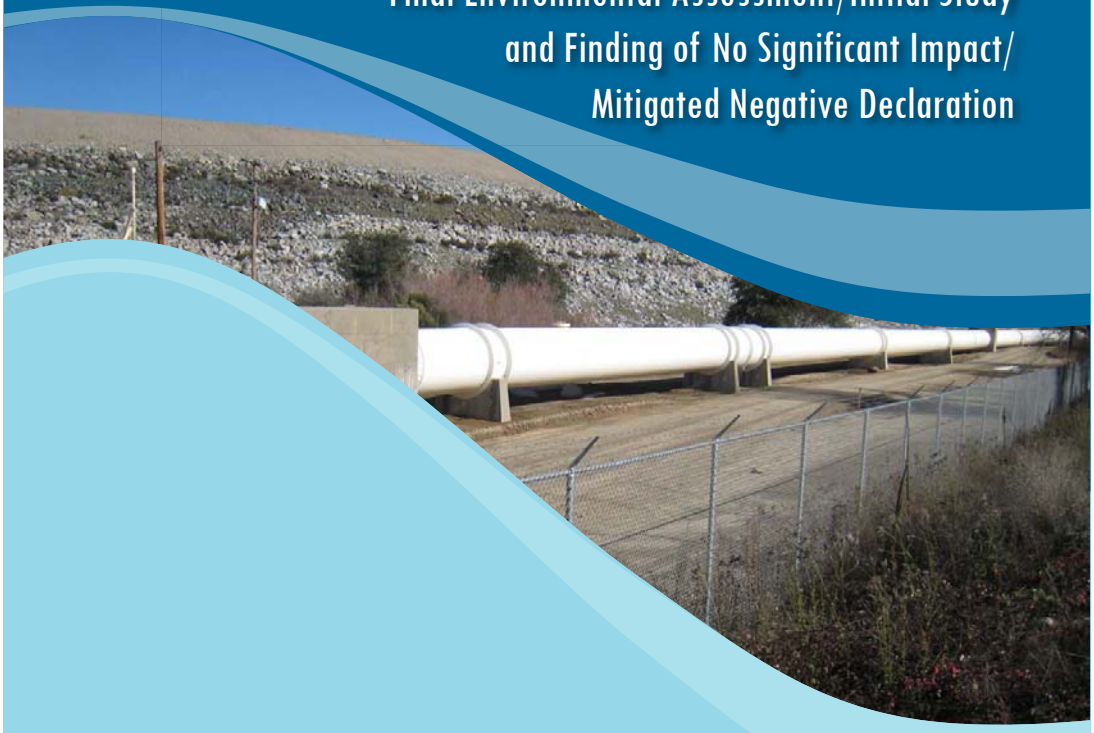
Raw Water Bypass Pipeline Project

Final Environmental Assessment/Initial Study and Finding of No Significant Impact/ Mitigated Negative Declaration



San Juan Water District
U.S. Department of the Interior, Bureau of Reclamation
City of Roseville

June 2009

RAW WATER BYPASS PIPELINE PROJECT

Final Environmental Assessment/Initial Study and
Finding of No Significant Impact/Mitigated Negative Declaration

State Clearinghouse #2009042099

San Juan Water District

U.S. Department of the Interior, Bureau of Reclamation

City of Roseville

June 2009

FINDING OF NO SIGNIFICANT IMPACT

United States Department of the Interior
Bureau of Reclamation
Mid-Pacific Region

Central California Area Office
Folsom, California

Finding of No Significant Impact

Raw Water Bypass Pipeline Project

Environmental Assessment/Initial Study

CCAO FONSI # 09-4

Recommended: _____ 7/20/09
Matthew See **Date**
Natural Resources Specialist

Concur: _____ 7/21/09
Robert L. Schroeder **Date**
Chief, Resources Management Division

Approved: _____ 7/30/2009
Michael R. Finnegan **Date**
Area Manager,
Central California Area Office

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
Central California Area Office,
Folsom, California

Approval by United States for

RAW WATER BYPASS PIPELINE PROJECT

Finding of No Significant Impact

NEPA Lead Agency:
U.S. Department of the Interior
Bureau of Reclamation
Central California Area Office
Folsom, California

CEQA Lead Agency:
San Juan Water District
Granite Bay, California

This Finding of No Significant Impact (FONSI) for the Raw Water Bypass Pipeline Project has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended, and the Council on Environmental Quality's Regulations for Implementing the Procedural Provisions of NEPA (40 CFR Parts 1500-1508). The Bureau of Reclamation (Reclamation) has found that the Proposed Action would not significantly affect the quality of the environment; therefore, an Environmental Impact Statement (EIS) is not required.

BACKGROUND

The Proposed Action involves construction of a permanent raw water bypass pipeline to ensure delivery of Folsom Reservoir water to San Juan Water District and the City of Roseville during planned and unplanned outages of Reclamation's existing 84-inch diameter pipeline.

The Proposed Action includes construction of a 72-inch diameter raw water bypass pipeline that would extend from the existing pump station (Folsom Pumping Plant) near Folsom Dam to the Hinkle Wye. The 72-inch raw water pipeline would be capable of delivering a combined 165 cubic feet per second (cfs) to the San Juan Water District and City of Roseville. The proposed pipeline would begin at the connection point to the Reclamation 84-inch gravity line on the southern side of the 84-inch line at a 72-inch butterfly valve. The 72-inch bypass pipeline would then continue west to connect with an existing SJWD 72-inch pipeline just north of the Hinkle Wye. All 3,400 linear feet of the proposed pipeline would be buried and would parallel Reclamation's existing 84-inch

pipeline on the southern side. The proposed 72-inch pipeline would be constructed of welded steel pipe with a cement-mortar lining and a cement-mortar coating.

The Proposed Action also involves the construction of a 60-inch diameter raw water pipeline that would connect the proposed 72-inch bypass pipeline to an existing City of Roseville pipeline along Auburn-Folsom Road. The proposed 60-inch pipeline would connect to the new 72-inch bypass pipeline just east of the existing Hinkle Wye and would run parallel and to the south of Roseville's existing 60-inch pipeline. Before reaching Auburn-Folsom Road, the proposed 60-inch pipeline would cross the American River Bike Path and a drainage ditch. The proposed 60-inch pipeline would be buried and would extend approximately 570 linear feet. The pipeline would consist of welded steel pipe with a cement-mortar lining and a cement-mortar coating.

Under the No Action Alternative, a permanent bypass pipeline would not be constructed. Reclamation would still need to take the existing 84-inch pipeline out of service to address the coal tar enamel lining failures and corrosion issues. During this outage, no surface water from Folsom Reservoir would be available to SJWD or the City of Roseville for up to twelve weeks. Because the two entities cannot withstand prolonged water delivery shortages, Reclamation would need to install a temporary pipeline to allow water deliveries to continue during the planned outage. The temporary pipeline would provide a total capacity of 70 cubic feet per second (40 MGD). The temporary pipeline would take approximately four weeks to construct and another four weeks to disassemble. It is assumed that the pipe needed to construct the temporary pipeline would be rented, as storing sections of the pipe onsite after its use would be impractical. Therefore, the temporary pipe would be delivered to the site and constructed, then dismantled and trucked off-site once the repairs have been completed and the 84-inch pipeline is brought back online.

FINDINGS

An Environmental Assessment/Initial Study (EA/IS) with a FONSI (distributed for public review in April of 2009) has been prepared to disclose potential environmental impacts pursuant to NEPA and the California Environmental Quality Act (CEQA). The following are the reasons why the impacts of the Proposed Action are not significant:

1. The Proposed Action will have no significant impact on water resources. Reclamation will require the construction contractor to obtain a State General Permit for Storm Water Discharges Associated with Construction Activity according to the National Pollutant Discharge Elimination System (NPDES) program. This will entail the development and implementation of a Storm Water Pollution Prevention Plan that will describe best management practices (BMPs) that will be implemented to contain stormwater runoff on-site and to reduce erosion and sedimentation. The construction contractor would also be required to obtain a dewatering permit from the Central Valley Regional Water Quality Control Board prior to any dewatering that would result in a discharge to surface water.

2. The Proposed Action will have no significant impact on air quality. Total emissions from construction of the new bypass pipeline are temporary and less than Sacramento Metropolitan Air Quality Management District thresholds. The Proposed Action will not exceed General Conformity thresholds.

3. The Proposed Action will have no significant impact on terrestrial or aquatic resources. Any loss of vegetation during construction will be reduced through tree protection measures and a revegetation plan. All tree removal would occur between September 1 and January 31 to avoid impacts to nesting and migratory birds. Construction personnel will be required to take biological awareness training prior to construction. Excavation activities could require alteration of an existing drainage that extends north from the gravel access road, parallel to the Right Wing Dam and adjacent to the recreation trail. This drainage may be considered a Waters of the U.S. The appropriate Section 404 and 401 Clean Water Act permits will be obtained, as required.

