Specific Plan (Section 3.3.2), the Villages of Laguna San Luis Community Plan (Section 3.3.4), and the Quinto Solar PV Project (Section 3.3.15.2) apply for approvals from permitting agencies, mitigation measures to reduce air quality impacts of the developments would be included in environmental documents. These ongoing and future developments that will increase area traffic or contribute temporary construction emissions will affect air quality in the Plan Area and adjacent vicinity. As all projects in the air basin are subject to the same SJVAPCD requirements to avoid major adverse air quality impacts, no cumulatively considerable effects are anticipated.

#### *5.9.2.2 Greenhouse Gases*

As described in Section 5.4.2.2, the model used to estimate GHG emissions for existing Plan Area conditions (CARB 2006) does not account for recently adopted state and federal GHG regulations for passenger vehicles that are designed to reduce future GHG emissions. As a result, using the model to determine future GHG emissions from Plan implementation and a potential increase in visitor usage would grossly overestimate future GHG emissions. Since vehicle manufacturers are expected to follow the California and federal GHG regulations for light-duty vehicles, future GHG emissions are expected to decrease even if visitor use of the Plan Area increased.

As discussed in Section 2.5.1.5, SJVAPCD guidelines state that if Best Performance Standards (BPS) are adopted for a project, the GHG cumulative impacts would be less than significant. As of January 2012, the BPS that have been approved apply primarily to stationary sources. Because no BPS for mobile sources have been approved, the San Luis Reservoir RMP/GP needs to demonstrate a 29 percent reduction in GHG emissions from business-as-usual to show that Plan implementation would have a less than cumulatively significant impact.

Full implementation of the Pavley standards are expected to result in a 22 percent (for 2009–2012) to 30 percent (for 2013–2016) reduction in GHG emissions. When California and federal regulations to reduce GHG emissions are in effect, a combined 30 percent reduction in GHG emissions is expected to result from visitor vehicles in the Plan Area. This would be in accordance with the 29 percent reduction recommended by the SJVAPCD for a project to not result in a cumulatively significant impact.

### 5.9.3 Biological Resources

Biological resources in the Plan Area and adjacent vicinity will be affected by ongoing and future agricultural, residential, and other development. In general, cumulative impacts to vegetation would include continued decreases in native plant species and increases in invasive weeds. Cumulative impacts to wildlife and special-status species would generally result from continued removal of habitat and increased habitat fragmentation. Cumulative impacts could also result from the increased availability of human food as a result of improper storage or disposal. The availability of human food can alter the behavior of wildlife such as San Joaquin kit fox and expose them to disease or competition from other foraging animals.

The following projects within or adjacent to the Plan Area have the potential to contribute cumulative biological impacts to those of the San Luis Reservoir RMP/GP.

**Villages of Laguna San Luis Community Plan** The Villages of Laguna San Luis Community Plan (Section 3.3.4) would be implemented by a series of Master Plans and allow for development of a mixture of urban land uses including:

- 3,011 acres of residential land uses (estimated to accommodate 15,895 housing units);
- 176 acres of commercial land uses;
- 204.5 acres of employment-generating land uses;
- 180 acres of schools;
- 41 acres for water and wastewater treatment facility; and
- 109.6 acres for public facilities (e.g., fire station, sheriff substation, and landfill).

The balance of the site (87 percent) would remain in open space reserved for San Joaquin kit fox habitat (Section 3.3.4).

As described in the Final EIR, approximately 158,570 acres of grasslands and dry-farmed land provide habitat for the Santa Nella satellite San Joaquin kit fox population (Merced County Planning and Community Development Department 2008c). The Final EIR identifies direct project-related impacts to approximately 2.25 percent, or 886 acres, of land that has potential to provide denning, resting, and foraging habitat for the kit fox. This represents 0.56 percent of the existing kit fox habitat available to the satellite population. The Final EIR provides on-site and off-site habitat preservation and management measures for the loss of

potential kit fox habitat and states that the project would not preclude existing opportunities for the San Joaquin kit fox to disperse northward through the Santa Nella area. Mitigation includes the designation of 1,059 acres of on-site open space as a kit fox preserve, installation of kit fox crossings along newly constructed roads, and installation of barriers between development and the kit fox open space preserve. The County and project applicants will coordinate with Reclamation and other landowners within the proposed kit fox open space preserve to develop a Kit Fox Conservation Plan that provides for kit fox habitat connectivity and dispersal. The kit fox open space preserve would also be used to provide suitable habitat for Swainson's hawk, CRLF, CTS and other special-status species. (Merced County Planning and Community Development Department 2008c).

**Santa Nella Community Specific Plan** The Santa Nella Community Specific Plan (Section 3.3.2) would consist of the following land uses:

- 13,334 acres of residential land uses (mixture of low to high density residential);
- 264.4 acres of commercial land uses;
- 26 acres of office commercial;
- 191.1 acres of light industrial;
- 99.1 acres of schools;
- 120 acres of golf;
- 189.5 acres of institutional;
- 289 acres for canals/wasteways; and
- 47 acres for SR 33.

As stated in Section 3.3.2, much of the development proposed in this 2000 plan has not yet occurred. If built, land uses allowed in the plan would contribute to cumulative impacts to San Joaquin kit fox.

The Santa Nella Community Specific Plan area is within a known dispersal corridor used by two subpopulations of San Joaquin kit fox. The area is also used for denning and foraging habitat. Implementation of the plan would directly affect the species through the loss of potential migrating, denning, and foraging habitat. The Santa Nella Community Specific Plan Final Recirculated Program EIR includes mitigation measures for the loss of breeding, foraging, and dispersal habitat through preservation of on-site habitat or acquisition of suitable off-site habitat. The off-site habitat would be located as close as possible to the Santa Nella Community Specific Plan area. The Mitigation Plan for the Restoration and Preservation of Habitat and Movement Corridors for the San Joaquin Kit Fox states that wildlife corridors would be established within the Santa Nella Community Specific Plan to allow for movement between the satellite San Joaquin kit fox populations. These corridors would include escape burrows, refuges and new crossings (Harvey 2004).

**Quinto Solar PV Project** The Quinto Solar PV Project (Section 3.3.15.2) would construct approximately 306,720 solar PV panels, an electrical substation and switchyard, overhead and underground utility lines, a 5,000 square-foot operations and maintenance building, unpaved access roads, security fencing, and a temporary staging area within approximately 528 acres of the 1,012-acre proposed project site. The March 2012 Draft EIR (Merced County Planning and Community Development Department 2012) identifies significant and potentially significant biological impacts during project construction and/or operation to American badger, burrowing owl, San Joaquin kit fox, Swainson's hawk, western spadefoot, loggerhead shrike, grasshopper sparrow, and nesting migratory birds and raptors. Mitigation includes standard measures such as worker training, preconstruction surveys, imposition of buffer zones around nest sites, work windows to avoid the nesting season, and entrapment avoidance for San Joaquin kit fox. The Quinto Solar PV Project Draft EIR also provides for habitat and protective measures to promote San Joaquin kit fox movement corridor connectivity north of Santa Nella, including the creation of a new mitigation easement over a 110-acre grassland area to the north of the project site.

**Conclusion** The EIRs for the Villages of Laguna San Luis Community Plan, Santa Nella Community Specific Plan, and Quinto Solar PV Project provide mitigation that would reduce project-related impacts to San Joaquin kit fox to less-than-significant levels. The proposed San Luis Reservoir RMP/GP has the potential to result in minor adverse effects to San Joaquin kit fox habitat, as described in Section 5.4.3.3, and includes measures such as those described in Section 5.4.3.4 to avoid or minimize those effects. Combined, the projects would not result in cumulatively considerable or significant effects to San Joaquin kit fox.

Although San Luis Reservoir RMP/GP Alternatives 2, 3, and 4 may increase recreational use and result in potential impacts to biological resources other than San Joaquin kit fox, they include a framework in which to better manage these resources and any potential cumulative impacts. However, under Alternative 1, the existing framework to manage biological resources would not be sufficient to properly manage increased pressure on those resources from population growth and development in the area. Therefore, minor cumulative impacts would be associated with Alternative 1, but not with Alternatives 2, 3, and 4.

### 5.9.4 Scenic/Aesthetics

As described in Section 5.4.5.4, San Luis Reservoir RMP/GP Alternatives 2, 3, and 4 would have minor impacts to scenic vistas, scenic resources, and light and glare that could be minimized or avoided through implementation of Goals RES-S1 through RES-S5 and their associated guidelines (Section 4.2.1.1). In addition, specific mitigation measures will be developed and implemented on a project-by-project basis, if mitigation is necessary.

Implementation of the Santa Nella Community Specific Plan (Section 3.3.2), Villages of Laguna San Luis Community Plan (Section 3.3.4), and Fox Hills Community Specific Plan (Section 3.3.5) would convert agricultural and open

space land to developed urban uses including residential, commercial, and public facilities. Depending on the development and area, permanent adverse effects to views of the Diablo Range (a local scenic vista), views from SR 152 (a state and county scenic highway), and the general viewshed of the development areas could occur. Full implementation of the three community plans would also introduce new light sources in the western portion of Merced County, which could obscure views of stars and other features of the night sky.

Of the three community plans, the only development that has taken place as of July 2012 is in the Santa Nella Community Specific Plan area, where 184 single-family homes have been completed to the northeast O'Neill Forebay. However, partial or full implementation of these plans is reasonably foreseeable during the 25-year planning horizon for the San Luis Reservoir RMP/GP. At approximately 3 miles from Los Banos Creek Reservoir, the Fox Hills Community is unlikely to result in major adverse impacts to the viewshed for visitors to Los Banos Creek Use Area. Both the Santa Nella and Villages of Laguna San Luis community plan areas are immediately adjacent to San Luis Reservoir SRA (specifically Medeiros Use Area, O'Neill Forebay, and O'Neill Forebay Wildlife Area). Both developments would include measures to minimize light intrusion as well as design, architectural, development, and landscaping standards to lessen the impact from the conversion of open space and agricultural land to urban development. However, residual impacts to distant views from Medeiros Use Area, O'Neill Forebay, and O'Neill Forebay Wildlife Area toward the northwest, west, and southwest are likely to remain.

Both construction and operation of the Quinto Solar PV Project (Section 3.3.15.2) would affect the visual setting of the San Luis Creek Campground at the San Luis Use Area. Temporary nighttime construction lighting and permanent security lighting for the operations and maintenance building, switchyard, and substation would be visible to campground visitors and cause "sky glow" effects. In addition to requiring that temporary nighttime construction lighting be shielded to reduce sky glow, the project's Draft EIR states that construction lighting would be prohibited after 7 PM within 500 feet of campsites unless agreed upon by the CSP Superintendent for the Four Rivers Sector. If the nighttime construction lighting is powered by diesel generator or another noise-generating source, the use of such lighting near the San Luis Creek Campground could be more restricted (Merced County Planning and Community Development Department 2012).

Solar arrays and the substation and switchyard of the Quinto Solar PV Project would be highly visible to visitors to the San Luis Creek Campground, especially to campers staying at campsites closest to the common boundary between the campground and Quinto Solar PV Project Site Area 1 to the west and north. The Quinto Solar PV Project Draft EIR includes mitigation measures for long-term visual effects to the San Luis Creek Campground. The measures include a lighting plan to prevent light spillover and sky glow effects from the substation and switchyard from affecting nighttime views at the campground. Landscape planting would also be installed to shield views of project facilities from the San Luis Reservoir Plan Area (Merced County Planning and Community

Development Department 2012).Although the project includes measures to minimize and mitigate for impacts to the San Luis Reservoir SRA and the local visual environment, residual impacts would remain.

The individual community plans and the Quinto Solar PV Project may not result in major adverse visual impacts to views from, and the viewshed around, San Luis Reservoir SRA. Together, the projects would have the cumulative effect of replacing views of open areas with those of development. Compared to the community plans and the Quinto Solar PV Project, cumulative scenic/aesthetic impacts from implementation of the San Luis Reservoir RMP/GP would be minor.

### 5.9.5 Recreation

As described in Section 5.4.6.3, implementation of the San Luis Reservoir RMP/GP action alternatives could have minor impacts on recreation as a result of disruptions from temporary construction activities, addition of new activities and facilities, and management of boat density levels.

Implementation of the Santa Nella Community Specific Plan (Section 3.3.2), Villages of Laguna San Luis Community Plan (Section 3.3.4), and Fox Hills Community Specific Plan (Section 3.3.5) can be expected to increase visitation to existing recreational facilities, including San Luis Reservoir SRA. Together, full buildout of the three community plans would add approximately 70,000 people to the local population (Santa Nella Community Specific Plan, 18,941; Villages of Laguna San Luis Community Plan, 44,773; and Fox Hills Community Specific Plan, 7,184).

Substantial development in these areas is not expected in the near future due to current economic conditions. Of the three community plans, the only development that has taken place as of July 2012 is in the Santa Nella Community Specific Plan area, where 184 single-family homes have been completed. However, partial or full implementation of these plans is reasonably foreseeable during the 25-year planning horizon for the San Luis Reservoir RMP/GP. As development occurs, visitation to San Luis Reservoir SRA can be expected to increase. For example, the Villages of Laguna San Luis Community Plan includes a trail system linking the community plan area to San Luis Reservoir SRA (Merced County Planning and Community Development Department 2008c).

While each individual community plan may not result in the substantial physical deterioration of San Luis Reservoir SRA, full buildout of the three plans would increase recreation demand at San Luis Reservoir SRA. Each community plan includes recreational facilities to minimize cumulatively considerable impacts to recreation; however, residual cumulative impacts could remain. Compared to the community plans, cumulative impacts to recreation from implementation of the San Luis Reservoir RMP/GP would be minor.

### 5.9.6 Circulation

As described in Section 5.4.7.3, projected increases in local and regional population will result in additional traffic on roadways in the Plan Area vicinity. Traffic congestion may impair circulation along the Plan Area's roadway network and increase driving time for visitors to access various parts of the Plan Area. These effects will occur regardless of alternative or Plan implementation. The action alternatives could increase visitation by providing for the development of additional facilities and uses. Increased visitor use could result in an increase in vehicle trips in and near the Plan Area, thereby contributing to traffic congestion on SR 33, SR 152, and other roadways near the Plan Area. Because the amount of traffic generated by visitor trips to the Plan Area constitutes a small portion of overall traffic in the area, implementation of Alternatives 2, 3, or 4 would have a minor adverse impact on local traffic.

Existing LOS data for SR 152 and SR 33 in the Plan Area vicinity are not available, but SR 152 east of Gilroy and on the eastbound ascent to Pacheco Pass is nearing capacity and will exceed capacity by 2015 (VTA 2010). MCAG's 2011 Regional Transportation Plan forecasts that by 2035, both SR 152 and SR 33 in the Plan Area vicinity will operate at LOS F (MCAG 2010a). Improvements to the SR 152 corridor are planned but have not yet been implemented, as described in Sections 3.3.11 and 3.3.12.

Considered cumulatively, additional traffic related to increased Plan Area visitation would contribute to an exceedance of capacity, although the contribution would be very slight (Section 5.4.7.3). Any addition to existing traffic in this area under any alternative, including No Action/No Project, would result in additional congestion and a slightly accelerated degradation of LOS. Of the four alternatives, Alternatives 3 and 4 would result in the greatest potential contribution to cumulative adverse traffic impacts, assuming all proposed facilities and uses are implemented.

Other proposed projects in the Plan Area and vicinity have the potential to contribute to cumulative circulation impacts. Developments such as the Santa Nella Community Specific Plan (Section 3.3.2) and Villages of Laguna San Luis Community Plan (Section 3.3.4) are required to evaluate and mitigate for the local and regional traffic impacts of the developments. The Villages of Laguna San Luis Community Plan, for example, will require that the developer contribute "fair share" funding toward roadway improvements at several locations where the development is projected to result in substantial traffic increases, including improvements at the intersection of SR 33 and SR 152 and widening SR 152 to six lanes east of I-5 (Merced County Planning and Community Development Department 2008d). Although these improvements could benefit travelers and staff entering and leaving the San Luis Reservoir SRA, residual cumulative impacts from development-related traffic are likely to remain.

# 6 Consultation, Coordination, and Distribution

## 6.1 Public Involvement Program

Public outreach for the RMP/GP began in 2002. A mailing list was compiled using the names and addresses of Plan Area visitors and participants in interpretive programs, as well as other agencies and entities required by NEPA and CEQA. A variety of methods, such as public meetings, surveys, and newsletters, were used to reach out to stakeholders of the Plan Area and to identify their needs and concerns for its future. The following outlines the components and dates of the public scoping efforts:

- Notice of Preparation (NOP) – November 22, 2002
- Notice of Intent (NOI) Filed in the Federal Register – February 7, 2003
- Newsletter No. 1 and Survey – December 2002 (mailed)
- Public Scoping Meeting No. 1 – January 11, 2003
- Public Scoping Meeting No. 2 – February 20, 2003
- Newsletter No. 2 and Stakeholder Summary – May 2003 (mailed and distributed on-site)
- Public Meeting No. 3 – May 27, 2003
- Focus Group Meeting Striped Bass Association – September 10 , 2003
- Focus Group Meeting San Luis Sailboard Patrol – October 18, 2003

The survey information and any written or spoken comments were included in the summaries of the public meetings and the stakeholder summary. The meeting summaries, stakeholder comments, NOP and the newsletters, including a copy of the survey, are provided in Appendix C. The mailing list database has been maintained throughout the planning process and is updated as new requests for information are received. Entries are deleted for survey respondents who indicate on the survey that they want to be removed from the database.

### 6.1.1 Consultation with the U. S. Fish and Wildlife Service

The USFWS responded to the NOI/NOP in a letter dated January 7, 2003, which is summarized in Table 6-1. Reclamation and CSP met with the Endangered Species Division staff of the USFWS on February 13, 2003, to inform USFWS staff about the Plan and proposed action. In July 2003, Reclamation and CSP sent USFWS draft alternatives maps and descriptions for implementation of the Plan. Comments were received on this information in October 2003 from USFWS staff. Comments were incorporated into the Plan, alternatives, and associated environmental analysis. Additionally, all mailings and meeting notices regarding

the Plan and environmental review were sent to USFWS throughout the planning process.

As stated previously, new or expanded facilities or activities described in this Plan have been identified at a conceptual level only and do not have specific locations or footprints; therefore, the environmental analysis contained in this Draft EIS/EIR is programmatic in nature. Project-level actions discussed under each alternative will not be implemented until separate NEPA and/or CEQA compliance is completed. At that time, project-level (site-specific) impacts to special-status species will be evaluated, and consultation with the USFWS will be initiated.

### 6.1.2 Consultation with the California State Historic Preservation Officer

The SHPO was contacted initially on July 22, 2003, to ascertain information regarding Section 106 of NHPA compliance for the proposed Plan. Based on conversations with various staff at SHPO concluding on July 30, 2003, Reclamation has determined that the current action is not an “undertaking” pursuant to Section 106 and that the Plan provides specific goals and guidelines to comply with Section 106 during implementation of the Plan. Upon approval of the Plan, Reclamation and CSP may choose the option of seeking a programmatic agreement with SHPO. The agreement would cover Section 106 consultation processes and agency roles and responsibilities. Otherwise, individual projects identified as Federal undertakings would require Section 106 consultations. SHPO is on the mailing list and will receive all correspondence related to the Plan.

### 6.1.3 Consultation with Caltrans

On September 11, 2003, a meeting with representatives from the California Department of Transportation (Caltrans) District 10 was conducted to discuss possible improvements and safety issues related to the Plan Area ingress and egress. Following this meeting, the goals and guidelines that are part of this Plan and related to transportation at State Route (SR) 152 and Interstate 5 (I-5) are a result of recommendations and possible actions that will need to be coordinated with District 10 staff.

### 6.1.4 Consultation with Native Americans

All mailings concerning the Plan and associated meetings were sent to the mailing list compiled for the Plan Area, which includes several Native Americans who have expressed interest in the Plan Area. A letter was sent on July 11, 2003, to the NAHC informing the commission of the proposed action and its location. A response received on August 15, 2003, states: “A record search of the sacred land files has failed to indicate the presence of Native American resources in the immediate Plan Area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any Plan Area.” Additionally, the commission provided a list of two individuals who may have knowledge of cultural resources in the area. These individuals were contacted via telephone on two occasions and have been placed on the mailing list for Plan Area

information. No correspondence has been received from any Native American individuals or groups.

A supplemental sacred lands file search request was sent to the NAHC on October 20, 2011. A response received on October 27, 2011, confirmed that the results of the original sacred lands file search have not changed. In addition, the NAHC included a list of five individuals who may have knowledge of cultural resources in the area. Those individuals have been added to the Plan mailing list. Native American consultation will be conducted as required under Section 106 either on individual projects or under a programmatic agreement, should one be developed.

### 6.1.5 Other Consultation

In January 2012, Reclamation and CSP provided DWR and DFG with copies of the Administrative Draft RMP/GP and Draft EIS/EIR for review and comment before public circulation. Copies were sent to the following:

- Jim Thomas, Field Division Chief, California Department of Water Resources, San Luis Field Division
- William Cook, Jr., California Department of Fish and Game, Los Banos Wildlife Complex
- Terry Palmisano and Julie Vance, California Department of Fish and Game, San Joaquin Valley-Southern Sierra Region 4

No comments were received from DWR or DFG staff on the January 2012 draft.

### 6.1.6 Summary of Issues Raised During Scoping and Public Involvement Program

All correspondence received during the planning process in the form of letters or survey responses is summarized in Table 6-1. Additionally, comments and issues raised during public scoping meetings are included in the meeting summaries presented in Appendix C.