4. The Proposed Action will have no significant impacts on special-status species. A bird and bat survey will be completed prior to construction if activities must occur during the breeding season for special status birds and bats. California red legged frog surveys will be conducted prior to construction and if any frogs are observed, Reclamation will reconsult with the USFWS.

   Section 7 consultation with USFWS for the project was initiated on April 17, 2009 for the valley elderberry longhorn beetle. As required by USFWS, any elderberry shrubs that will be directly affected by the project will be removed prior to construction, according to the Guidelines for the Valley Elderberry Longhorn Beetle. All elderberry shrubs within 100 feet of the project that would be indirectly affected would be protected through fencing and other measures approved by USFWS.

5. The Proposed Action will have no significant effect on geology and soils. The construction contractor will be required to implement a Stormwater Pollution Prevention Plan that will include BMPs to reduce erosion and stormwater runoff. Loss of soil material through excavation of the trench is expected to be insignificant as the trench will be backfilled with additional materials.

6. The Proposed Action will have no significant effect on visual resources. The visual impacts associated with construction would be temporary and minimal. Since the pipeline will be buried, the only permanent impacts of the project will be a surge tower constructed near the existing surge tower at the pumping plant and the connections of the new pipeline to the existing 84-inch pipeline. These features will not substantially change the existing character of the site.

7. The temporary traffic generated by the Proposed Action will be less than significant. Construction activities will be expected to cause a maximum increase in average daily trips (ADT) of approximately 0.58 percent during peak

construction. This temporary increase in traffic from the Proposed Action is considered less than significant. One lane on Auburn-Folsom Road may need to be closed for approximately one week. This would be coordinated with the City of Folsom. Folsom Dam Road within federal property would need to be closed up to two weeks. Reclamation as agreed to this temporary closure. There would be no traffic impacts associated with operation of the pipeline beyond periodic maintenance.

8. The Proposed Action will not result in significant noise impacts. The closest sensitive receptors are apartment buildings located approximately 300 to 400 feet away; however, ambient noise levels are already higher due to traffic from Auburn-Folsom Road. Construction would occur during weekday hours and will not substantially increase noise levels to sensitive receptors. Operation of the pipeline will not generate any noise.

9. The Proposed Action site has been subject to cultural resources survey and inventory. No historic properties or known cultural resources would be affected by construction of the Proposed Action. While Folsom Dam and Right Wing Dam have been determined eligible for listing on the NRHP, the Proposed Action would not affect these structures or their eligibility. Reclamation is consulting with the State Historic Preservation Officer (SHPO) and has obtained their concurrence with this determination in compliance with the 36 Part 800 regulations that implement section 106 of the National Historic Preservation Act (NHPA).

10. Brief interruptions in water service could occur to SJWD and the City of Roseville when the proposed pipeline is connected to the existing SJWD and City of Roseville pipelines. This interruption in water service would not last longer than 24 hours; therefore it will be less than significant.

11. The Proposed Action will not result in public health and safety impacts. The development of a worker health and safety plan, a fire prevention plan, and a hazardous materials management plan will ensure worker safety and Reclamation employee safety throughout construction.

12. The Proposed Action will not affect water supply because it will not result in any changes in the timing or quantity of water received from Folsom Reservoir.

13. The Proposed Action will not result in any permanent changes to land use, planning, or zoning in the region.

14. The Proposed Action will not affect recreation. A portion of the American River Bike Trail near the Hinkle Wye will need to be temporarily closed during construction; however a trail detour will be established to allow continued use during construction.

15. There are no Indian Trust Assets in or near the project site; therefore the Proposed Action will not affect any Indian Trust Assets.

16. There will be no significant cumulative impacts from the Proposed Action.

CONCLUSIONS

Reclamation has fully evaluated the information and analysis contained in the EA/IS for the Raw Water Bypass Pipeline Project, as summarized above. On the basis of these considerations, Reclamation has determined that the EA/IS adequately and accurately addresses the environmental issues and impacts of the Proposed Action and finds that the Proposed Action is not a major federal action that will significantly impact the quality of the human environment. Therefore, an EIS is not required and will not be prepared for this project, based on the fact that there will be no long-term adverse impacts on the human environment resulting from the Raw Water Bypass Pipeline Project.

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Acronyms and Abbreviations

ADT	average daily trips
APE	area of potential effect
SMAQMD	Sacramento Metropolitan Air Quality Management District
ARWEC	American River Watershed Education Center
BMP	best management practice
BO	biological opinion
CAA	Clean Air Act
CARB	California Air Resources Board
Caltrans	California Department of Transportation
CCAO	Central California Area Office
CDFG	California Department of Fish and Game
CDPR	California Department of Parks and Recreation
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CH_4	Methane
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CO	carbon monoxide
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
Corps	U.S. Army Corps of Engineers
CRHR	California Register of Historic Resources
CVP	Central Valley Project
CVRWQCB	Central Valley Regional Water Quality Control Board
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibel scale
EA	Environmental Assessment
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FHWA	Federal Highway Administration
FLSRA	Folsom Lake State Recreation Area
FONSI	Finding of No Significant Impact
ft	foot/feet
GHG	Greenhouse gases

GWP	Global warming potential
HCM	Highway Capacity Manual
IPCC	Intergovernmental Panel on Climate Change
ITA	Indian Trust Asset
L_{eq}	Equivalent energy level
L_{dn}	Day-night average level
L_{max}	Maximum noise levels
L_{10} and L_{90}	Statistical noise levels
lbs	pounds
lbs/day	pounds per day
LOS	level of service
NAAQS	National Ambient Air Quality Standards
NAC	noise abatement criteria
ND	Negative Declaration
NEPA	National Environmental Policy Act
NPDES	National Pollutant Discharge Elimination System
NOA	Naturally occurring asbestos
NOI	Notice of Intent
NOx	nitrogen oxides
NO_2	nitrogen dioxide
N_2O	Nitrous oxide
NRHP	National Record of Historic Places
O_3	ozone
O&M	operations and maintenance
PASS	Project Alternative Solutions Study
Pb	lead
PCWA	Placer County Water Agency
$PM_{2.5}$	particles less than 2.5 micrometers
PM_{10}	particles of 10 micrometers or less
PPV	peak particle velocity
Reclamation	United States Department of the Interior, Bureau of Reclamation
ROG	Reactive organic gases
RWQCB	Regional Water Quality Control Board
SACOG	Sacramento Area Council of Governments
SAR	Second Assessment Report
SARA	Save the American River Association
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SJWD	San Juan Water District
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMUD	Sacramento Municipal Utility District
SO_2	sulfur dioxide
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board

tpy	tons per year
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
V/C	volume to capacity
VELB	valley elderberry longhorn beetle
VOC	volatile organic carbon
WAPA	Western Area Power Administration

Chapter 1
Introduction

1.1 Purpose and Scope

This document is an Environmental Assessment/Initial Study (EA/IS) for the Raw Water Bypass Pipeline Project (Bypass Pipeline Project) that satisfies the requirements of the National Environmental Policy Act (NEPA) (42 United States Code 4231 et seq.; 40 Code of Federal Regulations 1500-1508) and the California Environmental Quality Act (CEQA) (California Public Resources Code 21000 et seq.; 14 California Code of Regulations 15000 et seq.). This document will also serve as a Biological Assessment in accordance with the regulations implementing Section 7 of the Endangered Species Act (50 Code of Federal Regulations 402; 16 United States Code 1536 (c)).

This EA/IS has been prepared by the U.S. Department of the Interior, Bureau of Reclamation (Reclamation), San Juan Water District (SJWD), and SJWD's partner, the City of Roseville. Reclamation is the NEPA lead agency for the project; SJWD is the CEQA lead agency, and the City of Roseville is a Responsible Agency under CEQA.

Agency	Role
Bureau of Reclamation	NEPA Lead Agency
San Juan Water District	CEQA Lead Agency
City of Roseville	Responsible Agency Under CEQA

The purpose of this EA/IS is to describe and analyze the effects of construction and operation of a permanent raw water bypass pipeline that would prevent water shortages to SJWD and the City of Roseville during planned and unplanned outages on Reclamation's existing 84-inch aboveground raw water pipeline. The existing 84-inch pipeline is currently the only water transmission system available to convey water from Folsom Reservoir to the SJWD and City of Roseville water treatment plants and leaves both agencies vulnerable during planned maintenance or emergency outages.