**Table 6-1**
**Scoping Comment Summary**

| Person & Affiliation | Comment Type | Comments, Issues, and Suggestions |
|---|---|---|
| Jan C. Knight<br>Chief, Endangered Species Division, USFWS | Letter | • Protection of federally listed threatened and endangered species (a list of threatened and endangered species was enclosed)<br>• Protection of kit fox corridor by conserving a continuous linkage of habitat along the eastern edge of the Diablo Range in western Merced County |
| Chrystal Meier<br>CEQA Intern, San Joaquin Valley Air Pollution Control District | Letter | • Control of project-related air pollutant emissions associated with the project and associated traffic increases, particularly ozone and $PM_{10}$ emissions<br>• Inclusion of features designed to reduce vehicle trips and increase walking, bicycling, transit use, and energy conservation<br>• Proper preparation of an air quality analysis to determine project impacts |
| Tom Dumas<br>Chief, Office of Intergovernmental Review and Intermodal Planning, DOT | Letter | • Preparation of a Traffic Impact Study when future development activities are determined, as will be required by Caltrans |
| Jim Thomas<br>Chief, San Luis Field Division, Division of Operations and Maintenance, DWR | Letter | • Continued operation of dam and power facilities by DWR to meet SWP needs will not be disrupted, including maintenance of dams and surrounding areas<br>• Development of increased security precautions for facilities (a list of security concerns was included)<br>• Protection of reservoir and water quality against contamination from recreational activities, including motor boating, livestock pasturing, and increased sediment runoff |
| Chet Vogt | Letter | • Implement a grazing-rest regime for grasslands in the area in order to maintain and expand the populations of native perennial plants, which is essential to maintaining species survival, soil health, water penetration; a grazing-rest regime will also maintain the landscape in a “short grass” condition vital for other threatened species such as the kit fox and tiger salamander<br>• Both overgrazing and undergrazing can harm the ecological and recreational resources in the Plan Area |

**Table 6-1**
**Scoping Comment Summary**

| Person & Affiliation | Comment Type | Comments, Issues, and Suggestions |
|---|---|---|
| Michael F. Garnero<br>San Luis Sailboard Safety Patrol | Survey | • Maintain water levels in O'Neill Forebay above 220 feet<br>• Provide better access to water for windsurfers to launch |
| George Stricker | Survey | • Construct better road access to properties beyond park |
| Stan Pleskunas | Survey | • Allow fishing access before sunrise and after sunset<br>• Cut channels in the flats of O'Neill Forebay (southwest corner)<br>• Eliminate summer weeds and silting problems<br>• Establish a minimum water level in O'Neill Forebay and do not go below<br>• Fishery enhancement projects should be conducted<br>• DFG should enforce regulations against poaching<br>• Improving the Forebay would create a high-quality sailing location and improve fish and wildlife habitat |
| Ferdinand Morales-Arcay<br>Templo Ebenezev Christian Center | Survey | • Additional restrooms and showers<br>• SR 152 is extremely difficult to cross because of the high volume of traffic in the area<br>• The Basalt driveway lacks adequate lighting<br>• Enlarge group areas to accommodate larger groups |
| Lyndy Walker | Survey | • Protect plants and wildlife |
| Ben Bacigalupi | Survey | • Provide additional drinking water sources and maintain drinking water quality<br>• Construct additional changing rooms<br>• Equip restrooms with running water<br>• Continue the weed-elimination project currently underway<br>• Maintain higher water levels<br>• There is a lack of shaded areas |

**Table 6-1**
**Scoping Comment Summary**

| Person & Affiliation | Comment Type | Comments, Issues, and Suggestions |
|---|---|---|
| Olga St. John | Survey | • Do not install electric hookups in tent-camping area |
| George Ground<br>San Luis Sailboard Safety Patrol | Survey | • Maintain a minimum water level of 220 feet in O'Neill Forebay<br>• Low water levels in O'Neill Forebay would not be an issue if there were no ridges near the water level; dredging and removing ridges could present an opportunity to allow more variation in water levels without disrupting recreation on the Forebay (currently, buoys are placed on ridges to warn windsurfers and other users)<br>• Pave some of the dirt roads for dust control |
| Allan Parnell Bennison | Survey | • Put together interpretive signs identifying unusual plants and geologic formations throughout the recreation area<br>• Provide informational materials regarding San Luis Reservoir's history and role in the SWP and CVP<br>• Remove the two gates leading to Basalt rock quarry (if not on private property) |
| Arnold Jorgenser<br>San Luis Sailboard Safety Patrol | Survey | • Improve roads throughout the recreation area, including maintaining dirt roads to prevent "washboard" formation<br>• Eliminate the dense weeds that grow in the Forebay in late summer |
| Tom McCubbin<br>San Luis Sailboard Safety Patrol | Survey | • Maintain higher water levels in O'Neill Forebay<br>• Eliminate weeds in the reservoir and Forebay<br>• Plant additional trees around the existing cabanas<br>• Maintain natural landscape and prevent overdevelopment |
| M. H. Parden | Survey | • Enlarge camping spaces to accommodate larger vehicles/groups<br>• Fix electric and water hookups at camping areas<br>• Plant additional trees, especially in camping areas<br>• Keep all camping areas open throughout the year |

**Table 6-1**
**Scoping Comment Summary**

| Person & Affiliation | Comment Type | Comments, Issues, and Suggestions |
|---|---|---|
| Mrs. J. Martin | Survey | • Plant additional trees for shade and privacy<br>• Provide additional campsites/campgrounds<br>• Create additional hiking trails |
| Judy and Ron Davenport | Survey | • Construct a trail from San Luis Reservoir to Los Banos Creek Reservoir, preferably a loop trail<br>• Keep the area natural and simple |
| Robin Lee | Survey | • Protect habitat over human concerns/amenities<br>• Reduce the amount of impervious surfaces to lessen pollution and erosion impacts<br>• Follow green building guidelines<br>• Improvements should be of the nature of lowering human impact on the habitat |
| Patricia Snoke<br>Gustine Historical Society | Survey | • Protect kit fox |
| Tony Cerda<br>Costanoan Rumsen Carmel Trip | Survey | • Conduct an extensive study of the first people to live in the area |
| Steve Pearl<br>Wildfro Racing LLC | Survey and Scoping Meeting | • Improve turnoffs on Dinosaur Point Road<br>• Improve exits from the area, including from Dinosaur Point Road onto SR 152 West, from the Basalt Use Area onto SR 152 West, and from San Luis Creek Use Area onto SR 152 East (all are left turns)<br>• Provide an information/service booth at entrance to Dinosaur Point parking area<br>• Encourage the further development of gravity sports in the Dinosaur Point area<br>• Increase the technical nature of Dinosaur Point Road to provide improved street luge conditions, and improve the system for keeping cars off of the road during luge runs<br>• Construct roads dedicated to street luge (rather than dual use)<br>• Maintain park beauty and peacefulness |

**Table 6-1**
**Scoping Comment Summary**

| Person & Affiliation | Comment Type | Comments, Issues, and Suggestions |
|---|---|---|
| John Fulton | Survey | • Control invasive, exotic plant species<br>• Eucalyptus trees provide less valuable habitat than blue oaks and other native plants<br>• Address the issue of bicycle restrictions and allow biking on trails where it is currently prohibited due to low levels of trail maintenance |
| Robert and Harriet Jakovina<br>Defenders of Wildlife | Survey | • Remove fences on old roads<br>• Prohibit autos and trucks from accessing frog pond areas<br>• Open the entire recreation area to public uses (no closed areas) |
| Pamela Myatt | Survey | • Protect and enhance wildlife habitat<br>• Upgrade bathrooms and showers at Basalt area<br>• Construct a bicycle path around the lake<br>• Improve hiking trails and maps<br>• Increase patrols at Los Banos Creek camping area to prevent disruptive behavior |
| Fred Yost | Survey | • Protect wildlife<br>• Prevent litter and overcrowding<br>• Provide shade closer to water<br>• Provide camping areas closer to the water |

**Table 6-1**
**Scoping Comment Summary**

| Person & Affiliation | Comment Type | Comments, Issues, and Suggestions |
|---|---|---|
| Bruce and Stephanie Hochuli<br>San Luis Sailboard Safety Patrol | Survey and Scoping Meeting | • Remove non-native vegetation from lake to provide clearer water and enhance lake usage<br>• Maintain unspoiled natural beauty and avoid overcrowding of recreation area<br>• Open the launch ramp on the Medeiros side of O'Neill Forebay during all seasons<br>• Eliminate the weeds that clog recreation in the lake and Forebay<br>• Are water supply goals for CVP users and increased water levels in O'Neill Forebay mutually exclusive? Maintain a minimum water level of 219 feet<br>• Provide automated water level information that is up to date; the current system often provides data that are several days old and no longer useful<br>• The 10 mph speed limit on O'Neill Forebay should be clearly marked throughout the Forebay; currently it is only marked at the boat launch area<br>• Provide a good launch ramp for personal watercraft; the current launch area is difficult to use<br>• Do gates at the Medeiros boat launch area provide increased security, and are they necessary? Remove the gates at the Medeiros boat launch area<br>• Construct loop trail around the reservoir for bicycles and allow mountain biking on primitive and un-maintained trails where it is now prohibited; the current trail does not make a complete loop<br>• Why has San Luis Dam been closed to bicyclists, but not to hikers, since September 11? Open San Luis Dam to cyclists<br>• The abundance of power lines in the area is a concern to wind surfers, many of whom are moving into kite surfing; the number of power lines in the area should be minimized, and their location should allow for all recreational opportunities in the area<br>• Maintain ample parking very near to the water at O'Neill Forebay<br>• Remove the submerged pipe near the Medeiros Use Area, as this pipe causes serious injuries to forebay users<br>• A viewing platform at O'Neill Forebay is not a priority. |

**Table 6-1**
**Scoping Comment Summary**

| Person & Affiliation | Comment Type | Comments, Issues, and Suggestions |
|---|---|---|
| Darryl Henley | Survey | • Do not build a dam in Menjoulet Canyons |
| Hector R. Guerra<br>San Joaquin Valley Air Pollution Control District | Survey | • Reduce air quality impacts associated with the recreation area<br>• Prevent air quality impacts associated with additional projects |
| David March | Survey | • Maintain/improve water quality in the reservoir<br>• Maintain/improve hiking opportunities |
| Bruce Frohman<br>Modesto City Council | Survey | • Maintain the natural scenery<br>• Minimize the amount of new road construction |
| Robert K. Elsensohn<br>San Luis Sailboard Safety Patrol | Survey | • Maintain primitive facilities and continue to provide campsites near the waters' edge<br>• Minimize water level fluctuation in O'Neill Forebay<br>• Eliminate speeding and littering in the area<br>• Dredge the windsurfing areas and eliminate weeds on O'Neill Forebay for safety |
| Cindy Skemp | Survey | • Eliminate vandalism and litter throughout the area<br>• Provide showers by the day-use area, on the windsurfing side<br>• Provide sailboard/windsurfing access to the upper lake<br>• Maintain higher water levels in O'Neill Forebay |
| Manuel Lucero | Survey | • Pump septic tanks more often<br>• Continue to maintain clean and quiet campgrounds |
| Michael F. Garnero<br>San Luis Sailboard Safety Patrol | Survey | • Improve access to water for windsurfers carrying their boards and gear<br>• Address low water levels in O'Neill Forebay; maintain a minimum water level of 220 feet |

**Table 6-1**
**Scoping Comment Summary**

| Person & Affiliation | Comment Type | Comments, Issues, and Suggestions |
|---|---|---|
| Randolph O. Kelly<br>Department of Fish and Game<br>Senior Biologist Supervisor | Survey | • Reduce the dramatic fluctuations in water levels<br>• Improve habitat and vegetation in the reservoir, which will also improve habitat for aquatic species |
| Vern Masse | Scoping Meeting | • Water levels in O'Neill Forebay should be addressed, with the goal of maintaining higher and more stable water levels |
| Mandeep Bling<br>Department of Water Resources | Scoping Meeting | • The primary purpose of San Luis Reservoir is to distribute water to the existing contracts<br>• Every effort is made to minimize fluctuations of water levels at O'Neill Forebay |
| Clyde Strickler<br>Department of Parks and Recreation (Retired Superintendent) | Scoping Meeting | • DWR and Reclamation have always worked closely with CSP to resolve recreation-related issues, such as the water level in O'Neill Forebay, as they did with Los Banos Creek Use Area |
| Dan Applebee<br>Department of Fish and Game | Scoping Meeting | • What is the current level of hunting in the recreation area?<br>• What are the limits placed on personal watercraft on the reservoir and the Forebay?<br>• Though the General Plan has no legal authority to solve existing conflicts, the issue of water levels should be addressed in the Plan |
| Ricardo Cortesa<br>Bureau of Reclamation | Scoping Meeting | • What opportunities are currently available in the recreation area for equestrians? |
| Robert King<br>Merced County Planning Department | Scoping Meeting | • Include the protection of kit fox corridors and other habitat conservation measures in the plan<br>• Merced County would like to see State Parks partner with the County in developing the Habitat Conservation Plan for the area |
| Tom Young<br>Department of Water Resources | Scoping Meeting | • There is an automated water level recorder for O'Neill Forebay that could possibly be updated to record data over smaller time intervals and transfer information to the California Data Exchange, which would provide much better water level information to the public. As requested by the SLSSP and other recreational users, this should be looked into. |

**Table 6-1**
**Scoping Comment Summary**

| Person & Affiliation | Comment Type | Comments, Issues, and Suggestions |
|---|---|---|
| Sam Halsted | Scoping Meeting | • Maintain open space throughout the recreation area and its surroundings<br>• Future uses along Whiskey Flat Road should be limited; the area should not be used for parking or park access, as this may disrupt ranches along the road<br>• State Parks should increase efforts to eradicate feral pigs from the area |
| Mike Mulligan<br>Compliance Specialist,<br>Department of Fish and Game | Scoping Meeting | • Use the General Plan as a means of filling some of the gaps in knowledge regarding issues associated with the reservoir and Forebay<br>• Maintain or expand the hunting and fishing opportunities in the recreation area<br>• Take advantage of the opportunity provided by the Plan for a long-term Section 1600 permit for ongoing maintenance activities<br>• Address the issue of permits for endangered species |
| Public Comments (Anonymous) | Second Alternatives Workshop (June 2003) | • Maintain existing waterfowl hunting opportunity on and along shorelines of reservoir and forebay<br>• Allow boat-access camping (dispersed, primitive camping) on San Luis Reservoir shoreline in primitive areas<br>• Improve SR 33 turn lanes<br>• Don't encourage personal watercraft by providing rental units<br>• Survey and monitor cultural resources<br>• Are cell towers appropriate? |
| Paul Larron | Letter – 7/16/03 | • Member of Turlock Horseman's Club that hold organized rides in California rangelands; they enjoy seeing cattle grazing and appreciate what they do for the landscape. Ungrazed patches seem to turn weedy and pose a fire danger |

**Note:** Additional public comments are included in the meeting summaries dated 1/11/03 and 5/27/03 in Appendix C

Caltrans = California Department of Transportation

CVP = Central Valley Project

DFG = California Department of Fish and Game

DWR = California Department of Water Resources

SR = State Route

SWP = State Water Project

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# 8 Glossary of Terms

**Aesthetics:** The visual, audible, and other sensory factors within the Plan Area setting and its surrounding landscapes that, taken together, establish character or sense of place.

**Active fault:** A fault that has moved recently and which is likely to move again. For planning purposes, an "active fault" is usually defined as one that shows movement within the last 11,000 years and can be expected to move within the next 100 years.

**Ambient air quality:** The atmospheric concentration (amount in specified volume of air) of a specific compound as actually experienced at a particular geographic location that may be some distance from the source of the relevant pollutant emissions.

**Archaeological:** Pertaining to the material remains of past human life, culture, or activities.

**Best Available Control Technology (BACT):** The most stringent emission limit or control technique that has been achieved in practice that is applicable to a particular emission source.

**Best Management Practice(s) (BMP):** The most current methods, treatments, or actions in regard to environmental mitigation responses.

**Biodiversity:** Biological diversity in an environment as indicated by numbers of different species of plants and animals, as well as the relative abundance of all the species within a given area.

**Buffer:** Land that protects natural and/or cultural values of a resource or park from adverse effects arising outside the buffer.

**California State Parks and Recreation Commission:** A commission established in 1927 to advise the Director of the California Department of Parks and Recreation on the recreational needs of the people of California. In 1928 it gathered support for the first State Park bond issue. The commission schedules public hearings to consider classification or reclassification and the approval of CSP's general plan (and amendments) for each park.

**California Environmental Quality Act (CEQA):** A state law (PRC §21000 et seq.) requiring state and local agencies to take actions on projects with consideration for environmental protection. If a proposed activity may result in a significant adverse effect on the environment, an EIR must be prepared. General plans require a "program EIR" and park development projects require a project environmental document.

**Clean Water Act:** A law enacted in 1972 to create a basic framework for current programs to control water pollution; provides statutory authority for the National Pollutant Discharge Elimination System (NPDES).

**Concession:** A contract with persons, corporations, partnerships, or associations for the provision of products, facilities, programs, and management and visitor services that will provide for the enhancement of park visitor use, enjoyment, safety, and convenience. Concession developments, programs, and services must be compatible with a park's classification and general plan provisions.

**Conservation easement:** Acquisition of rights and interests to a property to protect identified conservation or resource values using a reserved interest deed. Easements may apply to entire parcels of land or to specific parts of the property. Most are permanent, although term easements pose restrictions for a limited number of years. Land protected by a conservation easement remains on the tax rolls and is privately owned and managed; landowners who donate conservation easements are generally entitled to tax benefits.

**Cultural landscape:** A geographic area (including both the cultural and natural resources) associated with a historic event, activity, or person or exhibiting cultural or aesthetic values. This type is a landscape that evolved through use by people whose activities or occupancy shaped it.

**Cultural resource:** A resource that exists because of human activities. Cultural resources can be prehistoric (dating from before European settlement) or historic (post-European contact).

**Cumulative impact:** As defined by the State CEQA Guidelines (§15355), two or more individual effects that are considerable when considered together, or that compound or increase other environmental impacts.

**Degradation:** The reduction of environmental quality in an area through a lessening of diversity, the creation of growth anomalies, or the supplanting of native species by non-native plant and animal species.

**Demographic:** Having to do with a particular characteristic of a segment of the public at large; may be connected to the group's age, the region where the group resides, a particular recreational interest, economic status, etc.

**Effect/impact:** An environmental change; as defined by State CEQA Guidelines §15358: (1) Direct or primary effects are caused by the project and occur at the same time and place; (2) Indirect or secondary effects are caused by the project and are late in time or farther removed in distance, but still reasonably foreseeable. Indirect or secondary effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water quality and other natural systems, including ecosystems.

**Endangered species:** A species of animal or plant whose prospects for survival and reproduction are in immediate jeopardy from one or more causes. The U.S.

Fish and Wildlife Service and/or the California Department of Fish and Game make this designation.

**Environment:** As defined in State CEQA Guidelines §15360, "the physical conditions which exist within the area which will be affected by a proposed project, including land, air, water, mineral, flora, fauna, noise, and objects of historical and aesthetic significance."

**Environmental impact report (EIR):** A report required by CEQA that assesses all the environmental characteristics of an area and determines what effects of impacts will result if the area is altered or disturbed by a proposed action. If a proposed activity may result in a significant adverse effect on the environment, an EIR must be prepared. General plans require the preparation of a "program" EIR appropriate to its level of specificity.

**Environmentally sensitive:** An area in which plant or animal life or their habitats are either rare or especially valuable because of their role in an ecosystem. Such areas can be easily disturbed or degraded by human activities and developments.

**Exotic species:** A species occurring in an area outside of its historically known natural range that has been intentionally introduced to or has inadvertently infiltrated into the system. Also known as non-native, ornamental, or introduced species. Exotic animals prey upon native species and compete with them for food and habitat. Exotic plant species can convert native ecosystems into a non-native dominated system that provides little benefit to other species in the ecosystem.

**Floodplain:** A lowland or relatively flat area adjoining inland or coastal waters that is subject to a one or greater chance of flooding in any given year (i.e., 100-year flood).

**Geology:** The scientific study of the origin, history, and structure of the earth.

**General Plan:** A legal planning document that provides guidelines for the development, management, and operation of a unit of the State Park system. A general plan evaluates and defines land uses, resource management, facilities, interpretation, concessions, and operations of a park and addresses environmental impacts in a programmatic manner. A park must have an approved general plan before any major development project is implemented.

**Grade:** The degree of rise or descent of a sloping surface.

**Habitat:** The physical location or type of environment, in which an organism or biological population lives or occurs. It involves an environment of a particular kind, defined by characteristics such as climate, terrain, elevation, soil type, and vegetation. Habitat typically includes shelter and/or sustenance.

**Hazardous material:** Any substance that, because of its quantity, concentration, physical or chemical characteristics, poses a significant presence or potential hazard to human health and safety or to the environment. Lead-based paint is an example of a hazardous material.

**Hydrology:** Pertaining to the study of water on the surface of the land, in the soil and underlying geology, and in the air.

**Impervious surface:** Any material that reduces or prevents absorption of water into land.

**Infrastructure:** Public services and facilities, such as sewage-disposal systems, water supply systems, other utility systems, and road and site access systems.

**Interpretation:** A communication process designed to reveal meanings and relationships of our cultural and natural heritage through involvement with objects, artifacts, landscapes, sites, and oral histories.

**Kilowatt:** A measure of the rate of electrical flow equal to 1,000 watts.

**Kilowatt-hour:** A measure of quality of electrical consumption equal to the power of 1 kilowatt acting for 1 hour.

**Landform:** Configuration of land surface (topography).

**Mean sea level:** The average altitude of sea surface for all tidal stages.

**Mitigation measure:** A measure proposed that would eliminate, avoid, rectify, compensate for, or reduce significant environmental effects (see State CEQA Guidelines §15370).

**National Register of Historic Places (NRHP):** The official federal list of buildings, structures, objects, sites, and districts worthy of historic preservation. The register recognizes resources of local, State, and national significance, and includes four criteria under which a resource can be considered significant for listing on the Register. The registers lists those properties: (1) that are associated with events that made a significant contribution to the broad patterns of our history, (2) that are associated with the lives of persons significant in our past, (3) that embody the distinctive character of a type, period, or method of construction or that represent the work of a master, or that possess an artistic value, or that represent a significant and distinguishable entity whose components may lack individual distinction, and (4) that have yielded or may be likely to yield information important in prehistory or history.

**Native species:** A plant or animal that is historically indigenous to a specific site area.

**Open space:** An area with few or no paved surfaces or buildings, which may be primarily in its natural state or improved for use as a park.

**Public Resources Code (PRC):** California code addressing natural, cultural, aesthetic, and recreation resources of the State.

**Riparian habitat:** The vegetative and wildlife areas that are adjacent to perennial and intermittent streams and are delineated by the existence of plant species normally found near fresh water.

**Runoff:** That portion of rainfall or surplus water that does not percolate into the ground (flows overland), and is discharged into surface drainages or bodies of water.

**Septic system:** An onsite sewage treatment system that includes a settling tank through which liquid sewage flows and in which solid sewage settles and is decomposed by bacteria in the absences of oxygen. Septic systems are often used where a municipal sewer system is not available.

**Significant effect on the environment:** As defined by State CEQA Guidelines §15382, a substantial or potentially substantial, adverse change on 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 or aesthetic significance. An economic or social change by itself will not be considered a significant effect on the environment. A social or economic change related to physical change may be considered in determining whether the physical change is significant.

**Special-status species:** Plant or animal species that are typically listed (State and federal) as endangered, rare, and threatened, plus those species considered by the scientific community to be deserving of such listing.

**Threatened species:** An animal or plant species that is considered likely to become endangered throughout a significant portion of its range within the foreseeable future because its prospects for survival and reproduction are in jeopardy from one or more causes. The U.S. Fish and Wildlife Service and/or the California Department of Fish and Game make this designation.

**Topography:** Graphic representation of the surface features of a place or region on a map, indicating their relative positions and elevations.

**Trailhead:** The beginning of a trail, usually marked by information signs.

**Viewshed:** The area that can be seen from a specified location.

**Watershed:** The total area above a given point on a watercourse that contributes water to the flow of the watercourse; entire region drained by a watercourse.

**Wetland:** The environment of subtidal, mudflats, tidal salt marsh, periodically inundated or brackish marsh, diked marshland, associated upland, and freshwater marsh.

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# 9 Report Contributors

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# Appendix A

# Reclamation List of Agreements and Previous Plans

The following compilation includes planning documents and legal agreements between the Bureau of Reclamation (Reclamation) and various State agencies and private corporations pursuant to the construction of San Luis Reservoir and related water storage facilities. Documents are categorized by the topical area of subject matter and are further shown chronologically.

## General Planning Documents

Previous planning documents dating from 1962 to 1985 are listed in Table A-1 (see next page) along with a description of planned actions in different sections of the Plan Area.

**Table A-1**
**San Luis Reservoir State Recreation Area Proposed Development by Plan**

| USE AREA | RECREATION LAND USE AND ACQUISITION PLAN[1] (1962) | SAN LUIS RESERVOIR AND FOREBAY RECREATION DEVELOPMENT PLAN[2] (1965) | LOS BANOS CREEK RESERVOIR RECREATION DEVELOPMENT PLAN[3] (REVISED 1969) | LOS BANOS RESERVOIR RECREATION DEVELOPMENT PLAN[4] (1971) | BOATING PLAN, SAN LUIS RESERVOIR STATE RECREATION AREA[5] (1972) | SAN LUIS RESERVOIR STATE RECREATION AREA, GENERAL DEVELOPMENT PLAN[6] (REVISED 1973) | AMENDMENT TO GENERAL PLAN[7] (1985) |
|---|---|---|---|---|---|---|---|
| **General Information** | Recommends acquisition of 13 recreation areas totaling 3,308 acres due to increasing recreational demands (to exceed 4,000,000 visitor-days annually by 2020).<br><br>Of the 3,308 acres, 768 acres would be specifically for recreational purposes. | Plan for recreational development and facilities at Basalt and San Luis Creek Areas. Future development recommended to occur based on demand with continued emphasis on the bulk of day-use facilities located at the forebay and day-use and camping at main reservoir. Future concession areas on the western shore of the main reservoir could be restaurants and motels. Fishing would be allowed and waterfowl hunting possible. | Plan for staged recreational development of Los Banos Creek Reservoir Area. Plan describes initial development and future development for each decade up to 2020 to accommodate estimated use of 425,000 visitor-days annually. Recreation to include swimming, picnicking, fishing, non-power boating, riding, hiking, camping, and possibly some hunting.<br><br>Of the 2,666-acre project area, 760 acres have been set aside for fish and wildlife mitigation. | Plan based on Los Banos Creek Reservoir Recreation Development Plan (Revised 1969) and on a memorandum report prepared by the Department of Fish and Game (March 1967, rev. March 1970).<br><br>Development proposed in 1969 Plan is affirmed and will depend on visitation demands.<br><br>Includes a Department of Fish and Game proposed corrective fish stocking plan and reference to a wildlife conservation plan for the area. | Plan for development of boating facilities including boating capacities and speed limits, and allowable recreational activities. Major water recreational activities of the lake will consist of fishing, pleasure cruising, water-skiing, sailing, and swimming. | Focuses on development of O'Neill Forebay Unit for all-year recreational use. Proposed development includes a pedestrian interchange over SR 152 to connect the O'Neill Forebay and San Luis Reservoir Units, a comprehensive trail system to provide lakeshore access for fishermen and hikers, paved bicycle trails, and a horse trail between the San Luis Reservoir and the Los Banos Reservoir. | Proposes to change the undesignated land use of the northern portion of the O'Neill Forebay Unit to allow day and overnight use of the Meadows and Grant Line Areas. |

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|---|---|---|---|---|---|---|---|
| **San Luis Creek** | • 3 Camping Areas (130 acres total)<br>• 2 Picnic Areas (365 acres)<br>• Beach Area (24 acres)<br>• Boat Launching Area (10 acres)<br>• Concession Areas (20 acres)<br>• Administrative Buildings (6 acres)<br>• Buffer Zone (267 acres) | Picnicking, swimming, group activities, boating and concession facilities (e.g., facilities to dock boats and dispense fuel, fishing tackle, bait) (822 acres) | | | • Boat Launching (3 lanes for day-use area; 4 lanes for boat-in area)<br>• Boat-in Camping Area (100 units)<br>• Swimming Beach<br>• Water Ski Beach | • All-year picnicking, swimming, boat launching, and bank fishing.<br>• Staff Housing and Day-Use Facilities<br>• Parking for cars (642 spaces) and cars with boat trailers (133 spaces)<br>• Access Road (1.5 miles)<br>• Picnic Areas (329 tables and 251 stoves)<br>• 2 Beaches (4 acres each)<br>• Children's Play Areas<br>• Boat Launching Ramp<br>• Lifeguard Tower<br>• Fish Cleaning Table<br>• State Patrol Boathouse<br>• Sanitary Facilities<br>• Utilities<br>• Landscaping | |

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|---|---|---|---|---|---|---|---|
| **Medeiros** | • Picnic Area (130 acres)<br>• Boat Launching Ramp and Parking Area (10 acres)<br>• Beach Area (24 acres)<br>• Concessions (5 acres)<br>• Buffer Zone (61 acres) | | | | • Boat Launching (4 lanes)<br>• Marina<br>• Concessions<br>• Facilities Storage Area<br>• Parking Area | • Existing camping area with temporary picnic facilities<br>• Marina for boat mooring, servicing, and equipment sales<br>• Concessions<br>• Permanent Picnic Facilities<br>• Restaurant and Motel<br>• RV Camping Area with complete utility hookups<br>• Campground without utility hookups also considered | |
| **Basalt** | • Picnic Area (130 acres)<br>• Beach and Boat Launching Areas (45 acres)<br>• Refreshment Stands and Rental Facilities (20 acres)<br>• Three Overlook Areas (15 acres)<br>• Administrative Area (15 acres) | Camping, picnicking, swimming, boating, concession facilities, and an overlook (925 acres) | | | • Boat Launching (3 lanes for area to the west; 9 lanes for area to the east)<br>• Boat-in Day-Use Facilities<br>• Picnic Area with Tables and Stoves<br>• Water Ski Beach<br>• Designated Swimming Beach | • Family Campground (100 units)<br>• Hot water showers<br>• Laundry<br>• Group Campsite<br>• Ranger Residence<br>• Entrance Kiosk<br>• 3 Parking Areas along access road for shoreline access<br>• Recreational Swimming Pool<br>• Access road | |

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|---|---|---|---|---|---|---|---|
| | • Buffer Zones (450 acres)<br>• Camping Area (250 acres) | | | | | connecting existing Boat Launching Ramp and Parking Area for cars with boat trailers (149 spaces) to State Highway. | |
| **Dinosaur Point** | Concession development (camping, refreshment stands, and recreation services) | | | | • Boat Launching (2 lanes)<br>• Boat-in Day-Use Facilities<br>• Boat-in Day-Use Facilities<br>• Picnic Area with Tables and Stoves<br>• Water Ski Beach<br>• Designated Swimming Beach | • Parking Area<br>• Boat Launching<br>• Comfort Station<br>• Concession-operated Facility<br>• Shoreline Trail for riding and hiking to Basalt Area<br>• Staff Housing | |
| **Los Banos Creek** | | | • Family Picnic Areas (20 temporary units, 290 units)<br>• 2 Group Picnic Areas<br>• Family Camping Area (160 units)<br>• 1 Group Camping Area<br>• 2 Beach Areas (3 acres total)<br>• Boat Ramp (2 | Minor changes to specifications in 1966/1969 plan:<br>• 1 or more concessionaires (providing boat rentals, fishing supplies, snacks, groceries and other items)<br>• Access Road<br>• Internal roads | | | |

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|---|---|---|---|---|---|---|---|
| | | | lanes)<br>• Boating Facilities<br>• Concession Area<br>• 15-mile Trail System<br>• 3-acre Pond (plateau above Padre Arroyo Flat)<br>• Equestrian Area on La Plata (plateau above Padre Arroyo Flat)<br>• 4 Vista Points<br>• Amphitheater (La Plata)<br>• 5.5-mile paved access road between SR 152 and entrance kiosk<br>• Internal roads<br>• Parking Areas (605 units)<br>• Utilities<br>• Entrance Kiosk<br>• Temporary Staff Residence Area<br>• Permanent Staff Residence<br>• Sanitary Facilities | • Revised cost estimates for Parking Areas, Utilities, and Temporary Staff Residence area<br>• Amphitheater (La Plata) no longer included | | | |
| **Honker Bay** | Concessions | | | | | • Boat Access | |

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|---|---|---|---|---|---|---|---|
| | providing boat rentals, boat mooring, and other recreational services | | | | | • Picnic Area | |
| **Quien Sabe Point** | • Picnic Area (29 acres)<br>• Buffer Zone (21 acres) | | | | | • Boat Hazard Warning Device<br>• Walk-in day use with access by trail only | |
| **Golden Eye** | • Overnight Camping (79 acres)<br>• Buffer Zones (45 acres) | | | | | • Stop-off Area along riding/hiking trail<br>• Primitive Camping Area<br>• Boat Access not desirable except at full pool | |
| **Harper Lane** | • Camping Area (65 acres)<br>• Buffer Zone (55 acres) | | | | | • Primitive Camping (few sites) | |
| **Coyote Springs** | • Group Camping with Boat Access Only (75 acres)<br>• Buffer Zone (90 acres) | | | | • Boat-in Overnight Use<br>• Camping Area<br>• Swimming Beach<br>• Water Ski Beach | Major Equestrian Camp | |

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|---|---|---|---|---|---|---|---|
| **Whistler Point** | • Group Camping with Boat Access Only (32 acres)<br>• Buffer Zone (38 acres) | | | | • Boat-in Overnight Use<br>• Camping Area<br>• Swimming Beach<br>• Water Ski Beach | Boat and Trail access Camping | |
| **Romero Overlook** | • Views from dam site and reservoir<br>• Parking Area (2 acres) | | | | • Boat Launching (3 lanes)<br>• Boat-in Day-Use Facilities<br>• Boat-in Day-Use Facilities<br>• Picnic Area with Tables and Stoves<br>• Water Ski Beach<br>• Designated Swimming Beach | • Permanent Public Information Building<br>• Boat Hazard Warning Devices | |
| **San Luis Gonzaga** | • Concession-developed trailer park (135 acres)<br>• Buffer Zone (85 acres) | | | | | | |
| **Wolfsen** | • Group Camping Area (54 acres)<br>• Buffer Zone (26 acres) | | | | | | |

**Table A-1**
**San Luis Reservoir State Recreation Area Proposed Development by Plan**

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|---|---|---|---|---|---|---|---|
| **San Luis Pumping Plant and Generating Plant** | | | | | | Existing Visitor Information Room | |
| **State Recreation Area Headquarters** | | | | | | • Existing Administration Building<br>• Existing Storage Yard | |
| **Indian Point** | | | | | | Boat Hazard Warning Device | |
| **Meadows** | | | | | | | • Camping Area (170 sites)<br>• Group Camp Area (25 sites)<br>• Campfire Center<br>• Ramadas<br>• Comfort Stations<br>• Utilities<br>• Landscaping |
| **Grant Line** | | | | | | | • Boat-in day-use<br>• Camping Facilities<br>• Picnic Area (approx. 90 sites)<br>• Ramadas<br>• Courtesy Dock<br>• Group Facilities<br>• Comfort Stations<br>• Beach |

**Table A-1**
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|---|---|---|---|---|---|---|---|
| | | | | | | | Improvements (grading and dredging)<br>• Utilities<br>• Landscaping |
| **Pacheco** | | | | | • Boat-in Overnight Use<br>• Camping Area<br>• Swimming Beach<br>• Water Ski Beach | | |
| **Mijia** | | | | | • Boat-in Overnight Use<br>• Camping Area<br>• Swimming Beach<br>• Water Ski Beach | | |

Sources:
[1] Resources Agency of California, Department of Water Resources. 1962. *Recreation Land Use and Acquisition Plan*. June.
[2] Resources Agency of California, Department of Water Resources. 1965. *San Luis Reservoir and Forebay Recreation Development Plan*. May.
[3] Resources Agency of California, Department of Parks and Recreation, Division of Beaches and Parks. [1966] 1969. *Los Banos Creek Reservoir Recreation Development Plan*. November 1966, Revised December 1969.
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[5] Resources Agency of California, Department of Navigation and Ocean Development. 1972. *Boating Plan, San Luis Reservoir State Recreation Area*. March.
[6] Resources Agency of California, Department of Parks and Recreation, Design & Construction Division. [1971] 1973. *San Luis Reservoir State Recreation Area, General Development Plan*. November 1971, Revised 1973.
[7] Resources Agency of California, Department of Parks and Recreation. 1985. *Amendment to General Plan*. December.

## Recreation-Related Agreements and Reports

**Date Unknown**
**Design Analysis for 1972-1973 Capital Outlay Budget Request, San Luis Reservoir State Recreation Area**
This analysis describes the completion of the third and final phase of the day use area at the San Luis Creek Section of O'Neill Forebay, the 4.5-mile access road from State Route 152 to the existing boat launching ramp in the Basalt Area, a boat hazard warning device for the Romero Overlook and Quien Sabe Point on San Luis Reservoir, and for Indian Point on O' Neill Forebay. Following the description of the project, the analysis provides explanations of the design features of these facilities.

**May 1967**
**San Luis Unit West San Joaquin Division. Detailed Reports on Fish and Wildlife Resources Affected by Pumping and Reservoir Aspects of the Project (Attachments No. 3 and 4).**
Attachment No.3 (May 1, 1967) is a detailed report on the effects that the Los Banos and Little Panoche flood detention reservoirs will have on fish and wildlife.

Attachment No.4 (May 9, 1967) is a detailed report on the effects San Luis Reservoir, O'Neill Forebay, and San Luis Canal will have on fish and wildlife.

Both reports contain assessments of existing fish and wild life environments and populations and estimates of project impacts on fish and wildlife, and both include recommendations to mitigate and minimize impacts.

**April 8, 1969 (Amended July 2, 1982)**
**Agreement between the United States of America and the State of California for the Construction and Operation of the Initial Recreation Facilities of the San Luis Unit (Contract No. 14-06-200-4353A).**
This Agreement provides for the construction and operation of initial recreation facilities at the San Luis Unit. The unit includes San Luis Reservoir, O'Neill Forebay, Los Banos Detention Reservoir, and San Luis Canal. The Agreement defines the initial recreation facilities, the construction of those facilities, and the limit of expenditures for the development of the facilities, $6,700,000 (1982 amendment revised the limit to $7,120,000). The agreement also outlines park limitations and requirements for water use, quality of water, and water pollution control. In addition, the agreement requires the development of an Area Management Plan to maximize the recreation and fish and wildlife enhancement uses in the recreation area.

**July 1982**
**Amendment No. 1 to Agreement between the United States of America and the State of California Dated April 8, 1969 (Contract No. 14-06-200-4353A Amendment No. 1).**
This Amendment acknowledges that the funds provided in the 1969 Agreement are not sufficient to close the construction account for the initial recreation facilities built in

accordance with the Agreement. The first sentence of Article 4(a) of the Agreement was revised and the Agreement was amended such that the United States and the Department will provide $7,120,000 to complete the initial recreation facilities and close the construction account for the San Luis Unit.

**September 1999**
**Management of the California State Water Project, Appendix D: Costs of Recreation and Fish and Wildlife Enhancement (Bulletin 132-96).**
This Report constitutes the Department of Water Resources (DWR) report to the California State Legislature regarding project costs that are allocated to recreation and fish and wildlife enhancement and for acquiring property for recreation development, as required for reimbursement under the Davis-Dolwig Act. An increase of $12,078,995 for recreation and fish and wildlife enhancement is reported, resulting from costs incurred for the 1995 calendar year, additional accrued interest due to an increase in the interest costs of bonds sold, and additional disbursements for joint capital costs allocated to recreation and enhancement. The report details fish and wildlife enhancement costs and includes comments by the Department of Boating and Waterways, the Department, and DFG.

## Letters (Re: Los Banos Creek Reservoir)

**March 15, 1974**
**Letter to Mr. William P. Mott, Jr., Director, Department of Parks and Recreation, from J. Robert Hammond, Assistant Regional Director, Bureau of Reclamation (Attachment No. 5b).**
This letter refers to letters dated January 29, 1974, and February 19, 1974. The letter requests the reply and concurrence of the Department in regard to the plan, which would add the balance of the Los Banos Reservoir area lands to the lands covered by Management Agreement No. 1406-200-4353A and deletes the proposed Santa Nella site below O'Neill Forebay. The letter further requests a reply prior to the San Luis Wildlife Agreement Team meeting (April 17, 1974).

**May 3, 1974**
**Letter to Mr. Robert Hammond, Assistant Regional Director, Bureau of Reclamation, from William Penn Mott, Jr., Director, Department of Parks and Recreation (Attachment No. 5c).**
This letter refers to the proposal whereby the lands at Los Banos Reservoir that were obtained for wildlife mitigation purposes would be added to the lands covered by the Management agreement No. 14-06-2oo-4353A, and which would delete from that agreement the Santa Nella site below O'Neill Forebay. The letter states the Department's approval of the proposal.

**December 13, 1991**
**Letter to Roger K Patterson, Regional Director, Bureau of Reclamation, from Kenneth L Mitchell, Chief, Acquisitions Division, Department of Parks and Recreation (Control No.9 10234 10, Folder I.D.5163).**

This letter refers to additional lands to be added to Contract No. 14-06-200-4353A. The letter states that the enclosed is a signed letter of intent to add the 760 acres of land at Los Banos Reservoir to San Luis Creek SRA under Contract No. 14-06-200-4353A.

**October 28, 1991**
**Letter to State of California Department of Parks and Recreation from Roger K Patterson, Regional Director, Bureau of Reclamation (MP-401, LND-8.00).**
This letter states the intent of Reclamation to revise the Recreation Area at Los Banos Reservoir to be managed by the Department under the terms of Contract No. 14-06-200-4353A. The purpose of this letter is to revise the recreation area for Los Banos Reservoir by adding the former wildlife mitigation area to the recreation area lands at the reservoir.

## Wildlife Agreements and Plans

**December 1973**
**Wildlife Habitat Plan for the California Aqueduct in the San Joaquin Valley Memorandum Report**
This Report, prepared by DWR, San Joaquin District, details the general plan for development of wildlife habitat adjacent to the California Aqueduct in the San Joaquin Valley and the guidelines developed to govern the preparation of future plans to ensure that suitable habitat is provided and safety, operational, and maintenance requirements of the project are satisfied. The Report details the lands subject to possible wildlife habitat development, experiences with test plots, current activities in the areas subject to possible wildlife habitat development operational requirements, plants suitable for habitat development and the general plan for further development In addition, the Report includes several figures detailing the project area and landscape.

**August 16, 1974**
**Agreement among the State of California Department of Water Resources, the State of California Department of Fish and Game, and the U.S. Bureau of Reclamation for the Development, Management, and Maintenance of Wildlife Habitat on Project Lands Adjacent to the California Aqueduct in the San Joaquin Valley.**
This Agreement states that DWR, the Department, and Reclamation agree to the development, management, and maintenance of wildlife habitat on project lands adjacent to the California Aqueduct in the San Joaquin Valley in accordance with the criteria, guide lines, and general wildlife habitat development plan set forth in the DWR memorandum report entitled, "Wildlife Habitat Plan for the California Aqueduct in the San Joaquin Valley," dated December 1973. The Agreement further states that DFG, in the case that contract labor is required, agrees to incorporate the "Work Hours Standards Act Provision" and any other required articles, and "that any work, requiring funding is contingent upon appropriation or allotment of those funds and no official will be allowed to benefit from the project".

**March 3, 1976**
**Agreement Among the United States of America, the Department of Fish and Game of the State of California, and the Department of Water Resources of the State of California for the Administration and Operation of Wildlife Lands at San Luis Reservoir, O'Neill Forebay, and Utile Panoche Reservoir (Contract No. 14-06-200-7451A).**

This Agreement is a 50-year agreement between the United States, DFG, and DWR with the purpose of providing the basis for protecting, preserving, or replacing pre-project wildlife populations at San Luis Reservoir, Los Banos Reservoir, and Little Panoche Reservoir. Under the terms of the Agreement, DFG is authorized to exercise limited control of certain lands of the San Luis facilities for wildlife purposes defined under Article *2(e)*. The administration and operation provisions detail the substitution of lands in the General Plan: DFG's authority and responsibility; the Development, Operation, and Maintenance Plans for lands at the San Luis Reservoir, O'Neill Forebay, and Little Panoche Reservoir, supply, use, and measure of water, financial provisions, and general provisions. Included in the Agreement are the construction schedule and figures detailing the affected areas.

## Transportation and Utilities Agency Agreements

### California Department of Transportation

**October 12, 1956**
**Contract and Grants of Easements Covering Crossings of State of California Highway Facilities and Features of Central Valley Project.**
This Agreement between the Reclamation and the State of California allows both parties perpetual joint use of areas within the right of way of either party at each of the crossings of the parties' respective facilities, The Agreement details the provisions and limitations of joint use of common areas, as well as the areas subject to the agreement at the time it was written. Finally, included in attachment to the Agreement are several resolutions passed by affected irrigation and utilities districts, all of which approve the Agreement.

**June 21, 1968**
**Contract for Box Culvert Construction and Joint Use of Right of Way of Highway Route 152 (10 Mer 152) San Luis Drain. Central Valley Project, San Luis Unit (U.S. Contract No. 14-06-2003765A).**
This Agreement between Reclamation and the State allows Reclamation to construct, operate, and maintain the San Luis Drain where it crosses land previously acquired by the State for the Right of Way for State Highway Route 152 (10 Mar 152). Furthermore, the Agreement states that the State will coordinate the construction of the affected section of the San Luis Drain, for which it will be fully reimbursed by right-of-way. The Agreement details the affected area and construction schedule and payment/reimbursement provisions.

**Pacific Gas & Electric**

**February 8, 1951**
**Contract for Relocation of Certain Facilities of Pacific Gas and Electric Company and for Crossings of Right of Ways. United States Department of the Interior, Bureau of Reclamation. Central Valley Project, California (U.S. Symbol and No. 175r-2602).**
This Agreement between Reclamation and PG&E states that PG& E will allow Reclamation the use of land in its right of way, and furthermore will relocate existing facilities, when requested by Reclamation, out of necessity for facilities associated with the Central Valley Project. The Agreement details the conditions under which Reclamation can request right of way, the details of right of way transfer, the responsibility for operations and maintenance following right of way transfer and facility construction, and all provisions for payment.

**April 24, 1953**
**Supplement to Contract for Relocation of Certain Facilities of Pacific Gas and Electric Company and for Crossings of Rights of Way (U.S, Symbol and No. I75r-2606).**
This Supplement expands the list of facilities covered under the previous agreement to include Folsom Power Plant, Nimbus Dam and Reservoir, the Folsom-Elverta 230kV transmission line, the Folsom-Nimbus interconnecting lines and access road, and the water distribution and lateral systems of respectively, the Madera Canal, the Contra Costa Canal, and the Delta-Mendota Canal.

**December 23, 1953**
**Second Supplement to Contract for Relocation of Certain Facilities of Pacific Gas and Electric Company and for Crossings of Rights of Way (U.S. Symbol and No. I75r-2602).**
This Supplement expands the list of facilities covered under the previous agreement and supplement to include the Sacramento Canals Unit of the Central Valley Project and the Solano Project of the United States.

**May 1, 1957**
**Third Supplement to Contract for Relocation of Certain Facilities of Pacific Gas and Electric Company and for Crossings of Rights of Way (U.S. Symbol and No. 175r-2602).**
This Supplement expands the list of facilities covered under the previous agreement and supplements and expands the nondiscrimination protections previously placed on hiring and employment. Finally, this supplement adds requirements governing working hours and conditions.

**October 13, 1960**
**Fourth Supplement to Contract for Relocation of Certain Facilities of Pacific Gas and Electric Company and for Crossings of Rights of Way (U.S. Symbol and No. I75r-2602).**

This Supplement expands the list of facilities covered under the previous agreement and supplements, and it updates the provisions of paragraph 12, Grant of License or Consent.

**February 21, 1963**
**Fifth Supplement to Contract for Relocation of Certain Facilities of Pacific Gas and Electric Company and for Crossings of Rights of Way (U.S. Symbol and No. I75r-2602).**
This Supplement expands the list of facilities covered under the previous agreement and supplements, and it expands the nondiscrimination protections placed on hiring and employment

**October 10, 1966**
**Sixth Supplement to Contract for Relocation of Certain Facilities of Pacific Gas and Electric Company and for Crossings of Rights of Way (U.S. Symbol and No. I75r-2602).**
This Supplement expands the list of facilities covered under the previous agreement and supplements, and it expands the nondiscrimination protections placed on hiring and employment.

**March 24, 1976**
**Seventh Supplement to Contract for Relocation of Certain Facilities of Pacific Gas and Electric Company and for Crossings of Rights of Way (U.S. Symbol and No. 175r-2602).**
This Supplement expands the list of facilities covered under the previous agreement and supplements, the nondiscrimination protections placed on hiring and employment, and the restrictions governing working hours and conditions.

**Standard Oil**

**March 1, 1947**
**Contract for Protection, Alternation, Re-arrangement, and/or Relocation of Certain Facilities of Standard Oil Company of California (175r1328).**
This Agreement between Reclamation and the Standard Oil Company of California states that Standard Oil will allow Reclamation the use of land in its right of way and furthermore will relocate existing facilities, when requested by Reclamation out of necessity for facilities associated with specified projects under the Central Valley Project The Agreement states that Reclamation will attempt to avoid all disruption to Standard Oil pipelines: in the case that disruption is necessary, Reclamation will permit Standard Oil to lay temporary pipelines to provide service during interruptions. The Agreement also details the payment of costs and expenses, rights of way and consent for joint rights of way, conveyance of relocated rights of way, and general terms of the agreement.