The document describes the potential direct, indirect, and cumulative effects related to construction of the Bypass Pipeline Project. This document also identifies measures that have been incorporated into the design of the project to minimize or avoid project-related impacts.

1.2 Background

An existing 84-inch diameter raw water pipeline (also referred to as the North Fork Pipeline) owned and operated by Reclamation, currently delivers Folsom Reservoir water from the Folsom Pumping Plant (at the base of Folsom Dam) to SJWD and the City of Roseville water treatment plants. Constructed in 1951, the 3,300-foot long aboveground pipeline is welded steel with a coal tar enamel lining and contains two surge towers that provide pressure relief. Water is delivered to the pipeline from Folsom Reservoir through the Folsom Pumping Plant or by gravity through a pumping plant bypass pipeline when the reservoir reaches a specific elevation.

The 84-inch pipeline begins at the Folsom Pumping Plant near Folsom Dam, runs beneath Folsom Dam Road, and then parallels Right Wing Dam to the "Hinkle Wye". At the wye there are two connecting pipelines (a 72-inch and 42-inch) that travel north to SJWD's Sydney N. Peterson Water Treatment Plant. The 84-inch pipeline reduces to a 60-inch pipeline that branches into two parallel pipelines owned by the City of Roseville that convey water northwest to the City of Roseville Water Treatment Plant.

The existing 84-inch raw water pipeline is the only raw water pipeline available to the SJWD and City of Roseville water treatment plants. Neither SJWD nor the City of Roseville has the storage capacity to accommodate the loss of delivery through the existing 84-inch pipeline for an extended period of time; and, both entities have limited alternate supplies. The single transmission line leaves SJWD and the City of Roseville vulnerable to maintenance outages or emergencies on the 84-inch pipeline. With no back-up supply available, there is a 100 percent loss in Folsom Reservoir water supply when the 84-inch pipeline is out of service. Any prolonged outage would create potential health and safety risks to the 350,000 people in Sacramento and Placer Counties that rely on this water to meet their daily needs.

In February 2000, work performed by Reclamation resulted in the removal of a segment of pipe on the existing 84-inch pipeline. This provided an opportunity to inspect the pipe and make a preliminary determination of condition. The inspection indicated coal tar enamel lining failures and serious corrosion problems on the interior of the pipeline. A formal inspection of the existing pipeline was completed in February 2004 by Reclamation and confirmed the corrosion issues. Based on the inspection, Reclamation is planning maintenance to the existing 84-inch pipeline, which will include complete dewatering of the pipeline to repair the interior coating and expansion joints. To perform the needed repairs, Reclamation will have to take the pipeline out of service for eight to twelve weeks. Without a redundant system in place, this could result in serious water supply shortages for SJWD and the City of Roseville.

The SJWD Wholesale Master Plan, Water Supply and Treatment Report (2001), completed by Kennedy/Jenks Consultants, recognized the risk of having only one pipeline conveying water to the SJWD and City of Roseville water treatment plants and recommended an investigation, in coordination with Reclamation, regarding the feasibility of a parallel pipeline to provide redundancy and improve reliability. Based on the recommendations from the Wholesale Master Plan and the maintenance and repairs planned by Reclamation, a preliminary design study for a parallel Bypass Pipeline was completed in August 2003. Further refinements occurred during the Project Alternative Solutions Study (PASS) process that SJWD and the City of Roseville completed with Reclamation and the U.S. Army Corps of Engineers (Corps) in March 2006. As a result of these studies, SJWD and the City of Roseville are proposing to construct a permanent bypass pipeline to allow maintenance for planned outages required to refurbish and rehabilitate Reclamation's pipeline and to help prevent water shortages during unplanned (emergency) outages.

1.3 Purpose and Need

The purpose of the Bypass Pipeline Project is to create a permanent, secure, and reliable raw water bypass pipeline to ensure conveyance of contract water from Folsom Reservoir to SJWD and City of Roseville during planned maintenance or unplanned outages on Reclamation's existing 84-inch raw water pipeline.

SJWD's water demands vary seasonally from a low of about 30 million gallons per day (MGD) in the winter to 120 MGD during the summer months. SJWD's Hinkle Reservoir provides approximately 45 million gallons (MG) of storage capacity. Combined with available groundwater well production in the SJWD service area, SJWD can accommodate an outage of the existing 84-inch pipeline of approximately 48 to 60 hours during the winter months and less than 24 hours during the summer.

The City of Roseville's winter water demand is 18 MGD and its summer demand is 60 MGD. With 28 MG of storage, the City of Roseville can manage an outage of 24 hours in winter and eight hours during the summer.

Because a minimum of eight to twelve weeks is required to repair and/or rehabilitate the existing pipe joints and pipeline lining on the existing 84-inch pipeline, neither SJWD nor the City of Roseville could meet the minimum health and safety water supply requirements without a bypass pipeline. Construction of a permanent bypass pipeline would allow Reclamation to complete the needed maintenance and repairs to the existing 84-inch pipeline without reducing water deliveries to SJWD and the City of Roseville or phasing the repairs over several years. The bypass pipeline would allow for more frequent maintenance on the existing 84-inch pipeline, which would help to reduce the potential for failure. A permanent bypass pipeline would also provide water delivery assurances in the event of unplanned outages or emergencies on the existing 84-inch pipeline.

1.4 Applicable Laws, Regulations, and Executive Orders

Table 1-1 presents the applicable laws, regulations, and executive orders that the Bypass Pipeline Project must comply with and the method of compliance. Additional descriptions of these laws, regulations, and executive orders are provided in Chapter 3 under the applicable resources.

Table 1-1. Potential Regulatory Requirements for the Bypass Pipeline Project

Law, Regulation, or Executive Order	Method of Compliance
National Environmental Policy Act	EA/IS
Endangered Species Act	Section 7 Consultation with USFWS and NMFS
Clean Water Act	401, 404, 402 Permits, Dewatering Permit
Migratory Bird Treaty Act	EA/IS
E.O 12898 Environmental Justice	EA/IS
Clean Air Act	EA/IS
National Historic Preservation Act Section 106	Section 106 Consultation with SHPO
E.O 11990 Protection of Wetlands	EA/IS, 404 Permit
Indian Trust Assets	EA/IS
California Environmental Quality Act	EA/IS
California Endangered Species Act	EA/IS
California Fish and Game Code §2050-2098	EA/IS
Natural Community Conservation Planning Act	EA/IS
Porter-Cologne Water Quality Control Act	EA/IS, 401, 402 permits
Native Plant Protection Act; California Fish and Game Code §1900 et seq	EA/IS
California Fish and Game Code §3503	EA/IS
California Fish and Game Code §1930-1933	EA/IS
California Fish and Game Code §3511 and 5050	EA/IS
City of Folsom	Encroachment Permit

EA/IS = Environmental Assessment/Initial Study
E.O = Executive Order
SHPO = State Historic Preservation Officer
NMFS = National Marine Fisheries Service
USFWS = U.S. Fish and Wildlife Service

1.5 Project Location

The proposed Bypass Pipeline Project would be constructed just south of Right Wing Dam at Folsom Reservoir in Sacramento County, California. The project area consists of Federally-owned lands that are currently leased to and managed by the California Department of Parks and Recreation (CDPR). Figure 1-1 shows the project location and existing infrastructure.

CDM

Figure 1-1
Project Location and
Existing Facilities

1.6 Decisions to be Made

The results of this EA/IS will determine whether an Environmental Impact Statement/Environmental Impact Report is required or a Finding of No Significant Impact (FONSI) and Negative Declaration (ND) or Mitigated Negative Declaration (MND) will be issued for the actions addressed.

1.7 Document Organization

The remainder of this document is organized as follows:

- **Chapter 2** – presents a description of the No Action Alternative and the Proposed Action analyzed in this EA/IS;
- **Chapter 3** – describes the affected environment and environmental consequences of the alternatives under NEPA;
- **Chapter 4** – contains the CEQA Initial Study Checklist;
- **Chapter 5** – describes the consultation and coordination that occurred during the development of this document;
- **Chapter 6** – presents the list of preparers; and
- **Chapter 7** – presents the list of references.

Chapter 2
Proposed Action

This chapter provides a description of the two alternatives analyzed in this EA/IS: the No Action Alternative and the Proposed Action.

2.1 No Action Alternative

NEPA requires environmental documents to analyze a No Action Alternative along with any proposed Alternatives. The No Action Alternative examines the reasonably foreseeable future conditions in the event that the Proposed Action is not implemented or constructed. The No Action Alternative allows decision makers to compare the impacts of implementing the Proposed Action with the impacts of not implementing the Proposed Action.