**March 17, 1948**
**Resolution by the Standard Oil Company of America.**
This Resolution states that the President, any Vice President, Treasurer, or CE. Bultman (contract agent), together with the Secretary or Assistant Secretary, is empowered to execute all papers required by Standard Oil. Exempted are oil leases to others covering fee lands and deeds conveying real estate other than rights of way and similar easements.

**April 26, 1951**
**Amendment of Contract for Protection, Alteration, Rearrangement, and/or Relocation of Certain Facilities of Standard Oil Company of California (175r1328).**
This Amendment expands the list of projects covered under the previous agreement (Paragraph 2) to include other features of the Central Valley Project expands the provisions of "Right of Way or Consent to Joint Use of Right of Way" (Paragraph 13); and expands the Agreement's protections against benefit by Delegates and Commissioners through projects resulting from the Agreement.

**May 10, 1951**
**Resolution by the Standard Oil Company of California.**
This Resolution states that the President, any Vice President, Treasurer, or CEO Bultman (contract agent), together with the Secretary or Assistant Secretary, is empowered to execute all papers required by Standard Oil. Exempted are oil leases to others covering fee lands and deeds conveying real estate other than rights of way and similar easements. This resolution reaffirms the resolution made March 17, 1948.

**September 25, 1962**
**Third Amendment of Contract for Protection, Alteration, Rearrangement, and/or Relocation of Certain Facilities of Standard Oil Company of California (175r1328).**
This Amendment expands the list of facilities covered under the previous amendment (Paragraph 2), expands protections against covenant fees (Paragraph 15), expands the conditions requiring appropriation of funds (Paragraph 16), and expands protections ensuring nondiscrimination in employment (Paragraph 18).

**December 14, 1962**
**Resolution by the Standard Oil Company of California.**
This Resolution states that the President, any Vice President, Treasurer, or CEO Bultman (contract agent), together with the Secretary or Assistant Secretary, is empowered to execute all papers required by Standard Oil. Exempted are oil leases to others covering fee lands and deeds conveying real estate other than rights of way and similar easements. This resolution reaffirms the resolution made March 23, 1961.

**August 28, 1963**
**Consent to Crossing by an Electrical Transmission Line over Facilities of Standard Oil Company of California.**
This Agreement details the consent by Standard Oil to allow Reclamation to construct and perpetually operate and maintain an electric transmission line through its right of way in Contra Costa County, California. Consent is subject to the condition that the United

States may not interfere with the operations of Standard Oil as they are now conducted and may not place any pole or tower or footing on Standard Oil right of way.

**January 9, 1968**
**Easement to Standard Oil Company of California.**
This Indenture provides Standard Oil with rights of way for pipeline relocated during construction of features of the San Luis Unit (San Luis Canal) by the United States. This document details the easement in Merced County to be granted to Standard Oil, the acceptable future uses by Standard Oil, and the conditions of use and transfer.

**January 9, 1968**
**Perpetual License for Joint Use of Right of Way.**
This document grants the United States a license for construction and perpetual operation and maintenance of the San Luis Canal on a parcel of land owned by Standard Oil, detailed in the document. This license is granted by Standard Oil under provisions of the Contract for Protection, Alteration, Rearrangement, and/or Relocation of Certain Facilities of Standard Oil Company of California (March 1, 1947).

**January 9, 1968**
**Quitclaim Deed.**
This document releases, remises, and quitclaims to Reclamation the right, title, and interest as granted to Standard Oil Company and Standard Gasoline Company. The document further details the parcel of land in question.

**August 29, 1968**
**Easement to Standard Oil Company of California.**
This Indenture provides Standard Oil with rights of way for pipe line relocated during construction of features of the San Luis Unit (San Luis Canal) by Reclamation. This document details the easement in Merced County to be granted to Standard Oil, the acceptable future uses by Standard Oil, and the conditions of use and transfer.

**August 9, 1968**
**Perpetual License for Joint Use of Right of Way.**
This document grants the United States a license for construction and perpetual operation and maintenance of the San Luis Canal on a parcel of land owned by Standard Oil, detailed in the document. This license is granted by Standard Oil under provisions of the Contract for Protection, Alteration, Rearrangement, and/or Relocation of Certain Facilities of Standard Oil Company of California (March 1, 1947).

**August 29, 1968**
**Quitclaim Deed.**
This document releases, remises, and quitclaims to the United States the right, title, and interest as granted to Standard Oil Company and Standard Gasoline Company. The document further details the parcel of land in question.

**Miscellaneous Agreements**

**December 11, 1984**
**Agreement for Temporary Water Service, Transportation, and Utilization to Provide Wildlife Habitat Related to the San Luis Drain.**
This agreement between the State, Reclamation and U.S. Fish and Wildlife Service made water temporarily available to be used to manage and maintain waterfowl habitat and grassland in the San Joaquin Basin.

## Operations and Maintenance Agreements and Reports

**January 12, 1972 (Amended September 4, 1991)**
**Supplemental Agreement between the United States of America and State of California for the Operation of the San Luis Unit (Supplement No. 1).**
This agreement is a supplement to the original agreement of December 30, 1961, between the two parties, which provides that the State shall operate and maintain the San Luis Unit facilities, but leaves for future agreement, details relating to operation and maintenance. This supplemental agreement provides those details concerning operation and maintenance of O'Neill Forebay, San Luis Reservoir, Dos Amigos Pumping Plant, San Luis Canal, and detention dams and associated reservoirs. The agreement also identifies "operational requirements associated with power supply and generation; exchange of water, power, and capacities; reactive power; state operation of federal-only facilities; emergencies; federal participation in operation, maintenance, and replacement; water measurement responsibilities, water quality responsibilities and monitoring; power measurement responsibilities; federal water contractors; replacement water and mitigation responsibilities; visitor accommodations; various costs; and employment." The 1991 amendment revised Sub-article 25(b) in the agreement.

**September 4, 1991**
**Amendment No. I to the Supplemental Agreement Between the United States of America and the Department of Water Resources of the State of California for the Operation of the San Luis Unit (Supplement No.1).**
This Amendment revises a sub-article of the prior Agreement, while otherwise continuing the agreement "in full force and effect." Specifically, this Amendment revises Sub-article 25(b) of the Agreement by deleting "and (4) into the Coalinga Canal" and by adding "and" prior to (3) in that sub-article.

**March 19, 1996**
**Concession Contract. Cattle Grazing. Located at San Luis Reservoir State Recreation Area. Medeiros Area in Merced County.**
This is a legal contract between the State and Chet Vogt, granting Mr. Vogt the right, privilege, and duty to graze cattle on an approximately 1,000-acre tract of the Medeiros Area located south of O'Neill Forebay, for a period of 8 months. Attached to the contract is a CEQA project evaluation.

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# Appendix B

# Biological Survey Forms and Project Area Vegetation

## Biological Survey Forms

The following forms are from reconnaissance-level field surveys by EDAW in September 2002 and June 2003.

San Luis Reservoir State Recreation Area
Survey Form

**Date:** September 12, 2002 **Surveyors:** Leo Edson, Linda Leeman

**Park:** ☐ Pacheco SP ☐ SLR ☒ LBC ☐ other:

**Survey location:** Los Banos Reservoir

**Weather**
Time: 1020
Air Temp: 80º
Wind Speed: Ø
Cloud Cover: Ø

**Water feature type:** ☐ stockpond ☐ intermittent drainage ☐ perennial stream ☐ lacustrine ☒ other: Artifical wetland (overflow/leakage from dam)

**Map ID #:** LB-1 **Photo #:** Ø

**Vegetation Adjacent to Water Feature**
☒ grassland ☐ oak woodland ☒ riparian woodland (circle dominant trees: willow, cottonwood, sycamore, mixed)
☐ freshwater marsh ☐ vernal pool ☐ other:
**Notes:** mulefat

**Site Quality**
**Degradation ?** ☐ Yes ☒ No **Evidence of cattle?** ☐ Yes ☒ No **Evidence of pigs?** ☐ Yes ☒ No
**Grazing?** ☐ Severe ☐ Moderate ☒ None **Weed infestation?** ☐ Yes ☒ No **Species:**
**Notes:**

**Special-status Amphibians/Reptiles**

**Foothill Yellow-legged Frog**
Observed during survey? ☐ Yes ☒ No If yes, number of individuals: Size class observed:
Suitable habitat present? ☐ Yes ☒ No *Cobble?* ☐ Yes ☒ No *Shallow, flowing water?* ☐ Yes ☒ No

**California Red-legged Frog**
Observed during survey? ☐ Yes ☒ No If yes, number of individuals: Size class observed:
Suitable habitat present? ☒ Yes ☐ No *Slow water?* ☒ Yes ☐ No *Permanent water in area?* ☒ Yes ☐ No
*Riparian veg* ☒ Yes ☐ No *Submergent or emergent veg?* ☒ Yes ☐ No

**California Tiger Salamander**
Suitable habitat present? ☐ Yes ☒ No *Temp. pools?* ☐ Yes ☒ No *Fish present?* ☒ Yes ☐ No

**Western Spadefoot**
Suitable habitat present? ☐ Yes ☒ No *Temp. pools?* ☐ Yes ☒ No *Fish present?* ☒ Yes ☐ No

**Western Pond Turtle**
Observed during survey? ☐ Yes ☒ No If yes, number of individuals: Size class observed:
Suitable habitat present? ☒ Yes ☐ No *Slow water?* ☒ Yes ☐ No *Basking sites?* ☒ Yes ☐ No

**Other wildlife observations/comments:** Bass observed in pond.

San Luis Reservoir SRA B-1
Resource Management Plan/Preliminary General Plan

# San Luis Reservoir State Recreation Area
Survey Form

**Date:** 8 June 2003 **Surveyors:** Edson

**Park:** ☐ Pacheco SP ☒ SLR ☐ LBC ☐ other: _____

**Survey location:** Medeiros use area located on the south shore of the O'Neill Forebay

**Water feature type:** ☐ stockpond ☐ intermittent drainage ☐ perennial stream ☐ lacustrine ☐ other: N/A

**Weather**
Time: _____
Air Temp: _____
Wind Speed: _____
Cloud Cover: _____

**Map ID #:** SL-1 **Photo #:** _____

## Vegetation Adjacent to Water Feature

☒ grassland ☐ oak woodland ☐ riparian woodland (circle dominant trees: willow, cottonwood, sycamore, mixed)
☐ freshwater marsh ☐ vernal pool ☐ other: _____

**Notes:** An adult Swainson's hawk was observed perched on a fence post approximately ¼-mile south of the forebay shoreline.

## Site Quality

**Degradation ?** ☒ Yes ☐ No **Evidence of cattle?** ☒ Yes ☐ No **Evidence of pigs?** ☐ Yes ☒ No
**Grazing?** ☐ Severe ☒ Moderate ☐ None **Weed infestation?** ☐ Yes ☒ No **Species:** _____

**Notes:** Grazing activity limited to the area south of the Mediros use area.

## Special-status Amphibians/Reptiles

**Foothill Yellow-legged Frog**
Observed during survey? ☐ Yes ☐ No If yes, number of individuals:_____ Size class observed:_____
Suitable habitat present? ☐ Yes ☐ No *Cobble?* ☐ Yes ☐ No *Shallow, flowing water?* ☐ Yes ☐ No

**California Red-legged Frog**
Observed during survey? ☐ Yes ☐ No If yes, number of individuals:_____ Size class observed:_____
Suitable habitat present? ☐ Yes ☐ No *Slow water?* ☐ Yes ☐ No *Permanent water in area?* ☐ Yes ☐ No
*Riparian veg* ☐ Yes ☐ No *Submergent or emergent veg?* ☐ Yes ☐ No

**California Tiger Salamander**
Suitable habitat present? ☐ Yes ☐ No *Temp. pools?* ☐ Yes ☐ No *Fish present?* ☐ Yes ☐ No

**Western Spadefoot**
Suitable habitat present? ☐ Yes ☐ No *Temp. pools?* ☐ Yes ☐ No *Fish present?* ☐ Yes ☐ No

**Western Pond Turtle**
Observed during survey? ☐ Yes ☐ No If yes, number of individuals:_____ Size class observed:_____
Suitable habitat present? ☐ Yes ☐ No *Slow water?* ☐ Yes ☐ No *Basking sites?* ☐ Yes ☐ No

**Other wildlife observations/comments:** This was the only Swainson's hawk observed at Medeiros. At least one Swainson's hawk was also observed at O'Neill Forebay, where they have been documented as nesting in previous years.

B-2 *San Luis Reservoir SRA*
*Resource Management Plan/Preliminary General Plan*

## San Luis Reservoir State Recreation Area
Survey Form

**Date:** 8 June 2003 **Surveyors:** Edson

**Park:** ☐ Pacheco SP ☒ SLR ☐ LBC ☐ other: _____

**Survey location:** Medeiros use area located on the south shore of the O'Neill Forebay

**Weather**
Time: _____
Air Temp: _____
Wind Speed: _____
Cloud Cover: _____

**Water feature type:** ☐ stockpond ☐ intermittent drainage ☐ perennial stream ☒ lacustrine ☐ other: _____

**Map ID #:** SL-2 **Photo #:** _____

### Vegetation Adjacent to Water Feature
☐ grassland ☐ oak woodland ☒ riparian woodland (circle dominant trees: willow, cottonwood, sycamore, mixed)
☒ freshwater marsh ☐ vernal pool ☐ other: _____
**Notes:** The shoreline has a nearly contiguous, narrow band of willows. Patches of emergent vegetation (dominated by cattails and tules) are present at several locations. The only large area of emergent vegetation at Medeiros is found in a large depression, possibly artificial, that is located adjacent to the forebay and just east of the overhead transmission lines.

### Site Quality
**Degradation ?** ☒ Yes ☐ No **Evidence of cattle?** ☐ Yes ☒ No **Evidence of pigs?** ☐ Yes ☒ No
**Grazing?** ☐ Severe ☐ Moderate ☒ None **Weed infestation?** ☐ Yes ☒ No **Species:** _____
**Notes:** Degradation limited to roads and vegetation management activities.

### Special-status Amphibians/Reptiles
**Foothill Yellow-legged Frog**
Observed during survey? ☐ Yes ☐ No If yes, number of individuals:_____ Size class observed:_____
Suitable habitat present? ☐ Yes ☐ No *Cobble?* ☐ Yes ☐ No *Shallow, flowing water?* ☐ Yes ☐ No

**California Red-legged Frog**
Observed during survey? ☐ Yes ☐ No If yes, number of individuals:_____ Size class observed:_____
Suitable habitat present? ☐ Yes ☐ No *Slow water?* ☐ Yes ☐ No *Permanent water in area?* ☐ Yes ☐ No
*Riparian veg* ☐ Yes ☐ No *Submergent or emergent veg?* ☐ Yes ☐ No

**California Tiger Salamander**
Suitable habitat present? ☐ Yes ☐ No *Temp. pools?* ☐ Yes ☐ No *Fish present?* ☐ Yes ☐ No

**Western Spadefoot**
Suitable habitat present? ☐ Yes ☐ No *Temp. pools?* ☐ Yes ☐ No *Fish present?* ☐ Yes ☐ No

**Western Pond Turtle**
Observed during survey? ☐ Yes ☐ No If yes, number of individuals:_____ Size class observed:_____
Suitable habitat present? ☐ Yes ☐ No *Slow water?* ☐ Yes ☐ No *Basking sites?* ☐ Yes ☐ No

**Other wildlife observations/comments:**

Approximately 1,000 tricolored blackbirds observed during this one-day survey. Most were found in groups of 50+ forging along the shoreline or perched in the cottonwoods and willows. Approximately 200 were found nesting in the depression described above. Many fledging were observed in the willows surrounding the depression. Adults retuning with food to the emergent marsh indicated that some of the nestling had not yet fledged their nests.

## Project Area Vegetation

The following describes the vegetation of San Luis Reservoir State Recreation Area and the DFG-managed wildlife areas. These areas include land around San Luis Reservoir, the O'Neill Forebay, Los Banos Reservoir and the San Luis and O'Neill Forebay Wildlife Areas. The vegetation of these areas consists of riparian woodland, blue oak woodland and savanna, coast live oak woodland, ornamental trees, California sagebrush scrub, grasslands, mesic herbaceous (wetland), iodine bush scrub (alkali sink scrub), and ruderal (non-native and weedy) plant communities, The grassland is the dominant vegetation of the park with the only woodland observed outside park boundaries on distant hills. The riparian woodland and mesic herbaceous types occur at the edge of the reservoirs and along watercourses, The iodine bush scrub occurs at Salt Spring, a tributary to Los Banos Reservoir. Where appropriate, the naming system used in *A Manual of California Vegetation* (Sawyer and Keeler-Wolf 1995), was incorporated into the name of the vegetation types in this report.

**Black Willow Riparian Woodland**
Black willow riparian woodland occurs at the edges of San Luis Reservoir, Los Banos Reservoir, and O'Neill Forebay; along watercourses but below the level of high water at San Luis Reservoir; and along Los Banos Creek as it flows into Los Banos Reservoir. It also occurs at O'Neill Forebay Wildlife Area. The black willow riparian woodland is particularly well developed along Los Banos Creek immediately upstream from Los Banos Reservoir. It consists of black willow trees *(Salix gooding11)* trees, which are 8 to 12 inches in diameter at breastheight (4.5 feet, dbh) and up to 40 feet tall. The trees grow from 6 to 10 feet apart with a canopy cover that varies from 60 to 100 percent.

The shrub understory consists of mulefat *(Baccharis sp.)* and a few salt cedar plants *(Tamarisksp.).* Herbaceous species in the understory are dominated by crabgrass *(Cynodon dactylon)*, cocklebur *(Xantium strumarium),* and Italian thistle *(Carduus pycnocephalus),* Below the high water mark of San Luis Reservoir, black willow riparian scrub occurs in watercourses. The willow trees are able to survive inundation during years of normal rainfall and years of drought. These willows are able to persist from upstream runoff flowing in the watercourses for at least part of the spring and summer. The trees are typically 3 to 6 inches in diameter and 20 feet tall. During wet winters, the reservoir remains full for a long duration and the willow trees die because they cannot survive such prolonged inundation. This vegetation is generally thick, with 100 percent cover, but is narrow in width.

The riparian vegetation at the edge of the shore of the reservoirs includes a mixture of black willow, Fremont cottonwood *(Populus Fremont 11),* western sycamore *(Platanus racemosa),* sandbar willow *(Salix exigua),* and mulefat. These species grow mostly sparsely along the edge of the shore of the reservoirs, but occasionally they will grow in clumps. The understory of these areas consists of mesic herbaceous vegetation. In some areas, broad-leaf pepper-grass *(Lepidtum latifoltum)* occurs beneath or at the edge of the canopy ofthe riparian trees.

**California Sycamore Riparian Woodland**
The California sycamore riparian woodland occurs in a limited area along one of the watercourses at San Luis Wildlife Area This woodland consists of mature western sycamore trees growing in a sparse array along the watercourse. Canopy cover approximates 70 percent. The sycamores grow to 40 feet tall and at least 24 inches in diameter at breastheight (4.5 feet, dbh). The understory consists of coyote brush *(Bacharis pilularis)* and poison oak *(Toxicodendron diversilobum).*

**Blue Oak Woodland and Savanna**
The blue oak woodland and savanna occurs in San Luis W ildlife Area. Blue oak *(Quercus douglas11)* is the dominant tree of this woodland. An occasional coast live oak *(Quercus agnfo/ia)* also occurs in the blue oak woodland. The blue oak woodland occurs on the tops and sides of the ridges in small clumps. This cover of the blue oak woodland ranges from 80 to approximately 20 percent. Nevertheless, the blue oak woodland also grades into the blue oak and savanna vegetation type, which consists of a sparse cover of trees growing within grassland.

The understory of the blue oak woodland mostly consists of various species of non-native grasses and occasional native species of forbs (non-grassy plants). The non-native species of grass include wild oats *(Avena fatua)* and ripgut brome *(Bromus diandrus).* Blue dicks *(Dichelostemma capitatum)* and clarkia *(Clarkia* sp.) also occur in the understory. Understory shrubs include California sagebrush *(Artemesia californica),* redberry *(Rhamnus crocea),* and eriophyllum *(Enophyllum confertiflorum).*

**Coast Live Oak Woodland**
The coast live oak woodland occurs in San Luis Wildlife Area. It consists of both blue and coast live oak tree s with California bay *(Umbellularia californica),* valley oak *(Quercus lobata)* , and California buckeye *(Aesculus californica).* Stands of this woodland type are generally not very large and occur in the canyon bottoms and on the shadier slopes. This oak woodland is very similar to the blue oak woodland except that the blue oaks are much fewer.

The understory of the coast live oak woodland tends to support shrubs and forbs as opposed to grass. Species present in the understory include woodland sanicle *(Sanicula crassicaule),* blue wildrye *(Elymus g/aucus),* miner's lettuce *(Claytonia perfoliata),* fiesta flower *(Pholistoma auritum),* chickweed *(Stellaria media),* sweet pea *(Lathyrus* sp.), and bedstraw *(Ga/ium apairne).* Shrubs that occur in the understory are poison oak, toyon *(Heteromeles arbutifolia),* and redberry.

**Ornamental Trees**
Ornamental trees have been planted at the Basalt Campground, on the Madeiros site, and the picnic areas of the San Luis Creek site. These trees include red ironbark gum *(Eucalyptus sidiroxylon),* allepo pine *(Pinus halpensis),* false pine *(Casurina* sp.), Chinese pistache *(Pistachia chlnensls),* eucalyptus *(Eucalyptus* spp.), and others. The trees at Madieros are planted in a rectangular array, while those in the other areas conform to picnic tables or campsites.

**Iodine Bush Scrub**
Iodine bush scrub occurs at Salt Spring, a tributary to Los Banos Reservoir. This area is very distinctive because of the presence of water and the pronounced salt deposits along the banks of the watercourse. The vegetation occurs within the banks of the watercourse at Salt Spring. This vegetation is dominated by iodine bush *(Allenrolfea occidentalis),* quail bush *(Atriplex lentiforms),* alkali heath *(Frankenia salina),* and salt grass *(Distichlis spicata).* Other species present include bassia *(Bassia hyssopifolia),* Fitch's spikeweed *(Hemizonia fitch11)* , and various species of saltbushes *(Atriplex* spp.).

**California Sagebrush Scrub**
California sagebrush scrub occurs on the shallow soils of hillsides above Los Banos Reservoir and Los banos Creek in dry areas. It is dominated by California sagebrush *(Artemisia californica)* and California buckwheat *(Enogonum fasciculatum).* The cover of the California sagebrush scrub

varies between 25 and 50 percent and the height of the vegetation is generally less than 3 feet. The understory of the California sagebrush scrub mainly consists of grassland growing between the shrubs. The area beneath the shrubs is bare.

**Mesic Herbaceous**

Mesic herbaceous vegetation occurs in seeps, within watercourses, and at the edges of the reservoirs. It consists of species adapted to seasonally, as well as permanently, wet conditions. This mesic herbaceous vegetation consists of tall vegetation such as cattails and tules to short vegetation such as crabgrass and knotgrass *(Paspalum distichum).* The cattails *(Typha latifolia* and unidentified species) and tules *(Scirpus acutus* spp. *occidentalis)* grow in extensive patches along the edges of the reservoirs within standing water. These stands can be small patches 10 by 20 feet in size to several hundred feet long and 30 feet wide. Often water parsley *(Oenanthe sarmentosa)* and water smartweed *(Polygonum pundatum)* occur with the cattails and tules.

Mexican rush *Juncus mexicanus)* commonly occurs at the edges of the reservoirs above the reservoir's edge. The iris-leaved rush *(Juncus xiphioides)* also occurs in watercourses, and seeps. The rushes often grow as dense mats of single species stands. Meadow barley *(Hordeum brachyantherum)* and creeping wildrye *(Leymus triticoides)* are adapted to drier conditions than the iris-leaved rush and grow at the edge of seeps and other wet areas.

Cocklebur often grows in dense aggregations at the areas where watercourses flow into stock ponds, and spiny clot-bur *(Xantium spinosum)* occurs in low-density aggregations within drawdown and disturbed areas.

Seeps and watercourses often support water cress *(Rorippa nasturtium-aquaticum)* growing in areas of ponded water. Rabbit's foot grass *(Polypogon monspeliense)* and curly dock *(Rumex crispus)* also grow in wet areas onsite.

**Grassland**

The grassland vegetation type occurs extensively throughout the areas surrounding San Luis and Los Banos reservoirs and O'Neill Forebay. This grassland varies in height from a few inches and 25 to 50 percent cover in sites with shallow soils, to 1.5 feet and I00 percent cover in the sites with deeper soils.

Different species dominate the grassland in different areas. The occurrence of a particular species as a dominant may be the result of particular edaphic, climatic, and moisture conditions. Most of the dominants are non-native species but purple needlegrass *(Nasella pulehra),* a native species, occurs throughout the park in various densities. It occasionally grows as a dominant on the slopes of San Luis and Los Banos reservoirs. The other dominants include ripgut brome, hare barley *(Hordeum murinum* ssp. *leporinum),* wild oats *(Avena* sp.), and Italian ryegrass *(Loltum multif!orum),* Various species of tarweeds also occur in various densities ranging from low to high in the grassland. They also occur as dominant or subdominant species of small areas. The species of tarweeds are Fitch's spikeweed, common spikeweed *(Hemizonia pungens),* and San Joaquin tarweed *(Holoearpha obeoniea).* Big tarweed *(Blepharizonia plumosa* ssp, *viscida)* occasionally occurs in the grassland and vinegar weed *(Trichostemma lanceo/atum)* often occurs as a subdominant in the grassland.

Some portions of the grassland are dominated by native species of grass. Often these native areas are correlated with sloping areas and shallow soil. Natives such as pine bluegrass often grow beside the California sagebrush scrub on the slopes of Los Banos Reservoir. Creeping wildrye, a native species, can dominate moist areas.

**Ruderal**
Ruderal vegetation consists of non-native species of plants. It is commonly associated with herbaceous species but the non-native salt cedar will also be discussed here. The ruderal vegetation occurs in disturbed areas such as campground and picnic areas, It also occurs at the edge of the reservoirs.

**Herbaceous Species.** The most common ruderal species are broad-leaved pepper-grass, cocklebur, spiny clot-bur, yellow star-thistle *(Centaurea solstitialis)*, Italian thistle *(Carduus pycnoeephalus)*, bristly ox-tongue *(Picris echiodes)*, and short-pod mustard *(Hirsehfeldia incana)*. The broad- leaved pepper-grass, cocklebur, spiny clot-bur, and bristly ox-tongue occur within or at the edge of wet lands, often at the edge of the reservoirs. Yellow star-thistle, Italian thistle, and short-pod mustard occur in drier areas.

**Woody Species.** Salt cedar grows abundantly at Los Banos Reservoir often in dense thickets at the edge of the reservoir and often adjacent to the riparian vegetation. It also occurs as an occasional plant in the black willow riparian woodland along Los Banos Creek Two individual salt cedar plants were observed along the shore of O'Neill Forebay.

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# Appendix C

# Public Involvement Program

## Bureau of Reclamation Notice of Intent

Federal Register / Vol. 68, No. 26 / Friday, February 7, 2003 / Notices 6509

and available for public review by late 2003.

Additional information about the study/EIS may be obtained from the National Park Service Boston Support Office, 15 State Street, Boston, Massachusetts 02109, Barbara Mackey, Team Captain, at telephone 617–223–5138 or *Barbara_Mackey@nps.gov*.

Dated: December 11, 2002.

**Lawrence Gall,**

*Acting Superintendent, Boston Support Office.*

[FR Doc. 03–3097 Filed 2–6–03; 8:45 am]

BILLING CODE 4310–70–P

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**DEPARTMENT OF THE INTERIOR**

**Bureau of Reclamation**

**San Luis Reservoir and Los Banos Creek State Recreation Area Joint General Plan and Resource Management Plan, Merced County, CA**

**AGENCY:** Bureau of Reclamation, Interior.

**ACTION:** Notice of intent to prepare a programmatic environmental impact statement/environmental impact report (PEIS/EIR).

**SUMMARY:** Pursuant to section 102(2)(c) of the National Environmental Policy Act (NEPA), the Bureau of Reclamation, in cooperation with the California Department of Parks and Recreation (DPR), proposes to prepare a draft PEIS/EIR for the San Luis Reservoir and Los Banos Creek State Recreation Area (SRA) joint General Plan and Resource Management Plan (GP/RMP). Scoping meetings are being conducted to elicit comments on the scope and issues to be addressed in the draft PEIS/EIR. The dates and times for the meetings are noted below.

**DATES:** The first scoping meeting was held on Saturday, January 11, 2003, from 10 a.m. to 2 p.m. in Gustine, California. The second scoping meeting will be held on Thursday, February 20, 2003, from 1 p.m. to 3 p.m. in Gustine, California.

Written comments should be sent to Reclamation at the address below by March 10, 2003.

**ADDRESSES:** The meeting location is at the California Department of Parks and Recreation, Four Rivers District Office, 31426 Gonzaga Road, Gustine, CA, 95322.

Written comments should be sent to Mr. Dan Holsapple, Bureau of Reclamation, South-Central California Area Office, 1243 N Street, Fresno, CA 93721–1813; or faxed to 559–487–5130 (TDD 559–487–5933); or e-mail: *dholsapple@mp.usbr.gov*.

**FOR FURTHER INFORMATION CONTACT:** Mr. Dan Holsapple, Bureau of Reclamation, at the above address, telephone: 559–487–5409; or Dennis Imhoff, CEQA Coordinator, California Department of Parks and Recreation, Four Rivers District, 31426 Gonzaga Road, Gustine, CA 95322, telephone: 209–826–1197, e-mail: *dimho@parks.ca.gov*.

**SUPPLEMENTARY INFORMATION:** San Luis Reservoir is approximately 5 miles west of the City of Los Banos, adjacent to State Route 152, in Merced County, California. Los Banos Creek State Recreation Area is located about 5 miles southwest of the City of Los Banos, south of State Route 152, off Volta Road, just west of Interstate 5.

Reclamation and DPR are preparing a joint draft PEIS/EIR. DPR will be the Lead Agency for the California Environmental Quality Act (CEQA) and Reclamation will be the Lead Agency for NEPA.

DPR's General Plan Unit, in conjunction with its Four Rivers District Office, is developing the General Plan (GP) portion of the GP/RMP, in accordance with Public Resources Code § 5002.2 (General Plan guidelines) and § 21000 *et seq.* (CEQA). The purpose of the GP is to guide future development activities and management objectives at the Park. Reclamation is developing a RMP portion of the GP/RMP, pursuant to the Reclamation Recreation Management Act of 1992, Title 28, Pub. L. 102–575, the Council on Environmental Quality Regulations (CEQ) (40 CFR 1500–08) and the Federal Water Project Recreation Act. Reclamation and DPR are cooperating to prepare the GP/RMP in a consolidated planning process to solicit agency and stakeholder participation for both efforts simultaneously. The project areas for each plan will vary, based on differences in management and ownership; however, there will be common components within the joint GP/RMP.

The San Luis Reservoir and the Los Banos Creek Retention Dam were built in 1965 as part of the Central Valley Project on lands owned by Reclamation. The lands are jointly managed by the California Department of Water Resources (DWR) and DPR. DPR is responsible for recreation and resource management while DWR manages the water supply facilities.

There are additional tracts of land, managed by the California Department of Fish and Game (DFG) in the vicinity of the San Luis Reservoir, which were set aside to mitigate for construction impacts. These DFG-managed lands will not be part of the GP and PEIR/EIS, as DPR does not have management jurisdiction over these lands.

San Luis Reservoir Wildlife Area and O'Neill Forebay Wildlife Area, federally owned lands which are managed by DFG, will be included in the RMP and PEIR/EIS.

The objectives of the GP/RMP are to establish management objectives, guidelines, and actions to be implemented by Reclamation directly, or through its recreation contract with DPR to:

- Protect the water supply and water quality functions of the reservoirs.
- Protect and enhance natural and cultural resources in the SRA, consistent with Federal law and Reclamation policies.
- Provide recreational opportunities and facilities consistent with the Central Valley Project purposes.

The GP/RMP will be the primary management guideline for defining a framework for resource stewardship, interpretation, facilities, visitor use, and services. The joint plan will define an ultimate purpose, vision and intent for management through goal statements, guidelines, and broad objectives. The GP/RMP will be a long-term plan that will guide future specific actions at the SRA. Subsequent specific actions will be the subject of future environmental analysis as required.

We would like to know the views of interested persons, organizations, and agencies as to the scope and content of the information to be included and analyzed in the draft PEIS/EIR. Agencies should comment on the elements of the environmental information that are relevant to their statutory responsibilities in connection with the proposed project.

It is Reclamation's practice to make comments, including names and home addresses of respondents, available for public review. Individual respondents may request that we withhold their home address from public disclosure, which we will honor to the extent allowable by law. There may also be circumstances in which we would withhold a respondent's identity from public disclosure, as allowable by law. If you wish us to withhold your name and/or address, you must state this prominently at the beginning of your comment. We will make all submissions from organizations or businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, available for public disclosure in their entirety.

6510 Federal Register / Vol. 68, No. 26 / Friday, February 7, 2003 / Notices

Dated: February 3, 2003.

**Frank Michny,**

*Regional Environmental Officer, Mid-Pacific Region.*

[FR Doc. 03–3023 Filed 2–6–03; 8:45 am]

BILLING CODE 4310–MN–P

## INTERNATIONAL TRADE COMMISSION

### Request for Public Comments Concerning the Maintenance of the Harmonized Tariff Schedule of the United States

**AGENCY:** United States International Trade Commission.

**ACTION:** Notice.

**SUMMARY:** The Commission is responsible for the maintenance and publication of the Harmonized Tariff Schedule of the United States (HTS), pursuant to title I of the Omnibus Trade and Competitiveness Act of 1988 (19 U.S.C. 3001 *et seq.*). The Commission is seeking input from users of the HTS on the maintenance and structure of the change record, so that public and private users can identify more easily the changes in each issuance of the HTS and locate the source of such changes. In addition, the Commission is asking users of the electronic revisions of the HTS to suggest changes or improvements in the posting of such files on the Commission's Web site.

**EFFECTIVE DATE:** Upon publication; comments are sought through the close of business on the date that is four weeks after the date of publication of this notice in the **Federal Register**.

**FOR FURTHER INFORMATION CONTACT:** Eugene A. Rosengarden, Director, Office of Tariff Affairs and Trade Agreements, (202) 205–2592; Janis L. Summers, Attorney-Adviser, Office of Tariff Affairs and Trade Agreements, (202) 205–2605; or David G. Michels, Special Assistant to the Director, (202) 205–3440; U.S. International Trade Commission, 500 E Street SW., Washington, DC 20436. Hearing-impaired persons can obtain information on this matter by contacting the Commission's TDD terminal on 202–205–1810. General information concerning the Commission may also be obtained by accessing its Web site *(http://www.usitc.gov)*. Comments filed pursuant to this notice may be viewed on the Commission's Electronic Document Information System (EDIS–II) at *http://edis.usitc.gov*.

**SUPPLEMENTARY INFORMATION:**

**Background**

Beginning with the first edition of the HTS (Commission Publication 2030) and continuing through the present, each printed annual edition of the HTS and each printed supplement has included as a final section a record of the changes contained therein. These records, although not legally authoritative in regard to the tariff treatment of imported goods, assist both public and private sector users of the HTS by identifying changes in HTS provisions. The change records list legal and statistical modifications in the notes and headings of the tariff schedule and, more recently, have included the source of each change together with its effective date. They are intended to be read in conjunction with the Preface to each printed or electronic issuance, because the Preface contains a complete enumeration of legal and administrative instruments and actions that affect the particular issuance, along with effective dates and citations. Since 2000, the Commission has also posted periodic electronic revisions of the HTS on its Web site, *www.usitc.gov*, so that the information in the tariff schedule is more current, together with electronic links to legal instruments making changes in the legal provisions of the HTS. These revisions each contain a complete set of the files that comprise the HTS, whether or not each file was modified. Each such revision likewise contains a change record, but that change record lists only the modifications contained in that revision and is not cumulative to the last printed edition or supplement. Thus, in order to compile a complete list of changes since the immediately prior printed document, a user must retain and combine all of the revision-related change records to have a composite list of changes since that printed document. This system has proven to be confusing to users, even to those most familiar with the HTS. The change records are presented for convenient reference, and as such are not part of the legal text of the HTS; further explanation was provided in the recently revised and expanded Preface to the HTS (2003).

*Possible changes.*—First, the Commission is considering any modifications that may make the change record more useful to all users, while still being administratively feasible, and that may also enable the staff concerned to keep this record more current (and better meet the needs of the Customs Service in updating its automated entry system). It should be noted that any such modifications would have no effect on the advisory nature of the change record, because the interpretation and administration of the HTS are within the legal authority of the Customs Service. In addition, significant lengthening of the change record and proposals for software changes are not likely to be feasible. Nonetheless, possible modifications might include: (1) Expansion of or changes in the descriptions of changes; (2) use of a revised tabular format, perhaps with additional columns providing new information of interest to users; (3) devising a useful method to show the indentation level in the nomenclature structure at which a change has occurred; (4) providing an on-line composite change record, perhaps extending back as far as the 1989 HTS, reflecting all prior legal and/or statistical changes as a history of each tariff provision; (5) if possible, using a format that enables the maximum number of users having different software to download or access the change record. Because the Commission does not determine as a matter of law the classification of imported goods, the change record cannot provide a cross-reference table showing actual changes in classification or the derivation of the scope of new tariff categories. However, other possible useful modifications in addition to the list above can be considered.

In addition, the Commission is considering whether the posting of electronic revisions of the HTS might be changed or improved, either in timeliness or in their method of presentation. These changes might include: (1) Posting only those chapter files, or even individual pages, that contain actual modifications; (2) posting a downloadable file that contains all chapters or pages that were modified since the last electronic revision was posted; (3) posting chapter files or pages whenever changes occur, rather than periodically when several instruments have modified the HTS; (4) eliminating the WordPerfect version and posting only the PDF version of the schedule; or (5) making other changes in the organization of the Web site to make it easier to locate and use these revisions. It is not considered feasible or desirable to insert in the actual tariff chapter files themselves a typed indicator of a change (such as italicized language) or the date it occurred, given staff resources, possible confusion where multiple changes occur, and the need for a more rapid reflection of tariff changes; also, the change record already provides a clearer list of these modifications and their sources.

*Written submissions.*—All submissions must comply with the

## California State Parks Notice of Preparation

NOTICE OF PREPARATION

**To:** Responsible and Trustee Agencies, and Office of Planning and Research.

**Subject:** Notice of Preparation of a Draft Environmental Impact Statement and Environmental Impact Report for the San Luis Reservoir State Recreation Area (SRA) joint General Plan and Resource Management Plan (GP/RMP). The SRA includes the O'Neill Forebay and Los Banos Creek Detention Dam and their adjacent recreation areas.

**Lead Agency:** California Department of Parks and Recreation
Four Rivers District
31426 Gonzaga Road
Gustine, CA 95322
Contact: Dennis Imhoff, CEQA Coordinator
Phone: (209)826-1197 Fax: (209)826-0284
Email: dimho@parks.ca.gov

and

United States Department of the Interior
Bureau of Reclamation
South-Central California Area Office
1243 N Street
Fresno, CA 93721-1813
Contact: Dan Holsapple
Phone: (559)487-5409 Fax: (559)487-5397
dholsapple@mp.usbr.gov

**Consultant:** EDAW, Inc.
753 Davis Street
San Francisco, CA 94111
Contact: Donna Plunkett
Phone: (415)433-1484 Fax: (415)788-4875
Email: plunkettd@edaw.com

1 *California Department of Parks and Recreation*
*San Luis Reservoir State Recreation Area Notice of Preparation*

A joint programmatic Draft Environmental Impact Statement and Environmental Impact Report (DEIS/EIR) is being prepared by the California Department of Parks and Recreation (DPR) and the U. S. Bureau of Reclamation (Reclamation). DPR will be the Lead Agency for the California Environmental Quality Act (CEQA) and Reclamation will be the Lead Agency for the National Environmental Policy Act (NEPA).

We would like to know the views of interested persons, organizations, and agencies as to the scope and content of the information to be included and analyzed in the DEIS/EIR. Agencies should comment on the elements of the environmental information that are relevant to their statutory responsibilities in connection with the proposed project. The project description, location, and potential environmental effects of the proposed project (to the extent known) are contained in this Notice of Preparation (NOP).

Due to the time limits mandated by State law, your response should be sent at the earliest possible date, but not later than January 3, 2003.

Please send your written response to Dennis Imhoff, CEQA Coordinator , California Department of Parks and Recreation, at the address shown above. Responses should include the name of a contact person at your agency.

**Project Title:** San Luis Reservoir State Recreation Area joint General Plan and Resource Management Plan.

**Project Location:** San Luis Reservoir and O'Neill Forebay are approximately four miles west of the City of Los Banos, north and south of State Route 152, and west of its intersection with Interstate 5, in the County of Merced, California. Los Banos Creek Detention Dam is located six miles southwest of the City of Los Banos, south of State Route 152, off Canyon Road, and on the west side of Interstate 5. (see attached Project Location Map)

**Project Description:**

DPR's General Plan Unit, in conjunction with its Four Rivers District office, is in the process of developing a General Plan and EIR for San Luis Reservoir State Recreation Area in accordance with Public Resources Code §5002.2 referencing General Plan guidelines and §21000 et seq. concerning the California Environmental Quality Act (CEQA). The purpose of the General Plan is to guide future development activities and management objectives at the Park. Additionally, pursuant to the Reclamation Recreation Act of 1992, Title 28 (P.L. 102-575) and the Council on Environmental Quality Regulations (CEQ) (40CFR 1500-08), Reclamation is developing a Resource Management Plan and EIS. The GP and RMP will be a joint document as the agencies are cooperating to engage in a consolidated planning process to solicit agency and stakeholder participation for both efforts simultaneously. The project areas for each plan will vary, based on differences in management and ownership, however there will be common components within the joint Plan.

The San Luis Reservoir, O'Neill Forebay and Los Banos Creek Detention Dam were built in 1962 and 1965 as part of the Central Valley Project and the California State Water Project on lands owned by Reclamation. Portions of the lands are jointly managed by the California Department of Water Resources (DWR) and DPR. DPR is responsible for recreation and resource management while DWR manages the water supply facilities responsible for furnishing approximately 1.25 million acre -feet of water as irrigation to various agencies.

There are additional tracts of land managed by the California Department of Fish and Game (DFG) in the vicinity of the San Luis Reservoir that were set aside as mitigation lands during the construction thereof. DFG managed lands will not be part of the General Plan and EIR, as DPR does not have management jurisdiction over these lands. The Federally owned lands, managed by DFG will be included in the RMP sections of the plan. The DFG managed lands owned by Reclamation are known as the San Luis Reservoir Wildlife Area and the O'Neill Forebay Wildlife Area.

Preparation of the joint General Plan and Resource Management Plan is in its early stages, so ultimate land use and resources management provisions or recommendations have not yet been determined. The lead agencies are currently in the process of evaluating existing resources and management opportunities and constraints at the SRA that will aid in the development of the GP/RMP. Known resources at the SRA include:

- Water storage, supply and distribution facilities and infrastructure;
- Plant Communities including Grassland, coastal Sage Scrub and riparian;
- Special-status wildlife species (e.g., San Joaquin kit fox, California red-legged frog);
- Culturally and historically significant areas;
- High-use recreational areas for camping, boating, fishing and swimming (e.g., San Luis Creek, Basalt, Madeiros, Dinosaur Point and Los Banos Creek);

Issues that will be considered as part of the General Plan process include, but are not limited to, the following:

- Expansion of recreational facilities (e.g., improved water system. camping facilities, rest room facilities, expanded swimming area, windsurfing safety patrol platform, marina improvements);
- Significant plant communities and wildlife habitats for San Joaquin kit fox and California red-legged frog, as well as other species of concern;
- Open space/scenic vistas;
- Water and land based recreation and sports including hiking, camping, windsurfing, fishing;
- Evaluation of archaeological/historical/cultural resources;
- Opportunities for transportation and safety improvements;
- Regional growth and planning issues;
- Interpretive and concession opportunities;
- Management constraints with regards to access to Los Banos Creek;
- Relationship to adjacent Pacheco State Park;
- Implications of potential alignments for high-speed rail facilities.

**Potential Environmental Effects:**

Although ultimate land use and resources management provisions of the GP/RMP have not yet been determined, generally expected types of environmental impacts that may occur as a result of the GP/RMP can be identified. Based on the resource characteristics of the SRA and generally

anticipated uses, potential environmental effects that will likely be addressed in the EIS/EIR, include:

- Potential conflicts between sensitive wildlife species/natural communities (e.g., San Joaquin kit fox corridor protection and facility development);
- Potential for development of telecommunications structures (cell towers) on Federally-owned lands affecting ecological and scenic resources;
- Potential for substantial adverse change in the visual character of portions of the project area due to the placement of additional facilities;
- Transportation impacts associated with safety for ingress and egress.

While potential take of threatened and endangered species is not anticipated, the EIR/EIS will describe future State and Federal consultation and permit requirements that may be required for facility development as necessary.

**Intended Use of the EIR/EIS:**

DPR and the Parks and Recreation Commission and Reclamation will use the EIS/EIR component of the GP/RMP to consider the environmental effects, mitigation measures, and alternatives, when reviewing the proposed Plan for approval. The EIR/EIS will serve as the State's CEQA compliance document for adoption of the General Plan and as Reclamation's NEPA compliance document for adoption of the Resource Management Plan. It will also serve as the programmatic environmental document that may be referenced in implementing future actions included in the GP/RMP. Responsible agencies may also use the EIR as needed for subsequent discretionary actions.

**Scoping Meeting:**

Saturday, January 11, 2003
10:00 am. – 2:00 pm
Four Rivers District Office
31426 Gonzaga Road
Gustine, CA, 95322

_____ _____

State Parks CEQA Coordinator, Four Rivers District Date

**Attachments:** NOP Distribution List; Project Location Map

## Newsletter 1 (December 2002) and Survey Form

# SAN LUIS RESERVOIR & PACHECO PARK GENERAL PLANS

### PARTNERS IN PARK PLANNING

In a collaborative partnership, the California Department of Parks and Recreation and U.S. Bureau of Reclamation are launching a joint planning process to improve recreation facilities at the San Luis Reservoir. Working together with the community, this planning process will create a vision for the future, provide recommendations for improvements, and set guidelines for managing the park so it can be enjoyed for years to come. We invite you to join us in planning the park's future!

We welcome your ideas and suggestions for improving this recreation area and preserving its special characteristics. You can start by filing out the enclosed survey and attending the Public Planning Workshop on January 11. Public input will help us focus on priorities, desires and concerns as we evaluate the park's recreational uses and visitor facilities.