2.1.1 Temporary Pipeline Construction

Under the No Action Alternative, a permanent bypass pipeline would not be constructed. Reclamation would still need to take the existing 84-inch pipeline out of service to address the coal tar enamel lining failures and corrosion issues. During this outage, no surface water from Folsom Reservoir would be available to SJWD or the City of Roseville for up to twelve weeks. Because the two entities cannot withstand prolonged water delivery shortages and their existing contracts limit such shortages, Reclamation would need to install a temporary transmission system to allow water deliveries to continue during the planned outage. The No Action Alternative includes a series of temporary pipelines that would be constructed above ground to convey water to SJWD and the City of Roseville. Excavation activities would only be required to construct a small trench to allow the pipeline to travel beneath Folsom Dam Road and the American River Bike Trail. The temporary transmission system would consist of four 24-inch diameter pipelines each with a length of 3,400 feet that would parallel the existing 84-inch pipeline on the south side. The temporary transmission system would provide a total capacity of 70 cubic feet per second (40 MGD). The pipelines would take approximately four weeks to construct. It is assumed that the pipe needed to construct the temporary pipeline would be rented, as storing sections of the pipe on-site after its use would be impractical. The temporary pipe would be delivered to the site and constructed, then dismantled and trucked off-site once the repairs are completed and the 84-inch pipeline is brought back online.

The temporary pipeline would require four weeks to construct and up to four weeks to dismantle. Peak construction traffic generated from the No Action Alternative would include eight trucks per day (16 total truck trips per day) to deliver and remove pipe, and up to two trucks per day (four total truck trips) to deliver additional

materials such as strapping, couplings and temporary blocking. Approximately 20 construction workers would be on-site during peak construction and would therefore generate 20 round trips (40 total vehicle trips) per day. Two small cranes or boom trucks would be required to offload the pipe and place it along the alignment. Backhoes and/or loaders would be required for slight grading activities around Folsom Dam Road. Several service trucks with small tools and equipment would be needed for bolting up and securing the pipe. A construction zone of approximately 35 feet wide would be needed south of the existing 84-inch pipeline, to install and remove the temporary pipeline. Some vegetation would need to removed during construction of the temporary pipeline. The temporary pipeline would be sited to avoid direct impacts to elderberry shrubs.

2.1.2 Temporary Pipeline Operation

Because the temporary pipeline would provide a limited supply of water, any planned outages would need to occur during the low demand season from the end of December through the middle of February. This would give Reclamation only six to eight weeks in any given year to complete any needed repairs. Because the current repair work is estimated to take eight to twelve weeks, it may need to be phased over two or more years, increasing the potential for additional corrosion on the existing 84-inch pipeline.

Although Reclamation would construct a temporary pipeline to allow water deliveries to continue to SJWD and the City of Roseville, this would only be possible during planned outages because it would require approximately four weeks to construct. During unplanned outages such as emergency maintenance, a temporary pipeline could not be constructed in time to prevent water shortages to SJWD and the City of Roseville. In addition, the capacity of the temporary pipeline would be insufficient to meet peak demands for SJWD and the City of Roseville during the summer months. The No Action Alternative could result in water shortages to SJWD and the City of Roseville during unplanned outages and may result in water shortages during planned outages, if they must occur during the high water demand season of March through November.

2.2 Proposed Action

SJWD, in partnership with the City of Roseville, is proposing to construct a permanent raw water bypass pipeline to ensure delivery of water from Folsom Reservoir during planned and unplanned outages of Reclamation's existing 84-inch diameter pipeline. Reclamation will be constructing the direct connections to the 84-inch pipeline, including isolation valves and flowmeters. This document does not address Reclamation's connections to the 84-inch pipeline; Reclamation has completed the applicable environmental compliance for this portion of the work. The

following subsections describe the construction and operation details of the Proposed Action.

2.2.1 Bypass Pipeline Construction

The Proposed Action includes construction of a 72-inch diameter raw water bypass pipeline that would extend from the existing pump station (Folsom Pumping Plant) near Folsom Dam to the Hinkle Wye. A 60-inch diameter pipeline would also be constructed to connect the new 72-inch pipeline to two existing parallel transmission mains operated by the City of Roseville.

The 72-inch diameter pipeline was determined to be the smallest diameter pipeline the agencies could install to minimize costs while still meeting daily water demands. The 72-inch raw water pipeline would be capable of delivering a combined 165 cubic feet per second to SJWD and the City of Roseville. The proposed pipeline would begin at the connection point to the Reclamation 84-inch gravity line on the southern side of the 84-inch line at a 72-inch butterfly valve. The 72-inch bypass pipeline would then continue west to connect with an existing SJWD 72-inch pipeline just north of the Hinkle Wye. All 3,400 linear feet of the proposed pipeline would be buried and would parallel Reclamation's existing 84-inch pipeline on the southern side. The proposed 72-inch pipeline would be constructed of welded steel pipe with a cement-mortar lining and a cement-mortar coating. One above-ground surge tower would be needed for the new bypass pipeline and would be constructed beside the existing east surge tower of the 84-inch pipeline. The new surge tower would be approximately 120 feet tall with a 12 foot diameter. Figure 2-1 shows the location of the proposed 72-inch raw water bypass pipeline.

Surface water from Folsom Reservoir is delivered to the City of Roseville through Reclamation's existing 84-inch raw water pipeline and then through two existing parallel transmission mains (48-inches and 60-inches in diameter) before entering the City's water treatment plant on Barton Road. An existing 60-inch pipeline connects the 84-inch Reclamation pipeline at the Hinkle Wye to the parallel 48-inch and 60-inch pipelines. The Proposed Action would include construction of a 60-inch pipeline parallel to the existing single 60-inch pipeline to connect the new 72-inch bypass pipeline to the two existing parallel transmission mains. The proposed 60-inch pipeline would be constructed just east of the existing Hinkle Wye and would run parallel and to the south of Roseville's existing 60-inch pipeline and would end approximately 40 feet before Auburn-Folsom Road where it would connect with the two transmission mains. The proposed 60-inch pipeline would be buried and would extend approximately 570 linear feet. It would be constructed beneath the American River Bike Path and a drainage ditch. The pipeline would consist of welded steel pipe with a cement-mortar lining and a cement-mortar coating. Figure 2-1 shows the location of the proposed 60-inch raw water pipeline that would connect the new 72-inch bypass pipeline to the City of Roseville's existing transmission mains.

Figure 2-1
Proposed Raw Water Bypass Pipeline

Approximately 20 construction workers would be required on-site each day of construction, with a total construction length estimated to be approximately 30-35 weeks. Work would begin with the clearing and removal of vegetation, followed by the staging of needed materials and equipment. A trench for both the pipelines (4,000 feet long by 10 feet wide and 10 feet deep) would be excavated using open-cut trenching with temporary shoring (stabilization) to prevent collapse of the trench walls. After the pipe is installed in the trench it would be welded together. After the final connections are made at either end of the existing 84-inch pipeline, the new pipelines would be tested. Finally, all equipment and vehicles would be removed and the disturbed areas would be re-contoured to pre-project conditions. Some dewatering may be necessary during excavation of the pipeline trench and some blasting may occur to remove rock in order to achieve the required trench depth.

2.2.1.1 Construction Zones, Stockpiling, and Staging

A total area of up to five acres would be disturbed during construction of the Proposed Action. The disturbed area would include a construction corridor of approximately 50 feet wide by 4,000 feet long that would extend south of the existing 84-inch pipeline from the pump station to the Hinkle Wye, and along the existing Roseville pipeline near Auburn-Folsom Road. The construction corridor would provide access for construction workers and equipment during excavation of the required trench and would provide space to stockpile materials. In addition to the construction corridor, one staging area would be required to store equipment and vehicles. Figure 2-1 shows the location of the proposed construction corridor and staging area.

2.2.1.2 Off-Site Materials Required

The following construction materials would be delivered to the site from off-site sources:

- Approximately 3,400 linear feet of 72-inch diameter pipe and 570 linear feet of 60-inch pipe would be transported to the construction site from the City of Tracy, California, southern California, or Portland, Oregon;
- Approximately 19 pre-cast concrete structures would be delivered to the site from the Folsom or Sacramento area.
- Approximately 12,000 cubic yards of backfill would be delivered to the site from the Folsom or Sacramento area.

2.2.1.3 Construction Vehicles and Equipment

Construction vehicles and equipment for the Proposed Action would include flatbed semi-trucks and trailers to transport pipe, concrete ready-mix trucks to transport

backfill, and dump trucks to haul away excess excavated materials. Table 2-1 presents additional vehicles that would be used to support on-site construction activities.