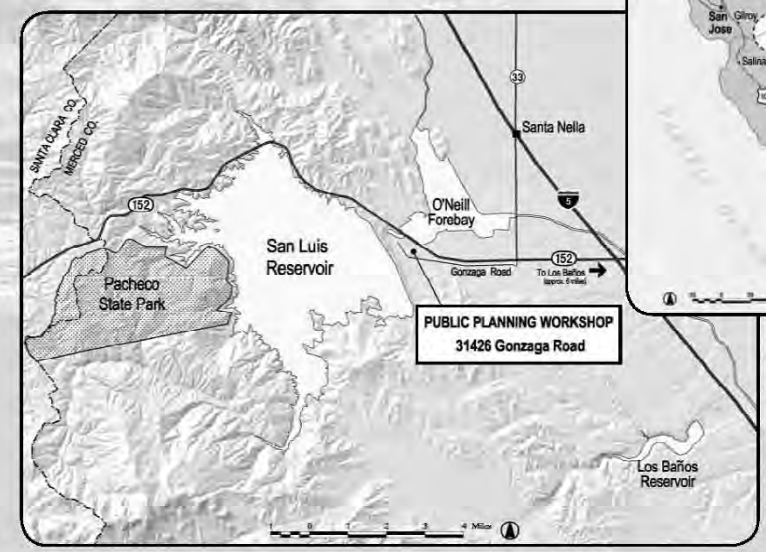
Stewardship of the park's environmental resources will also be an important consideration in the planning process. We look forward to hearing your ideas about ways that we can ensure the long-term protection of the area's wildlife, plants, and cultural resources. Given its proximity to the reservoir, we also will be discussing Pacheco State Park during this planning process. We hope you will take some time to share your ideas and help plan the future of these magnificent state parks.

### HOW CAN YOU CONTRIBUTE?

**Stay Informed:** This Planning Update will keep you informed on the progress of the General Plan process. It will cover both the San Luis Reservoir State Recreation Area and Pacheco State Park General Plans, because the parks are adjacent to each other and parts of the planning process will be combined. Over the next year and a half, we'll be working together to discuss and evaluate a variety of planning topics including recreation facilities, habitat protection, and education and interpretive programs, just to name a few. This Planning Update will track our progress and notify you of upcoming public workshops.

**Fill Out the Survey:** The enclosed survey will help us understand your key issues, ideas and concerns. Tell us what you like about the parks, what's missing, or what could work better!

**Attend the Public Planning Workshops:** We will host three public workshops for the San Luis Reservoir and Pachecho Park General Plans. The first workshop will be held on January 11 at the San Luis Reservoir. The workshop will provide a forum to discuss suggestions for park enhancements and to identify topics for the planning process to explore. Please join us!




**Public Planning Workshop**

**Saturday, January 11, 2003**
**10:00 am to 2:00 pm**
**Four Rivers District Office**
**31426 Gonzaga Road**
**Gustine, CA 95322**
**209.826.1197**

december 2002

# San Luis Reservoir

## San Luis Reservoir State Recreation Area

This recreation area contains three main water bodies: the San Luis Reservoir, Los Baños Creek Detention Dam, and O'Neill Forebay. These facilities are managed through a joint agreement between the U.S. Bureau of Reclamation and the California Department of Water Resources and supply approximately 1.25 million acre–feet of irrigation water to about 600,000 acres of land. In a 1969 agreement, certain lands surrounding the San Luis Reservoir and Los Baños Detention Dam were designated for recreational use and are currently managed by the California Department of Parks and Recreation.

The San Luis Reservoir is well-known for its windsurfing, fishing, camping and boating opportunities, in addition to other recreational activities. Equally important in the planning process is the area's historic significance, including its early use by Native Americans and later as important lands in California's ranching history.

Los Baños Riparian Corridor

**Known resources at the San Luis Reservoir State Recreation Area include:**

- Water storage, supply and distribution facilities and infrastructure,
- High-use recreational areas (e.g., San Luis Creek, Basalt, Medeiros, Dinosaur Point and Los Baños Creek),
- Plant communities such as Grassland, Coastal Sage Scrub and Riparian,
- Wildlife species such as San Joaquin kit fox, and
- Culturally and historically significant areas.

**Some topics the General Plan process will consider include:**

- Expansion of recreational facilities (e.g., camping facilities, restroom facilities, swimming area, windsurfing, safety patrol platform, marina improvements),
- Land management actions for plants and wildlife,
- Interpretation of archaeological/historical/cultural resources,
- Evaluation for access safety improvements,
- Regional growth and planning issues,
- Relationship to adjacent Pacheco State Park, possibly providing a linking trail system, and
- Remote access to Los Baños.

The Los Baños Detention Dam lies approximately 10 miles to the southeast of San Luis Reservoir. The area contains camping and day use areas and also provides boating and fishing opportunities. Both the San Luis and Los Baños areas host many plant and animal species and associated habitats, including some that warrant special management considerations, such as the San Joaquin kit fox, a federal and state endangered species.

Biologists working on the San Luis Reservoir wildlife inventory photographed this coyote at night, using a stationary camera set with infrared transmitters.

### PARKS TEAMS WITH BUREAU OF RECLAMATION

The San Luis Reservoir State Recreation Area is unique because although the recreation lands are managed by the California Department of Parks and Recreation, the land is owned by the U.S. Bureau of Reclamation. They have owned the land since building the dam in 1965. The Bureau of Reclamation uses Resource Management Plans in the same way that California State Parks uses General Plans. The two agencies are working together to produce a joint plan to consolidate certain facets of the planning process. Your voice and/or written comments will be heard by both state and federal agency staff – so your participation in this process is doubly important!

A joint Environmental Impact Report / Environmental Impact Statement (EIR/EIS) also will be produce as part of this planning process, providing an opportunity to plan for the future of the San Luis Reservoir recreation lands, while respecting their role as habitat and water distribution facilities.

# Pacheco Park

## Pacheco State Park

Scenic Rolling Hills of Pacheco State Park

The approximately 6,800 acres of Pacheco State Park were donated to the State of California by the late Paula Fatjo, a descendant of Francisco Pacheco. Currently, 2,600 acres are open to the public, principally for hiking and horseback riding. These lands were part of the larger 48,000-acre Mexican land grant deeded to Pacheco in 1843. The original adobe structure built by the Pacheco family was moved during the construction of the San Luis Reservoir and sits amidst the other ranch buildings, paddocks and outbuildings that exist today. The park is adjacent to the San Luis Reservoir on the east and is accessible off Dinosaur Point Road from State Route 152 in western Merced County.

### PACHECO RESOURCES

Pacheco Park is located in the Diablo range at the edge of the Central San Joaquin Valley rising from 650 feet to its highest peak at 1,900 feet above sea level. Pacheco's scenic rolling hills are a result of coastal and valley influences resulting in a mosaic of oak and blue oak woodland, open grassland and wildflowers. The hills are laced with a myriad of old ranch roads. Deer, bobcat, mountain lion, coyote, fox and eagles are among its diverse wildlife. Approximately 25 small reservoirs, originally created as livestock watering ponds, now capture and store water runoff.

**Pacheco State Park resources include:**

- Hiking and equestrian trails,
- Historical/cultural resources, including old ranch buildings and corrals,
- Plant communities such as oak and blue oak woodland,
- Wildlife species, such as the California red-legged frog,
- Open space, and
- Scenic vistas.

**Some topics that will be considered in the General Plan process include:**

- Access safety on State Route 152,
- Opportunities for overnight camping, horseback riding, and other recreational activities,
- Opportunities for interpretive and educational programs,
- Relationship to the adjacent San Luis Reservoir State Recreation Area,
- Historical/cultural resources including old ranch buildings and corrals,
- Facilities analysis, including use of existing buildings, and
- Evaluation and inventory of historic and cultural resources.

Paula Fatjo bequeathed the property in her will for the "protection, maintenance and fostering of natural flora and fauna." Therefore, this site's recreation use is more passive in nature than at San Luis and is predominantly used by equestrians and hikers. Several ridges have been leased for energy production and contain large wind turbines which currently generate 22.3 million kilowatts of energy annually. Areas of the park outside of the wind turbine lands are leased for cattle grazing. The property's historic features, in addition to the Fatjo ranch, include an old line shack used by Henry Miller's cattle company in the 1800s and part of the Butterfield Stage line route. Other areas are known to be rich in archaeological resources.

This park is separate from San Luis Reservoir, and a General Plan has never been prepared for it before. The planning process will coordinate the work for these two areas while still recognizing their differences. The General Plan process will be an opportunity to plan for the future of the sites' historical and natural resources, while exploring ways to enhance recreational use of the property.

Historic corrals characterize the Fatjo ranch

California Department of Parks and Recreation
Four Rivers District
31426 Gonzaga Road
Gustine, CA 95322

SAN LUIS RESERVOIR • PACHECO STATE PARK

Calendar of Events

GENERAL PLAN PROCESS AT A GLANCE

| FALL 2002 | WINTER 2003 | SPRING/SUMMER 2003 | FALL 2003 | SPRING 2004 |
|---|---|---|---|---|
| Information Gathering<br>Fieldwork | Summarize Existing Conditions<br>PUBLIC PLANNING WORKSHOP #1 | Discuss Opportunities & Constraints and Develop Plan Alternatives<br>PUBLIC PLANNING WORKSHOP #2<br>Prepare Draft Plans | PUBLIC PLANNING WORKSHOP #3<br>Public Review of Draft Plans & EIR/EIS | Distribute Final Plans & EIR/EIS<br>Agency Approvals |

PARTICIPATION IS THE KEY TO A GREAT PLAN!

Contact Information

**If you are not currently on our mailing list and would like to receive the planning update and notice about future workshops, or wish to send written comments, please contact us at:**

California Department of Parks and Recreation
Four Rivers District
31426 Gonzaga Road
Gustine, CA 95322
209.826.1197
(for questions or comments about the General Plan Process)

For general information about park use
(e.g. hours, activities), please call: 1-800-346-2711

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# San Luis Reservoir State Recreation Area General Plan / Resource Management Plan SURVEY

*(please mail back by January 3, 2003)*

**Your Name:** _____

**Organization (if any):** _____

**Address:** _____

**City, State, Zip:** _____

**Phone (optional):** _____

**E-mail (optional):** _____

| | Yes | No |
|---|---|---|
| **Would you like to remain on our mailing list to receive future Planning Updates?** | ☐ | ☐ |

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How often do you visit the San Luis Reservoir? _____

How far do you travel to get there? (miles) _____

What activities do you like to do there? _____

What do you value most about the San Luis Reservoir? _____

What do you like the least? _____

What facilities need improvements or additions at the Park? _____

When you last left the park, what did you remember the most? _____

Are there any environmental issues that you think we should pay close attention to during preparation of the General Plan and Environmental Impact Report? _____

Have you ever been to the Los Baños Creek area? What did you do there? _____

Is there anything else that you would like to share with us? _____

please fold in thirds

tape it closed, affix a 37 cent stamp and mail by January 3, 2003 Thank you!

requires 37 cent stamp

California State Parks
Four Rivers District Office - Attn: Dennis Inhoff
31426 Gonzaga Road
Gustine, CA 95322

## Meeting Summary: January 11, 2003, Scoping Meeting

GENERAL PLAN/RESOURCE MANAGEMENT PLAN and EIR/EIS
**SCOPING MEETING**

FOR
SAN LUIS RESERVOIR STATE RECREATION AREA
AND
PACHECO STATE PARK
**January 11, 2003**
**Four Rivers District Headquarters**

**MEETING SUMMARY**
**Issue Date: February 21, 2003**

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**Participants**

Robert Epperson, RMP Coordinator, USBR
Dan Holsapple, Resource Management Specialist, USBR
Ricardo Cortesa, USBR
Donna Plunkett, Project Manager, EDAW
Corrina Kweskin, Project Planner, EDAW
Ian Ferguson, Project Planner, EDAW
Leo Edson, Wildlife Biologist, EDAW
Wayne Woodroof, Statewide Coordinator, DPR
Warren Wulzen, Associate State Archaeologist, DPR
Dave Gould, Chief Ranger, DPR
Mary Stokes, Interpretive Specialist, DPR
Dennis Imhoff, Chief Ranger, DPR
Dave Milam, Ranger, DPR
Lee Sencenbaugh, DPR
Steve Skram, DPR
Curtis Climer, DPR
Michael Mulligan, Compliance Specialist DFG
Daniel Applebee, DFG
Tom Young, DWR
Mandeep Bling, DWR
Julie Vance, DWR
Cheryl Johnson, Caltrans/USFWS
John Fulton, USFWS
Robert King, Merced County Planning Dept.
Lynn Hurley, SCVWD
Frances Mizuno, "SLDMWA"
Clyde Strickler, Retired DPR Superintendent
Steve Pearl, Wild Fro Racing
Sam Halsted, Landowner
George Stricker
Bruce Hochuli, SLSPP
George Ground, SLSPP
Vern Masse

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The meeting began at approximately 10:00 a.m. The agenda follows the summary below. *Public comments are indicated in italics.* Two poster maps were on display: "Sensitive Biological Species" and "Existing Conditions." In addition, the following handouts were distributed:

1. Agenda
2. General Plan Table of Contents
3. San Luis Reservoir Resource Inventory (January 1973)
4. San Luis SRA Preliminary Scoping Document (11/20/01)
5. San Luis Reservoir SRA General Plan and RMP EIR/EIS Notice of Preparation (11/22/02)
6. Pacheco SP Preliminary Scoping Document (11/2001)
7. Fatjo Project Resource Summary (May 1996)

8. Pacheco State Park General Plan/EIR Notice of Preparation (11/22/02)
9. Contact List
10. California State Parks Planning Handbook Pages 29-37 (February 2002)

**Sign-In and Introduction**
Dave Gould provided a team overview, introducing the team members that were present from the various agencies. Dennis Imhoff provided an overview of the General Plan process. The current General Plan on file for San Luis Reservoir SRA is from 1971, with a 1985 amendment. There is no General Plan on file for Pacheco State Park since it is a relatively new addition to the State Parks system. The ultimate goal of the General Plan process is a "broad brush" look at desired facilities and resources. The General Plan is scheduled to be completed by April/May 2004. Dennis also discussed the use of planning consultants for completing the General Plan work and introduced EDAW team members for the subject park units.

**Planning Process Overview & Public Participation**
Donna Plunkett from EDAW thanked everyone for attending and provided an overview of the General Plan process and EDAW's role as the consultant. She described that there are two separate processes for the General Plan/RMP and for the EIR/EIS and that there will be a separate Plan for Pacheco and San Luis Plan. The latter will be joint effort of DPR and Reclamation. She also described the difference between a State Park and a State Recreation Area. She referenced the State Parks Planning Handbook and distributed the section on the planning process. EDAW is currently putting together the existing conditions, noting that this a particularly appropriate time to get feedback on maps and other data. This meeting is also considered a formal scoping meeting and comments made at this meeting will become part of the formal CEQA/NEPA record.

The next step in the process will be to develop alternatives over the next few months with the goal of a preferred alternative by summer of this year. The San Luis Reservoir State Recreation Area General Plan and the Pacheco State Park General Plan currently are on a joint track but they may diverge since the San Luis Reservoir State Recreation Area General Plan also needs to comply with NEPA and this may take more time. It was noted that there will be two other public workshops and opportunities for public comment. It was also noted that the EIR for Pacheco and the EIR/EIS for San Luis will be program-level analysis and that future projects implemented as part of this process may require a project-level analysis.

*Vern Massy asked whether the O 'Neill Forebay water levels would be addressed at this level.* Donna replied that desired water levels and seasonal recommendations could be included. Bob Epperson commented that the Reclamation's primary goal for the project is to collect and distribute water. Recreation is a secondary use and, therefore, will not have as much influence on water level recommendations. However, USBR will entertain concerns. *Bruce Hochuli asked whether water supply goals for CVP users and increased water levels were mutually exclusive.* Bob responded that they may or may not be mutually exclusive, depending on how much water was available at different times of the year. The water levels will be affected by the operating contracts. Wayne Woodroof commented that this planning process is an opportunity to look at these conflicting goals and uses to see whether they can be brought together. Bob added that they have made some minor changes in the way that flows are released at Millerton.

*Steve Pearl asked whether the primary goal of the planning process is to ascertain the highest use value and had this been decided already. It was noted that the planning process is not about determining highest use; however, it is an opportunity to try to balance and reconcile conflicting issues about uses. Mandeep Bling, DWR operates and maintains the SLR project. He reiterated that the primary purpose of the prefect is to distribute water to consumers through existing*

*contracts that they hold. Every effort is made to minimize fluctuations of water levels at the O'Neill Forebay. For example, most of the water level reduction occurs at night as this also helps to reduce energy costs. Clyde Strickler added that USBR and DWR have always worked closely with DPR to resolve fluctuation issues as much as is possible.*

**Project Overview**

Pacheco State Park

Dave Milam provided an overview of the general history of Pacheco State Park, including the funding structure which is unique for this park. The property was bequeathed in the will of Paula Fatjo and a separate fund is used to pay for the operations at the Park. *Tom Young suggested that the fees at Pacheco could be reduced because there is a separate fund set up to support the Park. Steve Pearl asked whether Pacheco is open to ATV vehicles. Dave Milam responded that they are not allowed although sometimes they are used by ranchers and rangers.*

Dave Gould provided an overview of the recreational aspects of Pacheco. The eastern half of the Park is closed to public use except for guided tours. The western half is open to day use activities including hiking, biking, horseback riding, and camping with a special event permit. Mary Stokes provided an overview of the interpretive uses at Pacheco. Currently there are freestanding outdoor exhibits, guided tours, and limited maps. Mary distributed a handout describing the main interpretive stories currently offered at Pacheco and asked for feedback on the content of the stories they are telling about the Park.

Leo Edson gave an overview of the biological resources at Pacheco, noting that the existing ponds are host to the California red-legged frog, a federally endangered species based on reconnaissance level surveys that took place last fall. He noted that survey work was limited for the property so a full wildlife and vegetation inventory does not exist.

Warren Wulzen described the cultural resources, Pacheco was partially surveyed when it was made a State Park. It contains 10 cultural resource sites, 8 of which are Native American sites with bedrock millings and/or middens. The redwood picket fence lines along the base of the Park and through the center are historic resources. Paula Fatjo left a collection of artifacts at the ranch, including books and saddles, which are a rich source of ranching and family history. Currently, DPR is putting out a contract to develop recommendations for how best to preserve the adobe in its present condition.

San Luis Reservoir State Recreation Area

Bob Epperson provided an overview of the general history of the San Luis Reservoir project, including the Santa Clara-Pacheco conduit. *Dan Applebee asked why land was purchased in excess of what was needed for the reservoir.* Bob responded that excess land was purchased for several reasons. First, purchased land included the basalt rock quarry that was used to build the dam. Second, flood prone areas were purchased. Third, in cases where landowners were not willing to sell, land was acquired through condemnation proceedings. In the latter case, excess lands have been used as mitigation areas such as the DFG managed wildlife areas in the vicinity of the SRA. *John Fulton asked for clarification on the areas indicated in light and dark yellow on the map.* Bob responded that all of these areas are managed by DFG however the lighter areas are federally owned and the darker areas are owned by DFG.

Dave Gould provided an overview of the recreational resources of San Luis Reservoir SRA. It includes 26,000 acres. The Basalt use area is developed with 79 campsites and sewage dump stations. It is popular for striped bass fishing. The Dinosaur Point use area has a boat launch ramp for fisherman and is used by jet-skiers. The O'Neill Forebay is the most developed of the

reservoirs. It has the San Luis Creek use area with 149 developed picnic sites and a boat launch ramp. It has a swimming area and group camping facility which can accommodate 100 people. The Medeiros uses area is on the undeveloped side of the O'Neill Forebay. It has 60 primitive campsites, 49 ramadas, and a day use facility. It also has a boat launch which has been closed since 9/11. This is the area that the windsurfers launch. Los Banos Creek is primitive with a small campground with 15 sites, a boat launch facility, and a small picnic area. The boat limit is 5 mph or "no wake". This area is good for black bass and also popular for remote control model planes. The SRA has a total of 206 developed campsites. A new addition to recreational opportunities is Steve Pearl's "street luge" program on Dinosaur Point Road. *Bruch Hochuli questioned whether the gates at the boat launch at the Medeiros use area provided increased security.* Dave responded that the gates prevent people from launching boats in the evening when no one is patrolling the area. This also helps reduce the risks associated with higher nighttime winds.

*Dan Applebee asked about current hunting levels.* Dave responded that at O'Neill Forebay and San Luis Reservoir only open-season waterfowl hunting is allowed. This is not very popular in this area. There are also a few scull boats on O'Neill and fewer on San Luis Reservoir. *Ricardo Cortesa asked about opportunities for equestrians.* Dave responded that there is one horse camp at the Los Banos Reservoir. *Dan Applebee asked about limits on jet-skis.* Dave responded that there are no limits.

*Bruce Hochuli asked about bicycling opportunities because windsurfers like to use a bicycle to launch when there is no wind. Bruce asked why the dam had been closed to bicyclists since 9/11. In addition, restrictions at the O'Neill Pumping Plant prevent a continuous bike loop around the reservoirs.* Dave responded that the California Aqueduct is a designated bike route and one can still walk across the dam. *Bruce questioned the distinction between bicyclists and hikers. Mandeep responded that closing the route across the dam was part of Reclamation's security assessment.* Dave said that the concern was that bicyclists can pull large ice chests on their bicycles, which are a security threat. *Tom Young added that in the 80s, DWR was sued for millions by someone who fell off of their bike on DWR property and became a quadriplegic. As a result DWR hired a consultant to determine which areas were appropriately maintained for bicycle use.*

*The south end of the O'Neill Forebay is closed to bicyclists because it is not maintained for bicycle use. Bruce responded that mountain biking can be done on very primitive trails. George Ground, SLSSP added that courts are starting to reverse these types of decisions. For example, they are allowing skateboards. Bob King, Merced County Planning, said that laws are starting to address liability issues as long as certain steps are followed. John Fulton thought that bicycle restrictions should be at the top of the Los Banos Creek area, not the bottom. Bruce Hochuli brought up a concern about power lines since many windsurfers are also kite flyers. Steve Pearl discussed the potential for gravity sports at the Dinosaur Point Road area.* Dave did not see a conflict between these sports and uses at either Pacheco State Park or San Luis Reservoir.

Mary Stokes provided an overview of the interpretive resources at San Luis Reservoir SRA. There is the Romero Visitors Center, Basalt Campground activities, and an informal weather station at the O'Neill Forebay. Mary distributed a handout describing the main interpretive stories currently offered at San Luis and asked for feedback on the content of those stories.

Leo Edson described the potential sensitive biological resources within the SRA, including the California red-legged frog, San Joaquin kit fox, tri-colored blackbird, tiger salamander, and burrowing owl. *Julie Vance asked whether kit fox surveys would be conducted at either Pacheco*

*or San Luis*. Leo responded that there are no planned surveys. *Robert King asked about the relationship between the General Plan process and the USFWS HCP process and whether Pacheco State Park or the San Luis Reservoir would consider providing kit fox corridors.* Leo responded that the General Plan team will be working with USFWS to preserve existing corridors but that the team has not yet considered formally becoming part of the HCP process. Donna added that the planning team will consult with the USFWS and that Joanne Karlton of State Parks is working closely on the HCP and the kit fox corridor. *Robert King added that Merced County would like to see State Parks partnering with the County on the HCP*. Leo thought this would be a logical partnership. Bob Epperson added that Reclamation has been looking to acquire land in the area to facilitate the HCP process.

Warren Wulzen described the cultural resources at the San Luis Reservoir SRA. Forty-eight Native American sites have been recorded along the upper level of the San Luis Reservoir while 32 were within the reservoir area. Five were destroyed or inundated and 24 are below the top pool so they are flooded part of the year. One of the sites is on the O'Neill Forebay. Ten sites have been recorded at the Los Banos Reservoir. DPR needs to treat the SRA sites differently than those at Pacheco because the SLR is federally owned and therefore subject to NEPA Section 106 requirements. Warren also described that the historic resources of the dam and the quarry could help interpret the construction of the California Water Project. There are no paleontological resources, despite the name Dinosaur Point, although a few mastodon tusks were found during construction, as well as some early marine shell deposits.

**Open House**
Lunch was provided and all participants had an opportunity to mingle and ask individual questions.

**Presentations**
It was suggested that some of the groups and individuals present might want to give an overview of how they use the facilities and state any recommendations or requests that they may have.

**Bruce Hochuli, San Luis Sailboarders Safety Patrol (SLSSP)**
*The San Luis Reservoir area is popular because of great wind, water; and vehicular access. Because of prevailing westerly winds, the majority of the windsurfers use the Medeiros use area of the O'Neill Forebay. An occasional north wind attracts people to launch from Checkpoint 12. The primary concerns are:*

1. Leave parking near the water; it is good the way it is.
2. The submerged pipe near Medeiros has caused several injuries; windsurfers would like to see it covered or removed.
3. Water levels on O'Neill Forebay should be maintained at a higher level. 219 is the minimum that windsurfers can tolerate, particularly at "Catfish Flats" along the southwestern part of the O'Neill Forebay.
4. Automated water level information would help inform windsurfers of when to use the area.
5. The 10 mph speed limit should be marked near the main windsurfing area. Currently it is marked only at the boat launching area.
6. The jet ski launch area is difficult to use and it would help to have a good ramp.

The SLSSP represents windsurfers and also bicycle riders and kayakers because these provide alternative sporting opportunities when there is no wind. Part of the SLSSP goal is to provide unofficial guidance regarding unique local conditions. For example, SLSSP will warn new users about the overgrown weeds in August when water levels are low.

Steve Pearl asked whether dredging could be used to achieve higher water levels.

George Ground commented that there would be no issue if the ridges could be knocked down. SLSSP would be happy to help identify the high points in the ridges. Currently they place buoys on the ridges to warn windsurfers.

Tom Young mentioned that the minimum USGS water level currently is 217. Mandeep said that this is not the operational level. Bruce said that they have seen the water levels go as low as 216. Tom Young replied that levels have only once or twice gotten as low as 217.5 for a twelve hour Period. Bruce said that currently water levels are lowest in the morning, which is a preferred time for windsurfers because winds are higher. Tom said that the "glory hole" is maintained at 225. Bruce stated that currently there is no way for windsurfers to know the water level until they arrive at the site. Tom stated there is a water level recorder which could transfer water level information to the California Data Exchange (CDEC), which could possibly put the information on the Internet.

Los Banos Reservoir is currently online and updates every three hours. Bruce said it would be great if they could get the O'Neill Forebay water levels online. In addition, they would really like San Luis Reservoir SRA to see fluctuations around plus or minus 220 instead of plus or minus 219. In addition to causing problems for windsurfers, power boats run aground. A viewing platform is not a high priority for windsurfers since they are usually already out in the water.

<u>Steve Pearl, Wild Fro Racing, LLC</u>
Steve Pearl represents street luging on Dinosaur Point Road, a world class recreational street luge road at about 2.5 miles long. He described the tremendous potential for gravity and adrenaline sports. His primary interest is to increase the "technical" nature of the road and to provide some increased level of road control to keep cars off of it while riders are using it.

<u>Sam Halsted, adjacent landowner and rancher</u>
Sam expressed concern that more of the ranchers did not show up for the meeting. He has sold off lots 40 acres and larger, except for a few small lots along Dinosaur Point Road. He is interested in maintaining open space. He described a problem where Whiskey Flat Road and Fifield Road split a ranch, the 12,000 acre Mathis Ranch and the 5,000 acre Sherrer Ranch. Whiskey Flat Road served as the only access for some ranchers with 80 foot right-of-way to drive cattle. Sam is concerned about the future uses proposed along Whiskey Flat Road, especially if parking or other uses are allowed.

Bob Edminster just completed a biological study regarding the pig problem. Sam is interested in what State Parks could do to help get rid of the pigs. Dave Gould agrees about tremendous damage caused by pigs. State Parks has been getting depredation permits from DFG. As an example, State Parks hired a pig trapper for Henry Coe State Park who caught 750 pigs in three months. State Parks would like to do the same thing at Pacheco.

Sam is also interested in the financial aspects of running Pacheco State Park, whether some general fund money was coming into the Park, and how projects will be funded. For example, he wondered whether wind farming would be increased. Dave Gould responded that Paula Fatjo's will required that all money generated from the Park goes to run it. The contract with PG&E dropped rates when they went to market rate four years ago. The Fatjo Corporation funds Dave Milam and Curtis Climer's positions. Pacheco State Park is self supporting.

Tom Young, DWR Operational Issues

The San Luis Reservoir is a joint use operation between the State Water Project and the Central Valley Project. The State Water Project has 28 contracts. "Banks" feeds the California Aqueduct. The Tracy Pumping Plant is feeding the Delta-Mendota federal aqueduct. The San Luis Reservoir project currently is 55% federally operated and 45% state operated. Both the state and the federal water come into the O'Neill Forebay and are lifted at the Gianelli Pumping Plant into the San Luis Reservoir. Both the San Luis pumping plant and the O'Neill pumping plant pump and generate. The San Luis Canal is shared between the federal government and the state government. At 2 million acre-feet, the San Luis Reservoir is the largest off-stream storage facility in the U.S.

*Bruce asked why there are two canals.* Tom explained that the Delta-Mendota canal was built in the late 1930s or early 1940s when the Friant Dam was built on the San Joaquin River. The California Aqueduct was built in the 1960s as a joint use project.

Tom also discussed the issue of water levels. DWR pumps at night when electricity rates are low and generates during the day when electricity rates are higher. It is very difficult to match scheduled demands, real time demands, and desired water levels. DWR also has as a goal to generate income from the electricity generation. *George Ground asked whether it would increase DWR operational expenses to increase the current water level fluctuation of 218-222 to 220-222.* Tom responded that although it sounds easy, an entire team at DW R is working on generating the information that goes into the water levels. They are aware of the windsurfers desires but the level of the water is driven by the financial situation. *Vern Masse added that the windsurfers really want to understand the mechanics behind the water levels and whether costs are some how higher when water levels are maintained at a higher minimum level.* Bob Epperson responded that the downstream water users, farmers and cities, are affecting the water levels. This is affected by high temperatures and the price of electricity. Tom added that there are environmental restrictions placed on pumping water through the Sacramento-San Joaquin Delta For example, pumping through "Tracy" and through "Banks" is affected by fish counts in the Delta. *George Ground asked whether DWR could benefit from Widening the Reservoir.* Mandeep responded that many studies would need to be done regarding siltation, channel capacity, surface evaporation, and dredging material. *Bruce asked when pumping was stopped.* Tom said that the highest pumping occurs between October and March but it can also occur all year long.

Robert King, Merced County Planning Department

The County receives a great benefit from the San Luis Reservoir and Pacheco State Park. As neighbors, they would like to work closely with state and federal governments, particularly in addressing the pressures on wildlife. Merced County has approved some subdivision projects, mostly in the Santa Nella area.

*Wayne Woodruff asked about the status of Merced County's General Plan, amendments, Williamson Ad implementation, and whether any standards had changed recently.* Bob responded that the General Plan has not been updated but it has not been budgeted and is not currently the highest priority. Merced is the last County within the Central Valley to implement the Williamson Act Amendments. The Santa Nella Specific Plan took the last 10 years to complete and has considerably more documentation than the General Plan. Merced County is working closely with DFG and USFWS on the HCP for the west side of the county, as they have been doing for the east side.

**Other Issues**

*Steve Pearl stated that Highway 152 egress issues from different locations within San Luis Reservoir and Pacheco State Park need to be addressed. The Dinosaur Point Road left turn is a safety hazard, as are the Basalt left turn and the San Luis Creek left turn.* Donna responded that the planning team will be reviewing all of the information from the scoping meetings, which included discussion about traffic safety issues. She also stated that currently, Caltrans does not have proposals for safety improvements but that the General Plan could make recommendations regarding these issues.

*Bruce Hochuli asked about the high speed bullet train.* Dennis responded that DPR has been attending the meetings and the final route has not been chosen yet. A decision likely will be made this summer. Dave Gould added that one alternative would run between the cemetery and Checkpoint 12.

*Dan Applebee asked about the connection between the General Plan process and the Santa Clara Valley Water District San Luis Low Point Project.* Dave Gould described that water is pumped to a reservoir in San Benito County. When water levels are low, algae in the San Luis Reservoir causes problems for pumping. The SCVWD is looking at 18 alternatives to address the problem of the low point. They expect to have the alternatives narrowed to six by February. Tom added that SCVWD will be concerned about anything that affects their access to the San Luis Reservoir and Dinosaur Point Road.

*Dan Applebee asked whether the control of water levels would be included within the General Plan/RMP process.* Bob responded that water levels were affected by issues beyond the scope of the RMP. Wayne added that the General Plan could include policies regarding ways to try to resolve some of the conflicts. It will not, however, have any legal authority to solve the conflicts.

Bob Epperson stated that he has gotten some useful suggestions out of this scoping meeting, particularly for automated real time water levels at the O'Neill Forebay and for the idea of studying the possibility of increasing water levels at the O'Neill Forebay.

*Steve Pearl asked about the possibility of dedicating some roads for gravity sports, as opposed to leaving them open for dual use.* Donna responded that this could possibly be included as a recommendation.

*Mike Mulligan commented on DFG's interests in the process. 1) DFG would like to see the General Plan process help to fill some o f the gaps in knowledge about wildlife, at least as part of its recommendation;* 2) *DFG's constituency also includes hunters and fishers and they would like to see these activities maintained, if not expanded; 3*) *the General Plan provides an opportunity for a long-term Section 1600 permit for ongoing maintenance activities; and* 4) *addressing the issue of permits for endangered species.*

**Conclusions & Next Steps**

Donna Plunkett thanked everyone for their participation and reminded everyone to sign in to ensure that they would receive future mailings. She also stated that there would be two additional public workshops and that newsletters would be mailed to inform people about the meetings and the planning processes. The meeting ended at approximately 2 p.m.

## Meeting Agenda: January 11, 2003, Scoping Meeting

CALIFORNIA DEPARTMENT OF PARKS AND RECREATION
AND
US BUREAU OF RECLAMATION
**SCOPING MEETING**
FOR
**PACHECO STATE PARK GENERAL PLAN & EIR**
**AND**
**SAN LUIS RESERVOIR STATE RECREATION AREA JOINT GENERAL PLAN and RESOURCE MANAGEMENT PLAN & EIR/EIS**
Saturday, January 11, 2003
Four Rivers District Headquarters
Gonzaga Road
10:00 am- 2:00 pm.

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**10:00- 10:30 a.m. Sign-In and Introduction**

- Team Overview-Four Rivers Sector, Department of Fish & Game, Department of Water Resources, Bureau of Reclamation, Consultants *(Dave Gould, Acting Superintendent; Four Rivers District)*

**10:30-10:45 a.m. Planning Process Overview and Public Participation**

- General Plan - Resource Management Plan & Environmental Impact Report/Statement *(Donna Plunkett EDAW)*

**10:45- 11:15 a.m. Project Overview**

- Pacheco State Park General Plan and EIR
  - General History (Dave Milam, Ranger, Four Rivers District)
  - Recreation Overview (Dave Gould, Acting Superintendent, Four Rivers District)
  - Interpretive Overview (Mary Stokes, Interpretive Specialist, Four Rivers District)
  - Natural Resources Overview (Leo Edson, Biologist, EDAW)
  - Cultural Resources Overview (Warren Wulzen, Archeologist, Four Rivers District)

- San Luis Reservoir State Recreation Area Joint General Plan and Resource Management Plan and EIR/EIS
  - General History (Bob Epperson, US Bureau of Reclamation)
  - Recreation Overview (Dave Gould, Acting Superintendent, Four Rivers District)
  - Interpretive Overview (Mary Stokes, Interpretive Specialist, Four Rivers District)
  - Natural Resources Overview (Leo Edson, Biologist, EDAW)
  - Cultural Resources Overview (Warren Wulzen, Archeologist Four Rivers District)

**11:15- 12:00 p.m. Question & Answer**

- Public Comment Period (written comment cards are available if you do not wish to speak)

**12:00-12:45 p.m. Open House**

- Light Refreshments & Mingling

**12:45-1:30 p.m. Break-out Groups - Visioning Session**

- Pacheco State Park (Facilitated by Dave Milam and Corrina Kweskin)

- San Luis Reservoir State Recreation Area (Facilitated by Dave Gould and Leo Edson)

**1:30-1:50 p.m.** **Visioning Session Summaries**

**1:50-2:00 p.m.** **Conclusions and Next Steps**

## Meeting Summary: February 20, 2003, Scoping Meeting

GENERAL PLAN/RESOURCE MANAGEMENT PLAN and EIR/EIS
**SCOPING MEETING**
FOR
SAN LUIS RESERVOIR STATE RECREATION AREA
**February 20, 2003**
**Four Rivers District Headquarters**

**MEETING SUMMARY**
**Issue Date: March 6, 2003**

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**Participants**
Robert Epperson, RMP Coordinator, BOR
Dan Holsapple, Resource Management Specialist BOR
Donna Plunkett, Project Manager, EDAW
Wayne Woodroof, Statewide Coordinator, DPR
Jerry Bartholomew, DWR
Warren Wulzen, Associate State Archaeologist DPR
Dave Gould, Chief Ranger, DPR
Mary Stokes, Interpretive Specialist DPR
Dennis Imhoff, Chief Ranger, DPR
Dave Milam, Ranger, DPR
Tom Young, DWR
Mandeep Bling, DWR

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The meeting began at approximately 1:00 p.m. The agenda follows the summary below. *Public comments are indicated in Italics.* Two poster maps were on display: "Sensitive Biological Species" and "Existing Conditions." In addition, the following handouts were distributed:

1. Agenda
2. General Plan Table of Contents
3. San Luis Reservoir Resource Inventory (January 1973)
4. San Luis SRA Preliminary Scoping Document (11/20/01)
5. San Luis Reservoir SRA General Plan and RMP EIR/EIS Notice of Preparation (11/22/02)
6. California State Parks Planning Handbook Pages 29-37 (February 2002)
7. Contact List

**Sign-In and Introduction**
A sign-in sheet was provided and all participants were asked to sign-in. As there were only three participants in addition to the staff, it was decided that the full overview noted on the agenda was not necessary. Donna Plunkett started off by giving an overview of the planning process and noted this meeting was in addition to a scoping meeting held on January 11, 2003.

**Planning Process Overview & Public Participation**
Donna Plunkett from EDAW thanked everyone for attending and provided an overview of the General Plan process and EDAW's role as the consultant. She described that there are two separate processes for the Joint General Plan/RMP and for the EIR/EIS. This is joint effort of

DPR and Reclamation as DPR manages much of the land that Reclamation owns for recreation. The map of Existing Conditions displays ownership and management in the area and she pointed out the mosaic of agencies and land areas that comprise the SRA. She referenced the State Parks Planning Handbook and noted the section on the planning process. EDAW is currently putting together the existing conditions, noting that this a particularly appropriate time to get feedback on maps and other data.

She noted that the next step in the process will be to develop alternatives over the next few months with the goal of a preferred alternative by summer of this year. It was noted that the EIR/EIS for San Luis will be program level analysis and that future projects implemented as part of this process may require a project level analysis.

Bob Epperson gave a brief overview of the SRA and noted that the project area does not include the canal areas. He suggested that we open the meeting up for informal discussion since we had a small group and the visitors were from DWR. *Tom Young noted that since the last meeting when there was a request for water level data to be placed on the Internet he has been working on getting this information posted on the California Data Exchange. He then asked about sewage handling at Pacheco State Park.* Wayne Woodroof commented that the General Plan will not have a specific design for a system as we would cover broader recommendations. Donna noted that certainly the General Plan would take into consideration the surrounding resources if there were to be a recommendation for a future restroom facility.

Bob Epperson asked about the allocation of water resources and asked about any existing entitlements that DWR knows about. It was noted that DPR is provided water as they are entitled to a certain amount although currently do not use near the agreed upon amount. *Tom Young noted that each area of the SRA has a water supply and distribution system in place and briefly reviewed what these are.*

*Tom asked a question about notifying people for the meetings.* Donna gave a brief overview of the outreach work that is being done as part of the planning process. She explained that a database has been set up with individuals and agencies that are recognized as stakeholders for work in this area. She noted however that it may not be inclusive of all of the surrounding landowners if they were not on the lists that DPR provided. Dennis Imhoff noted that for Pacheco they had most of the landowners but not for the SRA. *Tom noted that they have a list of contact people that use to notify for dam release issues.* Donna said that they would incorporate it if he sends it to her. She also noted that the other DWR contacts that Tom gave Dennis were already added to the database.

Bob noted that recently, Reclamation published a notice regarding the encroachment of a private landowner on Federal land in the vicinity of Interstate 5 and the San Luis Canal. He noted that this area was a kit fox mitigation parcel. There was a brief discussion about the portions of the Los Banos Retention Dam that were part of the GP/RMP and it was noted that the DWR owned land in that area was not included. The Los Banos Grande Dam project was noted and that led into a discussion about regional planning efforts and how they fit within the planning process. *Jerry Bartholomew noted that security is an issue and DWR tries to prevent access from the highway.*

Donna noted that all regional plans are mentioned in the Plan and a summary is provided. So far, the plans included, amongst others are the Los Banos Grande Dam project, Caltrans Regional Transportation Plan and the plan for a regional light rail system. Donna then noted briefly that there are natural and cultural resources that are being considered in the Plan. Namely, that there

are many archaeological sites that are in the Valley where the reservoir exists now. She also noted that there are endangered species in the vicinity of the project area including the kit fox and the red-legged frog which will require coordination with US Fish and Wildlife Service. Mary Stokes noted that the power plant tour is very popular and water related interpretive programs are in demand.

She noted that since some tours ended after 9/11, it would be great if there were some other location where an old turbine could be placed to tell the story of the water pumping. A brief discussion ensued about the Romero Visitor's Center and that DWR manages that for interpretive and educational information. It was suggested that Mary contact Sara Betterridge about any future programs.

Bob Epperson asked Mandeep Bling from DWR about the use of the quarry. *Mandeep noted that the quarry has been set aside for future rock reserves should they be needed for the dam.* Bob noted perhaps the area should be cordoned off from access as presently it is possible to gain access to the area. A discussion ensued as to who has management authority over certain areas of the SM. Donna noted that there has been a summary compiled all the legal agreements between Reclamation and the various agencies that have land or management jurisdiction in the SM. Bob noted that the agreement about the quarry was not in the legal agreements that he had.

*Tom Young noted that the letter that DWR submitted as part of the scoping process included a provision about how the rangers should be trained to deal with a variety of enforcement issues outside of just recreation-related violations but that DWR keeps limiting access to certain areas within the SRA which makes it harder for them. He noted that perhaps there can be a joint access system, such as a common key or combination lock that both agencies can utilize.*

Dave Gould asked if DWR staff knew of any agreements for cattle grazing north of SR 152 where currently, the cattle graze right to the edge of the water. *Mandeep did not know of any but said he would look into the matter.* The matter of cattle grazing shifted to Los Banos where the question also arose about the rights at the water's edge there. *Mandeep noted that he thought there was a lease in that area. Joanne Karlton noted that DPR has a continual fence maintenance problem in that area.*

Donna concluded that if there were no more comments or questions, there is always an opportunity to contact her directly on behalf of DPR or others who are noted on the contact list provided.

## Meeting Agenda: February 20, 2003, Scoping Meeting

CALIFORNIA DEPARTMENT OF PARKS AND RECREATION
AND
US BUREAU OF RECLAMATION
**SCOPING MEETING**
FOR
**SAN LUIS RESERVOIR STATE RECREATION AREA JOINT GENERAL PLAN and RESOURCE MANAGEMENT PLAN & EIR/EIS**
Thursday, February 20, 2003
Four Rivers District Headquarters
Gonzaga Road
1:00 p.m. - 3:00 p.m.

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**1:00-1:15 p.m. - Sign-In and Introduction**

- Team Overview - Four Rivers District Department of Fish & Game, Department of Water Resources, Bureau of Reclamation, Consultants (Dave *Gould, Acting Superintendent; Four Rivers District)*

**1:15-1:30 p.m. - Planning Process Overview & Public Participation**

- General Plan - Resource Management Plan & Environmental Impact Report/Statement *(Donna Plunkett EDAW)*

**1:30-2:00 p.m. - Project Overview**

- San Luis Reservoir State Recreation Area Joint General Plan and Resource Management Plan & EIR/EIS
  - General History (Bob Epperson, US Bureau of Reclamation)
  - Recreation Overview (Dave Gould, Acting Superintendent Four Rivers District)
  - Interpretive Overview (Mary Stokes, Interpretive Specialist, Four Rivers District)
  - Natural Resources Overview (Joanne Karlton, Biologist Four Rivers District)
  - Cultural Resources Overview (Warren Wulzen, Archeologist Four Rivers District)

**2:00-2:45 p.m. - Question & Answer**

- Public Comment Period (written comment cards are available if you do not wish to speak)

**2:45-3:00 p.m. Conclusions & Next Steps**

## Meeting Agenda: March 13, 2003, USFWS Meeting

**CALIFORNIA DEPARTMENT OF PARKS AND RECREATION, US BUREAU OF RECLAMATION AND EDAW TEAM**
SAN LUIS RESERVOIR STATE RECREATION AREA
GENRAL PLAN/RESOURCEMANAGEMENT PLAN &EIR/EIS
**USFWS CONSULTATION MEETING**
**AGENDA**
**Thursday, March 13, 2003**
**USFWS Sacramento Office**

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**11:00-11:30 p.m. - Project Overview& Status**

- Current Mapping and Status of Data (Review Existing Mapping)
- Alternatives Development (Overview of Possible Project Components)
  - trail additions and improvements
  - additional boat launching areas
  - additional swimming beach
  - infrastructure improvements
  - camping facilities
- Inter-agency Cooperation (DPR, Reclamation, DFG, DWR)

**11:30- 12:15 p.m. Consultation with USFWS**

- San Joaquin fit fox (review of KFPACT corridor mapping)
- Red-legged frog at SRA and Pacheco SP
- Response to USFWS Scoping Letter
- Consultation with USACE (Section 404 requirements)
- Consultation with DFG (CESA and Streambed Alteration Permitting)

**12: 15- 12:45 p.m. Next Steps and Action Items**

- Timeline for Planning Work

## Newsletter 2 (May 2003)

California Department of Parks and Recreation
Four Rivers District
31426 Gonzaga Road
Gustine, CA 95322

# San Luis Reservoir Pacheco Park

GENERAL PLANS

NEWSLETTER #2

SAN LUIS RESERVOIR STATE RECREATION AREA • PACHECO STATE PARK

## Calendar of Events

GENERAL PLAN PROCESS AT A GLANCE

| FALL 2002 | WINTER 2003 | SPRING/SUMMER 2003 | FALL 2003 | SPRING 2004 |
|---|---|---|---|---|
| Information Gathering<br>Fieldwork | Summarize Existing Conditions<br>Discuss Opportunities & Constraints<br>WORKSHOP #1 and EIR Scoping Meeting | Develop Plan Alternatives<br>WORKSHOP#2<br>Draft General Plan Preparation | Public Review of Draft General Plan & EIR | Distribute Final Plans & EIR/EIS<br>Agency Approvals |

PARTICIPATION IS THE KEY TO A GREAT PLAN!

## Contact Information

If you are not currently on our mailing list and would like to receive the planning update and notice about future workshops, or wish to send written comments, please contact us at:

California Department of Parks and Recreation
Four Rivers District
31426 Gonzaga Road
Gustine, CA 95322
209.826.1197
(for questions or comments about the General Plan Process)

For general information about park use (e.g. hours, activities), please call:
1-800-346-2711

Visit Our Website
www.parks.ca.gov/generalplans

Printed on recycled paper

Designed by EDAW

## PARTNERS IN PLANNING

The first public planning workshop for the San Luis Reservoir General Plan/Resource Management Plan and Pacheco State Park General Plan was a success! Thanks to all who attended and shared their ideas about the parks' futures and also to those of you who filled out the survey. A summary of comments from the scoping meeting/workshop and the survey are enclosed. We're now in the process of incorporating your ideas into three alternatives for each Plan. These plans will define long-term visions for the parks, identify desired improvements and enhancements, and provide guidelines for protecting natural and cultural resources.