Table 2-1. Construction Equipment and Vehicles

Equipment/Vehicle	Number Required
Bulldozer (for clearing and grubbing)	1
Water Truck	1
Excavator	2-3
Back Hoe	1
Off-Road Dump Truck	1
Loader	1
Road Grader	1
Roller Compactor	1

2.2.1.4 Traffic

Traffic generated by the Proposed Action would be temporary and would include:

- Approximately 48 trucks per day (96 total truck trips per day) for 25 working days for the delivery of backfill material and removal of excess excavated soil.
- Approximately 100 total trucks (200 total truck trips) to deliver pre-cast sections of pipe.
- Approximately 19 total trucks (38 total truck trips) for the delivery of pre-cast concrete structures.
- Approximately 20 vehicles each day (40 total vehicle trips per day) during peak construction for workers commuting to and from the construction site.

Construction of the 72-inch bypass pipeline would occur on Federal property and would not cross public roads, but would cross Folsom Dam Road on Reclamation property. This road would need to be temporarily closed during construction and would be coordinated with Reclamation. Work along Auburn-Folsom Road to install the Roseville portion of the pipeline could require closure of one northbound lane for approximately one week.

Beyond general maintenance that would occur several times each year, (See Section 2.2.2), no permanent traffic impacts would result from the Proposed Action.

2.2.1.5 Interruptions in Water Service

No outages are expected for the existing Reclamation 84-inch pipeline. Outages would be required for the SJWD and City of Roseville existing pipelines when they tie in to the proposed new 72-inch pipeline. Any interruption in service would not exceed 24 hours in order to prevent water shortages for SJWD and the City of Roseville.

2.2.1.6 Construction Schedule

Construction for the Proposed Action is currently anticipated to begin in the summer of 2009 and would last for approximately 30 to 35 weeks, depending on the amount of blasting required.

2.2.2 Bypass Pipeline Operation and Maintenance (O&M)

Once it is operating, the proposed 72-inch bypass pipeline would be capable of delivering water at a rate of 165 cubic feet per second to SJWD and the City of Roseville water treatment plants. The bypass pipeline would be of a sufficient capacity to allow an unplanned outage of 30 days at any time of the year, and would also allow for a scheduled outage from December through March (approximately 120 days) for regular maintenance.

The bypass pipeline could be operated by itself in the event of an outage on the existing 84-inch pipeline and could also be used in conjunction with the existing 84-inch pipeline to reduce headloss and consequently reduce pumping at the Folsom Pumping Plant. Operation of the proposed bypass pipeline in conjunction with the 84-inch pipeline would not result in an increase in water use; the same quantity of water currently delivered through the 84-inch pipeline would simply be conveyed through both pipelines. Daily water use would not change under the Proposed Action; existing water contracts contain maximum daily water deliveries that SJWD and the City of Roseville cannot exceed. Additionally, the SJWD and City of Roseville water treatment plants do not have the capacity to treat any additional water beyond the quantity currently contracted for. No new intake at Folsom Reservoir is needed as part of the Proposed Action; therefore, no change in the timing or quantity of water received by SJWD and the City of Roseville would occur. SJWD and the City of Roseville would continue to receive water from Folsom Reservoir according to the provisions in their existing water contracts.

The proposed bypass pipeline would require routine maintenance, including exercising of valves, assessment of the cathodic protection system every six months, and walking the alignment up to two times each year to complete a visual inspection of the pipeline. Existing roads in the vicinity will be used for maintenance access; no new maintenance roads are proposed.

2.3 Alternatives Development

SJWD and the City of Roseville have been concerned for some time about the reliability of existing water facilities to convey water from Folsom Reservoir to their water treatment plants. Periodic outages on the existing 84-inch pipeline have occurred in the past for valve replacements and system inspections and they have always resulted in a water supply challenge for SJWD and the City of Roseville. Currently, outages are required to occur in the winter, during low demand times, and for short periods of time to allow agencies to resume treatment and delivery of water. SJWD and City of Roseville have existing storage facilities; however they are only for daily operational storage needs and cannot accommodate extended outages. As a result, thorough inspections have not been completed on the existing 84-inch pipeline and rehabilitation windows continue to get shorter as M&I demands increase as a result of population growth. At some time in the future the need for rehabilitation of the system will reach critical levels.

Anecdotal information, obtained during an informal inspection indicated that rehabilitation of the 84-inch pipeline would be required in the near term. Reclamation determined that future maintenance could occur at any time of the year and may require an outage for an extended period of time. SJWD and the City of Roseville began investigating options to address long term water supply reliability to allow Reclamation to complete the necessary repairs. A history of the investigations and studies examining facilities that would be required for a prolonged outage on the existing 84-inch pipeline is provided below.

Preliminary Concepts and Screening

SJWD and the City of Roseville evaluated multiple facility types (i.e. groundwater wells, surface storage impoundments, treated water storage, bypass pipeline) that would be needed to provide long term water supply reliability as part of their responsibility as M&I water suppliers. Technical challenges, cost implications, and environmental impacts were all factors that were considered during development and screening of the preliminary concepts. To provide Reclamation with windows of opportunity to maintain critical infrastructure would require a fully redundant water supply solution that could meet SJWD and City of Roseville water demands during both low and high water demand seasons and for extended periods of time. After a review of water service areas and other supplies potentially available, SJWD and the City of Roseville determined that it would be technically infeasible to develop an alternative water supply capable of providing sufficient water at any time of the year for indeterminate periods of time. Below is a table (Table 2-2) with preliminary concepts that were screened from further evaluation and the reasons for their elimination. A bypass pipeline option was the only preliminary concept carried forward for further evaluation.

Table 2-2. Preliminary Concepts Previously Eliminated from Further Consideration

Preliminary Concept	Reason for Elimination from Further Consideration
Additional Groundwater Wells	• Economically Infeasible • Technically Infeasible • Environmental Impacts • Lack of groundwater in some service areas
New Surface Storage Impoundments	• Economically Infeasible • Technically Infeasible • Environmental Impacts • Location and size challenges
New Treated Water Storage Facilities	• Economically Infeasible • Technically Infeasible • Environmental Impacts • Location and size challenges
Take No Action	• Does not meet Purpose and Need • Poses public health and safety risks in the event of an outage

Preliminary Design – August 2003
This report considered two alternatives for a pipeline connecting the Folsom Pumping Plant to the Hinkle Wye and Parallel Roseville Pipeline. The projects included buried options for:

- Parallel to existing 84–inch water deliver pipeline; and
- From the Pump Station in Pumping Plant Road to Folsom Auburn to the point of agency connection.

This study was completed to address the Reclamation concern that a redundant facility was required to open up an inspection and maintenance opportunity for the existing 84-inch pipeline. Because Reclamation was involved in the project, it required review through a Value Engineering process. This review was completed and resulted in the development of additional alternatives.

Folsom Project – North Fork Redundant Raw Water Pipeline Concept – Value Engineering – Reclamation – October 2003
This process resulted in nine preliminary alternatives that would allow a maintenance window of opportunity to work on the existing 84-inch pipeline. Preliminary alternatives included:

- Construction of a 54-inch parallel pipeline to the existing 84-inch.

- Construction of two 72-inch pipelines parallel to existing 84-inch pipeline (Replacement of facility as opposed to rehabilitation).
- Valves and taps in the existing 84-inch piping and temporary piping to allow rehabilitation.
- Temporary piping over wing dam to provide water to allow rehabilitation.
- Temporary piping over dike at Beal's Point to provide water to allow rehabilitation.
- A new intake and piping at the Right Wing Dam.

This study also carried a recommendation to perform a more formal inspection of the interior of the existing 84-inch pipeline to determine the extent of corrosion to determine the criticality of the rehabilitation. The inspection was performed and the results showed that corrosion was present but the pipeline was not considered degraded to the point of imminent failure. It was also recognized that the preliminary alternatives considered only addressed a part of the reliability issue. Although the alternatives created a parallel delivery system from the Folsom Pump Station to the Hinkle Wye, they did not address the water system from Folsom Reservoir to the Folsom Pump Station or any facility servicing Folsom prison or the City of Folsom.

In a parallel effort, the Corps had been commissioned to evaluate Folsom Dam for projects that could increase the level of flood protection provided by the dam. This resulted in a project to increase the outlets in Folsom Dam, allowing higher releases, earlier in the reservoir fill cycle. The Sacramento region had obtained funding through the Corps that could be used to study new required infrastructure. Agencies determined it would be beneficial to investigate opportunities to combine the Corps flood protection projects with additional ways of obtaining water from Folsom Reservoir. With this objective, SJWD, the City of Roseville and the City of Folsom entered into a project with the Corps and a consultant, Montgomery Watson Harza (MWH) to look at additional system redundancy.

Redundant Water Supply – Corps – February 2005
This study was completed by MWH and included evaluation of six different alternatives to convey water from Folsom Reservoir to the Folsom Pumping Plant and/or the City of Folsom. With the scope of the project to provide water withdrawal redundancy, none of the alternatives considered a parallel water system to Hinkle Wye. An environmental document was completed for this project, but was not released for review. The preferred alternative was to tap into the Folsom Dam penstocks and construct a parallel pipe to the suction side of the Folsom Pumping Plant. Concerns expressed during the environmental document development were the

impacts on power generation and the reliance on the project to increase deliveries from the reservoir, as opposed to sole use as a reliability enhancement. This effort was finally halted because of concerns that when combined with the water delivery to agencies projects, not all projects were identified. A Project Alternative Solutions Study (PASS) was then initiated to consider a broader range of alternatives and capability.

Project Alternative Solutions Study (PASS) – Reclamation – March 2006
A PASS for the project was completed that considered a broad range of alternatives for reliability of water deliveries from Folsom Reservoir to purveyors. The objective was to include all elements of reliability, including obtaining water from Folsom Reservoir, pumping it to required hydraulic grade line, and delivery to agency take points. The study generated four alternatives and estimated the costs and environmental impacts associated with each alternative. During this study, the agencies determined that any redundant pipeline should be capable of delivering a minimum of 165 cubic feet per second combined to SJWD and the City of Roseville. This is sufficient to handle an unplanned outage of 30 days any time of the year and would allow a scheduled outage from December through March (120 days) for regular maintenance. While the alternatives are not the complete redundancy an 84-inch pipeline would provide, they would provide the minimum reliability SJWD and the City of Roseville need to avoid shortages.

The four alternatives analyzed are as follows:

- Floating pump stations and connections to the purveyors through new pipelines.
- A pump station on the south side of the river, a new dam penetration, and a 72-inch parallel pipeline to the 84-inch existing facility.
- A pump station on the south side of the river, a new intake in the new spillway project, and a 72-inch parallel pipeline to the 84-inch existing pipeline.
- A pump station in the river downstream of the dam with parallel pipeline to each agency delivery points.

Due to the complexity of the alternatives and the associated costs, it was determined that it would be best to pursue alternative elements, where feasible.

At this time, Reclamation staff continued to work on the feasibility of providing a temporary bypass of the existing 84-inch pipeline to allow facility inspection and rehabilitation. Relying on funds available through CVP Replacements, Additions, and Extraordinary Measures (RAX), new connections and valves to existing

facilities, with a long term plan to utilize temporary piping to provide water to the agencies on the 84-inch pipeline, were pursued.

Finally, the current project was achieved with an understanding that SJWD and the City of Roseville would fund installation of the pipeline, as opposed to relying on temporary piping, if Reclamation would design and install the points of connection using available RAX funding.

Chapter 3
Affected Environment and Environmental Consequences

This chapter presents the NEPA analysis for the Bypass Pipeline Project, including a description of the affected environment and the environmental consequences by each resource area. The CEQA analysis, provided in the form of a CEQA Initial Study Checklist, is presented in Chapter 4.

3.1 Environmental Consequences Analysis

The following subsections describe the resources analyzed in detail in this EA/IS, the resources not analyzed in detail in this EA/IS as they would not be affected by the Bypass Pipeline Project, and the past, present and future projects considered in the cumulative analysis.

3.1.1 Resources Analyzed in Detail

The resource areas listed below have the potential to be affected by the Bypass Pipeline Project and are analyzed in detail in this EA/IS. These resources are discussed in Sections 3.2 through 3.13 of this NEPA analysis.

- Water Resources
- Air Quality
- Biological Resources
- Soils, Minerals, and Geological Resources
- Visual Resources
- Transportation and Circulation
- Noise
- Cultural Resources
- Land Use, Planning, and Zoning
- Recreation
- Utilities
- Public Health and Safety

3.1.2 Resources Not Analyzed in Detail

The following environmental resources were determined to have no impacts as a result of implementation of the Bypass Pipeline Project and are not analyzed in this EA/IS. These resources are:

- **Agricultural Resources** - No lands are designated as agricultural within the project area; therefore, no agricultural resources would be affected by the Proposed Action.

- **Population and Housing** - The Proposed Action would not cause any impacts that would result in changes to population or housing.

- **Hydropower** - No changes to Folsom Reservoir storage or the releases made from the reservoir would occur as part of the Proposed Action; therefore, there would be no impact on hydropower.

- **Public Services** –The project would not affect existing CDPR services and would not change the ability of SJWD and the City of Roseville to provide water services to water users. There would be no impacts to existing public services.

- **Indian Trust Assets (ITAs)** – Reclamation has determined that no ITAs exist within or near the project site and no impacts to ITAs would occur. A copy of the Reclamation concurrence letter can be found in Chapter 5.

- **Environmental Justice** - No minority or low income populations are present within the project area; therefore, no environmental justice impacts would occur.

- **Socioeconomics** –Construction workers are expected to come from the surrounding local communities and would not require new housing or services. Recreation at the Folsom Lake State Recreation Area (FLSRA) would remain open throughout construction. The Proposed Action would not result in any socioeconomic impacts.

3.1.3 Cumulative Analysis

A cumulative analysis is presented for each resource area. The analysis considers past, present, and reasonably foreseeable projects that could occur in the area of Folsom Dam and Reservoir and could contribute to cumulative effects. Table 3.1-1 lists the cumulative projects considered for the analysis.

Table 3.1-1. Cumulative Projects

Project Name	Description	Status
New Folsom Bridge	New bridge downstream of Main Concrete Dam	Anticipated date of completion: March 2009
Auburn-Folsom Road Widening	Widening of Auburn-Folsom Road near Dike 5 and 6	Complete
Folsom Dam Safety and Flood Damage Reduction Project (DS/FDR)(Joint Federal Project and Dam Safety work)	Upgrades to existing dam structures and new Auxiliary Spillway	In Construction
Central California Area Office (CCAO) Building Replacement Project	Removal of several existing buildings and construction of a new Maintenance Center and Administration Building.	Anticipated start date: Fall 2009
California Health Care Facility	1,400-bed health care facility to serve Folsom State Prison and California State Prison	Unknown

3.2 Water Resources

This section presents the affected environment and environmental consequences for water resources. Section 3.4 Biological Resources presents a discussion on the environmental consequences associated with wetlands and other jurisdictional waters.

3.2.1 Regulatory Setting

This section describes applicable laws and regulations the project must comply with.

Clean Water Act
The Clean Water Act (CWA) establishes the basic structure for regulating discharges of pollutants into the waters of the U.S. and authorizes the U.S. Environmental Protection Agency (USEPA) to implement pollution control programs. In California, the USEPA has delegated authority to the State Water Resources Control Board (SWRCB) and nine Regional Water Quality Control Boards (RWQCBs).

All point sources that discharge into waters of the U.S. must obtain a National Pollutant Discharge Elimination System (NPDES) permit under provisions of Section 402 of the CWA. This includes construction projects in California (e.g., clearing, grading, or excavation) that disturb greater than one acre of land. Project proponents must file a Notice of Intent (NOI) with the applicable RWQCB to indicate their intent to comply with the State General Permit for Storm Water Discharges Associated with Construction Activity (General Permit). The General Permit establishes conditions to minimize sediment and pollutant loadings and requires preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP) prior to construction. The SWPPP is intended to help identify the sources of sediment and other pollutants, and to establish best management practices (BMPs) for storm water and non-storm water source control and pollutant control. The Proposed Action would disturb an area greater than one acre in size, and would therefore require an NPDES permit from the Central Valley Regional Water Quality Control Board (CVRWQCB).

For information regarding Section 401 and 404 of the CWA, see Section 3.4.1 under Biological Resources.

Porter-Cologne Water Quality Control Act and Basin Plans
The Porter-Cologne Water Quality Control Act of 1970 established the SWRCB and nine RWQCBs within the State of California. These agencies are the primary state agencies responsible for protecting California water quality to meet present and future beneficial uses and regulating appropriative surface rights allocations.

Section 303 of the CWA requires states to adopt water quality standards which "consist of the designated uses of the navigable waters involved and the water quality criteria for such waters based upon such uses." According to Section 13050

of the California Water Code, Basin Plans consist of a designation or establishment for the waters within a specified area of beneficial uses to be protected and water quality objectives to protect those uses. The preparation and adoption of water quality control plans, or Basin Plans, and statewide plans, is the responsibility of the SWRCB.