Public Planning Workshop #1

**Public Planning Workshop #2:**
**Tuesday, May 27, 2003**
**4:00 pm to 8:00 pm**
**Four Rivers District Office**
**31426 Gonzaga Road**
**Gustine, CA 95322**

## HOW CAN YOU CONTRIBUTE?

**Stay Informed:** This newsletter is being published to keep you informed about the progress of these planning processes. It covers both the San Luis Reservoir State Recreation Area joint General Plan and Resource Management Plan and the Pacheco State Park General Plan. Because the parks are adjacent to each other, the planning processes are being combined to make it easier for you to participate. You may also visit the State Parks website at www.parks.ca.gov to get updated information. To access the General Plan website from the main page, under Related Links click on "Planning", then under Related Links click on "General Plans", then under Related Links click on "Plans In Progress", then click on "San Luis Reservoir State Recreation Area" or "Pacheco State Park."

**Attend the Second Public Planning Workshop:** We will host the second public workshop for the San Luis Reservoir State Recreation Area and Pacheco State Park General Plans from 4:00 to 8:00 pm at the Four Rivers District Office (see location on map inside). We will present the three alternatives for each of the parks and ask for your input to help select the preferred alternatives for the General Plans. You will have the opportunity to comment and vote on the alternatives so that the preferred alternative can be selected with your input in mind. After the public meeting, the final preferred alternative will be chosen and used to craft the draft plans and analyze environmental impacts.

This meeting will be designed as an open house — so you can drop in any time during the session to learn about the alternatives and provide your comments. Presentations for the alternatives will be given at 90 minute intervals between 4:00 and 8:00 pm so you don't need to stay for the whole meeting to participate. Your attendance is important for reviewing the plans, so please join us!

Dinosaur Point Boat Ramp

Summer Hills at Pacheco

may 2003

## PACHECO STATE PARK

Pacheco State Park was created when Paula Fatjo bequeathed the property in her will to DPR for the "protection, maintenance, and fostering of natural flora and fauna thereon."

Based on issues identified through the scoping process and keeping the stated purpose of the park in mind, the alternatives for Pacheco should provide solutions for a variety of issues related to resource protection and recreation enhancements. It is useful to think of alternatives in terms of a range from minimum to maximum – or as passive uses, such as nature study, and active uses, such as overnight camping. The alternatives will include options such as:

- providing access to the adjacent San Luis State Recreation Area
- improving access and safety off State Route 152
- expanding day use areas and overnight camping
- exploring concession services for equestrian use and mountain biking rentals
- expanding trail use to more areas of the park
- expanding self-guided interpretive programs, and provide an all-weather shelter for group gatherings
- continuing cultural and historic resource inventories and monitoring and set up a collections facility
- protecting native plant species utilizing best management practices
- continuing existing feral pig management and increase as resources allow
- evaluating maintenance of stock ponds and adjacent dams

## MANAGEMENT ZONES AND ALTERNATIVES DEVELOPMENT

The planning process for San Luis and Pacheco will serve to guide the future of these parks for the next 30 years. To determine where future facilities and resource protection should occur, the designation of management zones is a planning tool that will be employed in this process. Management zones will help in describing the purpose of various areas within the parks, as well as depict their intended uses.

Management zones are set up based on what activities or resources exist in a given area now, as well as future goals for the area based on opportunities and constraints and issues identified by the stakeholders, as outlined in the enclosed summary. For San Luis, designations for both the land area and the surface water areas are proposed, since distinct activities occur in each.

To assist in developing alternatives, a summary of opportunities and constraints has been developed based on input received during the early scoping phase of this planning process and can be categorized in the following topics: Local and Regional Planning; Infrastructure and Operations; Water Operations; Visitor Experience and Education; and Resource Management.

## LAND-BASED MANAGEMENT ZONES

1. **Administration/Operations Zone (AO)**
   **Proposed Uses**
   - Storage
   - Administrative uses
   - Office space
   - Maintenance
   - Staff living quarters
   - Historic buildings
   - Interpretive facilities
2. **Frontcountry Zone (FC)**
   **Proposed Uses**
   - Visitor orientation
   - Visitor center
   - Camping
   - Day use activities
   - Parking
   - Rest rooms
3. **Backcountry (BC)**
   **Proposed Uses**
   - Trail use
   - Limited mechanized vehicles
   - Passive recreation
   - Grazing
   - Limited visitor access
   - Limited recreation
   - Nature study
   - Research
4. **Leased Zone (LZ)**
   **(Pacheco State Park only)**
   **Proposed Uses and Actions**
   - Vegetation and wildlife management
   - Limited public access
   - Wind turbines
   - Interpretive trails
   - Link to SRA lands

## WATER-BASED MANAGEMENT ZONES

For the water-based designations at San Luis, an inventory system known as Water Resources Opportunities Spectrum (WROS) was employed and yielded the following results for each of the unit's reservoirs:

**O'Neill Forebay – Suburban Recreation Zone (S)**

- Highest concentration of water uses including personal watercraft, windsurfing.

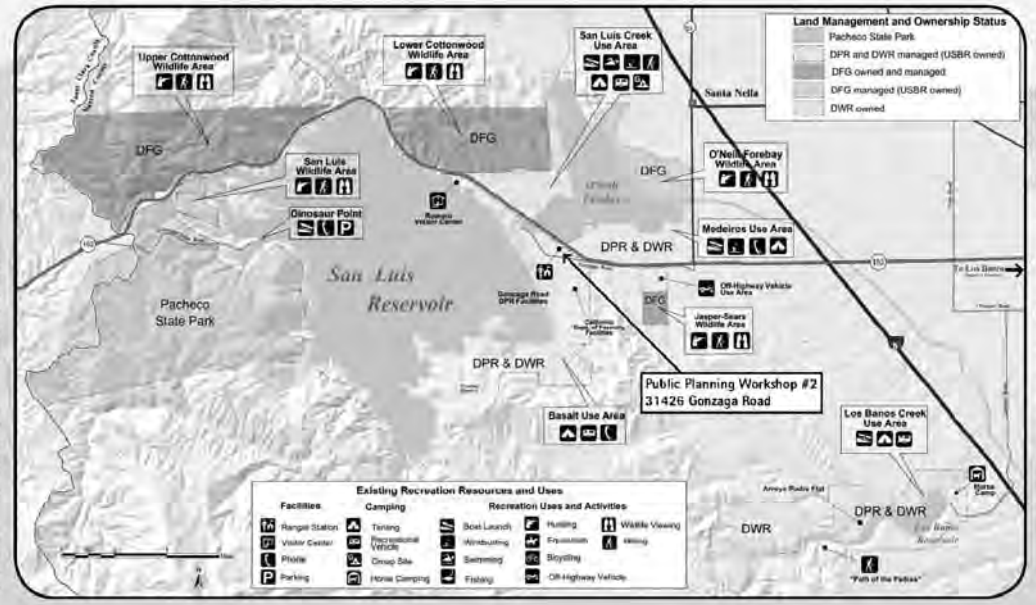
**San Luis Reservoir – Rural Developed Recreation Zone (RD)**

- Maintain current water uses.

**Los Banos Reservoir – Rural Natural Recreation Zone (RN)**

- Least concentration of water uses excluding personal watercraft, windsurfing and water skiing and allowing non-motorized boating.

WROS is a planning tool to inventory, plan and manage water recreation resources for the future. We will be conducting additional WROS inventories and if you would like to participate, please contact us and we will let you know how you can help!




## SAN LUIS RESERVOIR STATE RECREATION AREA

The San Luis Reservoir State Recreation Area was created when the U.S. Bureau of Reclamation developed the property for water storage and distribution. This is the primary purpose of the reservoirs and associated operational facilities located on over 25,000 acres of land and water that make up the project area. As part of that work, the Bureau set up a management agreement with the State to use portions of the area for recreation. California Departement of Parks and Recreation's purpose statement for the area includes:

*"the full utilization of the aquatic and other recreational opportunities in and about San Luis Reservoir and its Forebay; together with consideration for all scientific, scenic, and historical resources of the area."*

Land and water areas are also managed by the California Department of Water Resources and California Department of Fish and Game. The map to the left illustrates the ownership, management and existing recreational uses of the two parks. The planning process for San Luis must consider the management responsibilities of each of the four agencies.

The alternatives for the State Recreation Area should provide solutions for a variety of issues for recreation and resource management while recognizing the unit's primary role for water supply and distribution. It is useful to think of alternatives in terms of a range from minimum to maximum improvements or management activities or from passive to more active recreation solutions. The alternatives will include options such as:

- providing linking trails between adjacent public lands
- improving access and safety between use areas
- expanding and improving visitor facilities and recreational opportunities
- providing concession services in limited areas
- maintaining and improving interpretive programs and facilities
- continuing cultural and historic resource inventories and monitoring and setting up a collections facility
- maintaining and providing wildlife corridors and habitat particularly for the San Joaquin kit fox
- protecting native plant species utilizing best management practices

## Meeting Summary: May 27, 2003, Alternatives Meeting

GENERAL PLAN/RESOURCE MANAGEMENT PLAN and EIR/EIS
**ALTERNATIVES WORKSHOP**
FOR
SAN LUIS RESERVOIR STATE RECREATION AREA
AND
PACHECO STATE PARK
**May 27, 2003**
**Four Rivers District Headquarters**

**MEETING SUMMARY**
**Issue Date: July 9, 2003**

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**Participants**

Lynn Hurley, SCVWD
Tom Young, DWR
Sam Halsted
Steve Pearl, Wild Fro Racing, LLC
Gary Florence
Matthew A. Fantazia
David Milam, DPR
Claudia Gonzalez
Chet Vogt
Gloria Escallier
Don Escallier
Anne Newins
Madeline Yancey
Dennis Woolington
Robert King, Merced County Planning Dept
Dave Gould, Chief Ranger, DPR
Warren Wulzen, Associate State Archeologist, DPR
Mary Stokes, Interpretive Specialist, DPR
Bob Epperson, RMP Coordinator, BOR
Donna Plunkett, Project Manager, EDAW
Ian Ferguson, Environmental Analyst, EDAW
Wayne Woodroof, Statewide Coordinator, DPR
Dennis Imhoff, Chief Ranger, DPR

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The meeting began at approximately 4:00 p.m. The summary below follows the agenda that follows. *Public comments are indicated in italics.* Two poster maps were on display: "San Luis Reservoir Draft Alternatives Table" and "Pacheco State Park Draft Alternatives Table." Also on display were nine 11 x 17 maps, three showing Alternatives 1, 2, and 3 for San Luis Reservoir SRA and six showing Alternatives 1, 2, and 3 for Pacheco State Park (one showing the entire park and one enlargement for each alternative), In addition, the following handouts were distributed:

1. Agenda
2. San Luis Reservoir SRA General Plan and RMP EIR/EIS Notice of Preparation (11/22/02)
3. Pacheco State Park General Plan/EIR Notice of Preparation (11/22/02)
4. Newsletter
5. Surveys
6. San Luis Reservoir SRA General Plan Alternatives Table
7. Pacheco State Park General Plan Alternatives Table
8. Contact List

**Sign-In and Introduction**
Donna Plunkett provided a brief introduction to the planning process as well as to the meeting, including an outline of the meeting's purpose, agenda (attached), and goals. The purpose of the meeting was to update the public on planning process and to obtain public input and opinions on the development of general plan alternatives for both units. The goals of the meeting were to answer any questions regarding planning alternatives and alternatives development and to obtain public input to incorporate into the final alternatives. Attendees then introduced themselves and described their interest in the planning process.

**Presentation of Planning Process and Alternatives**
After all attendees had introduced themselves, Donna Plunkett gave a presentation detailing the planning process and the development of general plan alternatives for both units. The presentation began with a brief introduction to the planning process in general, including a planning process timeline and a discussion of the plan's purpose, and the meeting's goals and outcomes.

Following the general overview of the process, Donna discussed the factors taken into consideration in developing the alternatives for the San Luis Reservoir SRA. Major factors include the unit's purpose and vision; the missions of the Department of Parks and Recreation (DPR), Department of Fish and Game (DFG), and the Bureau of Reclamation (BOR) in managing the unit; and stakeholder input and concerns, including comments from the first public meeting, scoping letters, and surveys. Each of these factors, as well as an overview of the project area reservoirs and ownership and management, was discussed in detail to provide information on how alternatives were developed and where conflicts of interest may arise, and key opportunities and constraints at each unit were summarized. Finally, Donna introduced the conceptual models used in developing alternatives, including the development of "Passive," "Moderate," and "Active" alternatives, the use of management zones, and the Water Recreation Opportunity Spectrum (WROS).

After this background, the San Luis Reservoir SRA planning alternatives were presented using maps to show the management zones along with existing and proposed future uses and developments. Alternative 1 includes the least amount of active development and management, including less development of new facilities, programs, and resource management activities. Alternative 2 includes a moderate amount of development, and Alternative 3 includes the most development.

*Sam Halsted asked if an analysis had been done to determine the carrying capacity at Pacheco State Park. Donna answered that no quantitative analysis has yet been conducted and that current planning activities are focusing on collecting public opinion regarding the types of activities and uses, use levels, and development that is desired for the park. Wayne Woodroof commented that the planning process is looking for development of alternatives based on public and agency goals, and that a complete analysis of specific issues such as carrying capacity will be carried out during the CEQA review process for individual projects. Donna added that all three alternatives include natural and cultural resource protection to ensure that the park's use levels will not negatively impact the park's unique resources.*

*Steve Pearl asked whether it is assumed that the management/use categories used in the planning process reflect existing use and existing development, or if they allow for new and future uses and developments in each unit. In addition, he asked if the planning process looks at the "nature of the users" at each use area, including their uses and opinions. Donna commented that the general plans outline each unit's goals for the next 30 years, that regional and visitor demographics have been analyzed, and that surveys have been distributed in an attempt to*

*determine and incorporate the "nature of the users" as best as possible. Furthermore, Donna commented, specific studies will be conducted during implementation of specific general plan alternatives. In addition, Wayne Woodruff commented that uses do show something about the nature of the users, and that CEQA will require a complete analysis of future changes associated with implementation of alternatives. Lastly, Bob Epperson commented that trends in users are another consideration to be included in the planning process, as is compatibility with nearby uses. Bob used the example of developing a marina in an area currently enjoyed as a quiet, remote fishing area; development of one use should not exclude another existing use, particularly one with a high number of users.*

Specific management and development activities under each alternative were shown in the attached San Luis Reservoir Draft Alternatives Table and the attached maps of the alternatives, (Note: in the interest of time and *at the request of Sam Halsted, who wanted to see the alternatives for Pacheco State Park and had to leave at 6:00pm,* only Alternatives 1 and 2 For San Luis SRA were presented in detail.)

Next, the planning alternatives for Pacheco State Park was presented in detail, including DPR's mission, stakeholder concerns at the unit, and the key opportunities and constraints for development. Alternatives 1, 2, and 3 were then detailed through maps showing the management zones and existing and proposed future uses and developments, as for San Luis Reservoir SRA. Alternative 1 again proposed the least development of facilities, uses, programs, and resource management while Alternative 3 again proposed more intensive development.

*Sam Halsted commented that he has an easement on 4 acres immediately northeast of Pacheco State Park. His easement allows for cattle gathering, and for potential development of the old Butterfield Stage Mountain House located on the property, which he is willing to work on with the appropriate parties Sam also commented that much of the area around Pacheco State Park is being subdivided and sold, and that there will be increasing residential development in the near future. This should be noted and addressed as much as possible during the planning process. In addition, Sam commented that Whiskey Rat Road should not be used for public access to the park, and that increasing development and traffic In the area is making the intersection of SR 152 and Dinosaur Point Road increasingly dangerous.*

During the presentation of alternatives, Sam Halsted asked how the existing cattle route through the park and the existing corals used by cattle ranchers would be changed. Donna answered that cattle routes would be realigned to avoid day use areas and other major use areas and would most likely be moved south, but that specific changes have not yet been proposed.

Tom Young asked if the windmill lease would be renewed under Alternative 1. Donna answered that no the lease would not be renewed in Alternative I and that impacts associated with both lease renewal and windmill removal will be analyzed. Dave Milam further commented that Alternative 3 proposes an extension and expansion of the windmill lease, but that this does not necessarily include expansion of the geographical area of the lease. In addition, Tom asked if a speed reduction for SR 152 in the vicinity of Dinosaur Point Road would be proposed in Alternative 1, or either of the other alternatives. Donna answered that while a speed reduction has not been included as a recommendation in any alternative, it is still an option and may be included.

Gary Florence asked what the equestrian concession proposed under Alternatives 2 and 3 would entail. Donna answered that under Alternative 2, minimal stable and corral facilities would be developed to allow for seasonal horse rental, while under Alternative 3, full stable and corral

facilities would be developed to allow for year-round horse rental as well as possible boarding of privately owned horses. Specific facilities have not fully been determined and may better be addressed during implementation, though potential concessions will be included in the general plan.

Steve Pearl again commented that it is essential to address the dangerous intersection of SR 152 and Dinosaur Point Road.

Sam Halsted commented that the development and planning of SR 152 originally included an interchange at Dinosaur Point Road. This interchange was eventually dropped, and the right-of-way that had been acquired by Caltrans relinquished, due to low use in the area and low Caltrans priority. This indicates that Caltrans is aware of the dangers at this intersection, and that there is a possibility of working with Caltrans to make some degree of improvement.

Chet Vogt commented that the planning process must regard biodiversity as a highest priority at Pacheco State Park, as is detailed in Paula Fatjo's will. Because the park's lands have been continuously grazed for two hundred years, grazing is a necessary component of preserving the land and its existing biodiversity. Grazing should be maintained as a priority to keep the land healthy and natural. Donna and Dave Gould responded that grazing is currently included in each alternative at least as a grazing management option, and that DPR is currently conducting studies to determine its benefit to biodiversity.

Gary Florence asked what alternatives have been included for park maintenance facilities and equipment at Pacheco State Park. Currently, Gary added, facilities and equipment are extremely limited; there is no space to carry out simple tasks such as cutting a board, and such tasks are currently done on the backs of workers' trucks. Donna answered that the need for additional maintenance facilities and equipment has been acknowledged and discussed, but that specific needs and alternatives have not yet been developed. Maintenance facilities and equipment will be included in the Administrative and Operations Zone, and there is the possibility of an enclosed work/maintenance building.

Specific management and development activities under each alternative are shown in the attached Pacheco State Park Draft Alternatives Table and the attached maps of each alternative.

Finally, Donna asked the attendees to review the tables and maps posted on the walls and tables around the room, and to make comments using stickers and post-it notes. She asked people to review the maps for each alternative, read through the alternatives tables posted, and ask her or the parks staff any questions they might have, then to mark their favored alternatives with the colored tabs provided. In addition, she asked that specific comments be included on post-it notes or written on the smaller printouts of the tables and returned to the parks office by mail or by hand.

**Open House**

Following the presentation, attendees reviewed the maps and tables provided and asked questions, marked their favored elements of each Alternative, and made comments on the post-it notes provided. Approximately 20 copies of the Alternatives tables were distributed for further review and commenting.

**Conclusions & Next Steps**

After receiving mailed-in comments, EDAW and DPR staff will work to finalize the planning

alternatives and identifying the preferred Alternative. Finalization of Alternatives will incorporate public opinion and will include further development of Alternatives as needed. Following the completion of the Alternatives, the Draft General Plan and EIRJEIS will be prepared in compliance with CEQA and NEPA. The meeting ended at approximately 8:00pm.

## Meeting Agenda: May 27, 2003, Alternatives Meeting

CALIFORNIA DEPARTMENT OF PARKSAND RECREATION
AND
USBUREAU OF RECLAMATION
**ALTERNATIVES WORKSHOP**
FOR
**PACHECO STATE PARK GENERAL PLAN & EIR**
**AND**
**SAN LUIS RESERVOIR STATE RECREATION AREA JOINT GENERAL PLAN and RESOURCE MANAGEMENTPLAN&EIR/EIS**
May 27, 2003
Four Rivers District Headquarters
Gonzaga Road
4:00 - 8:00 pm.

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**4:00-4:30pm Sign-In and Introduction**

- Team Overview - Four Rivers District, Department of Fish & Game, Department of Water Resources, Bureau of Reclamation, Consultants(Dave *Gould, Acting Superintendent; Four Rivers District)*
- Handouts
- Meeting Format

**4:30-5:45 pm Alternatives Presentation # 1**

- Feedback Session

**5:45-7:00 pm Alternatives Presentation #2**

- Feedback Session

**7:00-8:00 pm Alternatives Presentation #3**

- Feedback Session

## Native American Consultation

July 11, 2003
Debbie Pilas-Treadway
Native American Heritage Commission
915 Capitol Mall, Room 364
Sacramento, CA 95814

**Re: Tribal Contacts for Western Merced and Eastern Santa Clara Counties**

Dear Ms. Treadway:

EDAW Inc. has been retained by the California Department of Parks and Recreation working jointly with the U.S Department of the Interior Bureau of Reclamation to prepare a joint General Plan (State) and Resource Management Plan (Federal) at t he San Luis Reservoir State Recreation Area ("SRA") in Merced County. We are also pre paring a General Pan for Pacheco State Park in Merced and Santa Clara counties which is adjacent to the SRA on the west. These parcels are depicted on the San Luis Dam, San Luis Creek, Pacheco Pass, and Ortigalita Peak NW USGS topographic quadrangle maps and highlighted on the attached map. As part of these planning efforts we are also preparing program level EIR/EIS's as necessary.

We are pleased to bring this activity to your attention, and would appreciate any background information you can provide regarding prehistoric, historic or ethnographic land use. We are also interested in any contemporary Native American values that might be present in or near the project area and would appreciate a search of the Sacred Lands File and a list of local Native American contacts at your earliest convenience.

If you have any questions or need further information for these requests, please feel free to contact me at the number noted hereon or by email at ludwigt@edaw.com or the EDAW project manager, Donna Plunkett at 415-433-1484, email at plunkettd@edaw.com. Thank you for attention to this matter.

STATE OF CALIFORNIA Edmund G. Brown Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-4082
Fax (916) 657-5390
Web Site www.nahc.ca.gov

October 27, 2011

Amy Havens
URS Corporation
1333 Broadway, Suite 800
Oakland, CA 94612
510-874-3269
Sent by Fax: ~~530-741-4457~~
# of Pages: 2

Re: Proposed San Luis River Reservoir State Recreation Area (SRA) Resource Management Plan (RMP), Merced County.

Dear Ms. Havens:

A record search of the sacred land file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe or group. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 653-4040.

Sincerely,

Katy Sanchez

Katy Sanchez
Program Analyst

**Native American Contact List**
Merced County
October 27, 2011

Southern Sierra Miwuk Nation
Jay Johnson, Spiritual Leader
5235 Allred Road
Mariposa , CA 95338
209-966-6038

Miwok
Pauite
Northern Valley Yokut

Southern Sierra Miwuk Nation
Les James, Spiritual Leader
PO Box 1200
Mariposa , CA 95338
209-966-3690

Miwok
Pauite
Northern Valley Yokut

North Valley Yokuts Tribe
Katherine Erolinda Perez
PO Box 717
Linden , CA 95236
(209) 887-3415
canutes@verizon.net

Ohlone/Costanoan
Northern Valley Yokuts
Bay Miwok

Amah MutsunTribal Band
Edward Ketchum
35867 Yosemite Ave
Davis , CA 95616
aerieways@aol.com

Ohlone/Costanoan
Northern Valley Yokuts

Southern Sierra Miwuk Nation
Anthony Brochini, Chairperson
P.O. Box 1200
Mariposa , CA 95338
tony_brochini@nps.gov
209-379-1120
209-628-0085 cell

Miwok
Pauite
Northern Valley Yokut

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed San Luis Reservoir State Recreation Area (SRA) Resource Management Plan (RMP): Merced County.

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URS

1333 Broadway | Suite 800 | Oakland, CA 94612 | 510.893.3600