The CVRWQCB Water Quality Control Plan for the Sacramento River and San Joaquin River Basins (Basin Plan) regulates waters of the state for the surrounding waterbodies in the project area, including Folsom Reservoir and the Lower American River. The CVRWQCB Basin Plan establishes water quality requirements based on the beneficial uses designated for each waterbody.

3.2.2 Affected Environment

Folsom Reservoir was constructed from 1948 to 1956 and is currently operated and maintained by Reclamation as part of the American River Division of the CVP. Folsom Reservoir impounds approximately 977,000 acre-feet of water from the North and South Forks of the American River and provides water supply, power, recreation, fish and wildlife protection, and flood damage reduction benefits. In general, runoff from the relatively undeveloped watershed is of high quality and rarely exceeds the State of California's water quality objectives (Wallace, Roberts, and Todd et al. 2003). The following beneficial uses have been defined by the CVRWQCB for Folsom Reservoir: municipal and domestic water supply; irrigation; industrial power; water contact and non-contact recreation; warm and cold freshwater habitat, warm freshwater spawning habitat; and wildlife habitat, along with potential beneficial uses for industrial service supply. Water quality within Folsom Reservoir is generally acceptable to meet the designated beneficial uses.

3.2.2.1 San Juan Water District

Water Supply

SJWD has no groundwater supplies; 100 percent of its water is obtained from Folsom Reservoir. SJWD is entitled to a total of 82,200 acre-feet per year from Folsom Reservoir, as shown in Table 3.2-1. SJWD acquired 33,000 acre-feet of pre-1914 water rights from Folsom Reservoir when it purchased the North Fork Ditch Company. SJWD negotiated with Reclamation for an additional 40,000 acre-feet of Central Valley Project water; however, this amount was reduced to 11,200 acre-feet per year in the late 1960's. SJWD also entered into a contract with Reclamation for 13,000 acre-feet per year under Public Law 101-514, which is referred to as "Fazio Water" after Congressman Vic Fazio (SJWD 2005).

Table 3.2-1. San Juan Water District Water Supplies

Water Source	Contract Number	Amount (acre-feet)
Reclamation – Central Valley Project, Folsom Reservoir	14-06-200-1521	11,200
Reclamation – Central Valley Project, Folsom Reservoir (Fazio Water)	6-07-20-W1373	13,000
Pre-1914 Right	DA-04-167-E610	33,000
Placer County Water Agency	6-07-20-W1315	25,000
TOTAL		**82,200**

Source: SJWD 2005

SJWD has entered into a contract with Placer County Water Agency (PCWA) that extends through 2021 and is renewable in 20-year increments. The contract allows for 5,000 acre-feet of water beginning in 1977 and increasing to 25,000 acre-feet of water in 1992 and every year after. The PCWA contract places priority on use in Placer County, but allows any water not needed in Placer County to be used in Sacramento County. SJWD has an agreement with the City of Roseville to sell up to 4,000 acre-feet of this water during normal years, if needed. SJWD also has the ability to purchase Section 215 water from Reclamation when available; however, this is water that is in excess of existing entitlements and rights of downstream users and is usually available during winter months only (SJWD 2005).

Water from Folsom Reservoir is conveyed via an 84-inch diameter existing pipeline owned by Reclamation to the SJWD's Sidney N. Peterson Water Treatment Plant, which has a capacity of 120 MGD. A portion of the treated water from the treatment plant is stored in Hinkle Reservoir, which has a 45 MG capacity. Hinkle Reservoir generally provides storage capacity for peaking and emergencies in excess of water treatment plant production (SJWD 2005).

SJWD is a wholesale and retail agency. SJWD's retail customers are in Placer County and Sacramento County, just west of Folsom Reservoir and the Lower American River. SJWD's wholesale customers include Citrus Heights Water District, Fair Oaks Water District, Orange Vale Water District, and the Ashland area in the City of Folsom. The SJWD retail service area and the City of Folsom north of the American River do not have groundwater supplies and rely entirely on surface water supplies. Citrus Heights Water District, Fair Oaks Water District, and Orange Vale Water District supplement water from SJWD with groundwater from their own local groundwater wells.

Water Demand

SJWD's water demands vary seasonally from a low of about 30 MGD in the winter to 120 MGD during the summer. Combined with available groundwater well production and surface storage in the SJWD service area, SJWD can accommodate an outage of the existing 84-inch pipeline of approximately 48 to 60 hours during the winter months and less than 24 hours during the summer.

3.2.2.2 City of Roseville

Water Supply

The City of Roseville has a total annual surface water supply of 66,000 acre-feet from Folsom Reservoir (Table 3.2-2). The City maintains a contract entitlement with Reclamation for 32,000 acre-feet for CVP water. The City has a long term Warren Act contract (No. 02-WC-20-2217) that allows Reclamation to wheel non-project water through Folsom for the benefit of Roseville.

Table 3.2-2. City of Roseville Surface Water Supplies

Water Source	Contract Number	Amount (acre-feet)
Reclamation – Central Valley Project, Folsom Reservoir	14-06-200-3474A	32,000
PCWA Middle Fork Project	Warren Act #02-WC-20-2217	10,000
Optional		10,000
Optional		10,000
SJWD		4,000
TOTAL		**66,000**

Source: City of Roseville 2006

The City has a current contract with SJWD for a total of 4,000 acre-feet of water from part of SJWD's contract with PCWA. The contract with SJWD for PCWA water allows for 800 acre-feet per year to serve the City of Roseville service areas of Doctors Ranch and Foothills Business Park, with an additional 3,200 acre-feet to provide supply to the West Roseville Specific Plan area. These supplies are only available during wet and normal years. The City can also purchase Section 215 water from Reclamation when available.

Surface water from Folsom Reservoir is delivered to the City through Reclamation's existing 84-inch raw water pipeline that reduces to a 60-inch pipeline that branches into two parallel transmission mains (48-inches and 60-inches in diameter) before entering the City's water treatment plant on Barton Road.

The City of Roseville provides water to most of its residents, with the exception of several small areas served by PCWA, SJWD, and Citrus Heights Water District. Water sources for the City of Roseville include surface water from Folsom Reservoir, groundwater from four groundwater wells, and recycled water from its Dry Creek and Pleasant Grove wastewater treatment plants. Groundwater generally serves as a backup supply in the event of drought conditions or reductions in water from Folsom Reservoir; however it is not sufficient to meet the needs of the entire service area. Recycled water is currently used for parks, streetscapes, and golf courses (City of Roseville 2006). In 2005, surface water from Folsom Reservoir made up approximately 97 percent of the City's total water supply, while recycled water made up approximately 3 percent of the total water supply (City of Roseville 2006).

Water Demand
The City of Roseville's total winter water demand is approximately 18 MGD and its summer demand is approximately 60 MGD. With 28 MG of storage capacity, the City can manage an outage of the existing 84-inch raw water pipeline for 24 hours during the winter and eight hours during the summer.

3.2.3 Environmental Consequences

This section presents the environmental consequences of the No Action Alternative and the Proposed Action related to water resources.

3.2.3.1 No Action Alternative

Under the No Action Alternative, no new permanent pipeline would be constructed. Construction of a temporary pipeline is expected to have minimal water quality impacts. If the total disturbed area is greater than one acre, a NPDES permit would be required from the CVRWQCB to control stormwater and reduce the potential for erosion and sedimentation.

Under the No Action Alternative, Reclamation would still need to shut down the existing 84-inch raw water pipeline to perform the needed maintenance. Reclamation estimates the existing raw water pipeline would be out of service for up to twelve weeks. With the pipeline out of service, 100 percent of SJWD and the City of Roseville's Folsom Reservoir supplies would be unavailable. Because the existing water contracts prohibit such a shortage, Reclamation would be required to install a temporary transmission system to ensure deliveries continue during the planned maintenance. The temporary system would consist of four 24-inch diameter pipelines each with a length of 3,400 feet that would parallel the existing 84-inch pipeline on the south side. The temporary transmission system would provide a total capacity of 70 cubic feet per second (40 MGD), which would limit any planned outages to the low water demand months. This would give Reclamation only six to eight weeks to complete any maintenance. If the maintenance work requires more than eight weeks, it would need to be phased over two years. Because it would take approximately four weeks to construct, the temporary system would not be able to prevent water shortages during unplanned outages or emergencies.

While the construction of a temporary transmission system would allow for planned outages on the existing 84-inch pipeline, the planned outage would only be able to occur during the low demand season for approximately six to eight weeks. This would limit the amount of time available to Reclamation to complete repairs. The temporary transmission system would not be able to be constructed in time to prevent water shortages to SJWD and the City of Roseville during unplanned outages or emergencies.

3.2.3.2 Proposed Action

The Proposed Action would disturb an area of approximately five acres. Construction activities such as clearing, grading, and excavation of the pipeline trench would increase the potential for erosion. During the rainy season, stormwater runoff from the areas that have been cleared and graded may contain high levels of suspended sediments. Any discharge of this stormwater to existing waterways would violate existing water quality laws and could exceed Basin Plan requirements. Minimization Measure WQ-1 would reduce any potential water quality impacts. After construction, all disturbed areas would be revegetated to reduce erosion.

Excavation of the pipeline trench may require some dewatering. Preliminary geotechnical investigations indicate 50 to 70 gallons per minute of water flowing into the trench. Depending on the quality of this water, discharging this water to a surface water body could violate existing water quality standards. Mitigation Measure WQ-2 would reduce any potential water quality impacts.

As described in Chapter 2, operation of the Proposed Action would not change the timing or quantity of water received from Folsom Reservoir. The proposed bypass pipeline would be used to convey water from Folsom Reservoir to SJWD and the City of Roseville during planned or unplanned outages on the existing 84-inch raw water pipeline. The proposed bypass pipeline could also be used in conjunction with the existing 84-inch pipeline to reduce headloss. This would not result in an increase in water use; the same quantity of water currently delivered through the 84-inch pipeline would simply be conveyed through both pipelines. Daily water use would not change under the Proposed Action; existing water contracts contain maximum daily water deliveries that SJWD and the City of Roseville cannot exceed. Additionally, the SJWD and City of Roseville water treatment plants do not have the capacity to treat any additional water beyond the quantity currently contracted for. No new intake at Folsom Reservoir is needed as part of the Proposed Action; therefore, no change in the timing or quantity of water received by SJWD and the City of Roseville would occur. SJWD and the City of Roseville would continue to receive water from Folsom Reservoir according to the provisions in their existing water contracts. There would be no changes to water supply under the Proposed Action.

Under the Proposed Action, a bypass pipeline would be constructed that would allow continuous conveyance of contract water from Folsom Reservoir to SJWD and the City of Roseville water treatment plants during planned and unplanned outages of the existing 84-inch pipeline. Once it is operating, the proposed 72-inch bypass pipeline would be capable of delivering water at a rate of 165 cubic feet per second to SJWD and the City of Roseville water treatment plants. The bypass pipeline would be of a sufficient capacity to allow an unplanned outage of 30 days at any time of the year, and would also allow for a scheduled outage from December through March (approximately 120 days) for regular maintenance. The bypass

pipeline would be considered a beneficial impact for SJWD and the City of Roseville as it would increase water reliability and would allow Reclamation to complete all planned maintenance and repairs on the existing 84-inch pipeline in a single phase. This would be a beneficial impact.

3.2.4 Minimization Measures

WQ-1: NPDES Construction Permit and SWPPP
The construction contractor will be required to obtain a State General Permit for Storm Water Discharges Associated with Construction Activity according to the NPDES program. This will entail filing a NOI with the CVRWQCB and development and implementation of a SWPPP. The SWPPP will describe BMPs that will be implemented to contain stormwater runoff on-site and to reduce erosion and sedimentation.

WQ-2: Dewatering Permit
The construction contractor will be required to obtain a dewatering permit from the CVRWQCB prior to any dewatering. This will entail filing a NOI and may require water quality testing and monitoring. The construction contractor will be required to adhere to all permit conditions.

3.2.5 Cumulative Effects

The California Health Care Facility and Folsom DS/FDR Project would be under construction outside the project area, but still within close vicinity to the Proposed Action. These projects are required to implement SWPPP measures to control stormwater runoff and protect water quality and are not expected to contribute to cumulative water quality effects associated with stormwater runoff.

Construction of the Proposed Action would occur just north of the CCAO Building Replacement Project and in the same timeframe. The Building Replacement Project would involve construction of two new buildings and demolition of several existing buildings at Reclamation's CCAO Headquarters. The Proposed Action and the CCAO Building Replacement Project could both contribute to adverse water quality effects associated with pollutants in stormwater runoff. However, both projects would be required to obtain NPDES permits for construction and would implement SWPPPs to reduce erosion and runoff and contain stormwater on-site. With proper implementation of such measures, no cumulative effects to water quality are expected.

3.3 Air Quality

This section presents the affected environment and environmental consequences for air quality.

3.3.1 Regulatory Setting

This section presents the regulatory setting for air quality.

National Ambient Air Quality Standards

The primary statute that establishes ambient air quality standards and establishes regulatory authorities to enforce regulations designed to attain those standards is the Federal Clean Air Act (CAA). As required by the Federal CAA, USEPA has established and continues to update the National Ambient Air Quality Standards (NAAQS) for specific "criteria" air pollutants: ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), inhalable particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), and lead (Pb). Table 3.3-1 lists the NAAQS for these pollutants, which represent the levels of air quality deemed necessary by USEPA to protect the public health and welfare with an adequate margin of safety.

Table 3.3-1. National Ambient Air Quality Standards

Pollutant	Averaging Period	Standard, as parts per million by volume (ppmv)	Standard, as micrograms per cubic meter (µg/m^3)	Violation Criteria
Ozone (O_3)	8 hours	0.08	157	If exceeded on more than 3 days in 3 years
Carbon monoxide (CO)	8 hours	9	10,000	If exceeded on more than 1 day per year
	1 hour	35	40,000	If exceeded on more than 1 day per year
Nitrogen dioxide (NO_2)	Annual	0.053	100	If exceeded
Sulfur dioxide (SO_2)	Annual	0.03	80	If exceeded
	24 hours	0.14	365	If exceeded on more than 1 day per year
	3 hours	0.5	1,300	If exceeded on more than 1 day per year
Inhalable particulate matter (PM_{10})	24 hours	N/A	150	If exceeded on more than 1 day per year
Fine particulate matter ($PM_{2.5}$)	Annual	N/A	15	If exceeded
	24 hours	N/A	65 / 35[a]	If exceeded on more than 1 day per year

a. Lower standard (35 µg/m^3) adopted by USEPA, effective on December 18, 2006
Sources: 40 CFR Part 50; and 71 FR 61144.

Within the last three years, the USEPA has implemented the new 8-hour O_3 and $PM_{2.5}$ (24-hour and annual) NAAQS and has revoked the 1-hour O_3 and annual PM_{10} NAAQS. More recently, USEPA has adopted a more stringent 24-hour $PM_{2.5}$ standard, 35 micrograms per cubic meter ($\mu g/m^3$). However, area attainment designations (defined below) will not be made for approximately three years after implementation of the rule (December 18, 2006).

The Federal CAA requires states to classify air basins (or portions thereof) as either "attainment" or "non-attainment" with respect to criteria air pollutants, based on whether the NAAQS have been achieved, and to prepare air quality plans containing emission reduction strategies for those areas designated as "non-attainment." Sacramento County is in nonattainment for ozone (8-hour standard) and PM_{10} (24-hour standard). Table 3.3-2 summarizes the attainment status for all criteria pollutants.

Table 3.3-2. NAAQS Attainment Status (Sacramento County)

Pollutant	Federal Status
Ozone (O_3)	Nonattainment, Serious[a]
Inhalable particulate matter (PM_{10})	Nonattainment, Moderate[b]
Fine particulate matter ($PM_{2.5}$)	Attainment
Carbon monoxide (CO)	Maintenance
Nitrogen dioxide (NO_2)	Attainment
Sulfur dioxide (SO_2)	Attainment

Source: SMAQMD 2008.

a. On June 15, 2005, the USEPA revoked the 1-hour ozone standard in lieu of the 8-hour standard.
b. On December 18, 2006, the USEPA revoked the annual PM_{10} standard

State Implementation Plans

Counties or regions that are designated as Federal non-attainment areas for one or more criteria air pollutants must prepare a State Implementation Plan (SIP) that demonstrates how the area will achieve attainment of the standards by the Federally-mandated deadlines. In addition, those areas that have been redesignated from non-attainment to attainment are required to have a maintenance plan that shows how the area will maintain the standard for up to 10 years.

Recent air quality monitoring data in the region indicates that the PM_{10} NAAQS has been achieved. Sacramento County has not submitted a request to redesignate the area as in attainment for PM_{10}. In addition to the official request to USEPA, the County would also need to submit a Maintenance Plan to the USEPA that would provide a 10-year plan for maintaining air quality in the region.

On February 14, 2008, the California Air Resources Board (CARB) submitted a letter to the USEPA requesting a voluntary redesignation of the 8-hour ozone standard for Sacramento County. CARB recommended that the classification be bumped up from "serious" to "severe-15." The revised classification was requested because the region would be unable to meet the Federal NAAQS by the deadline imposed for serious nonattainment. The region had previously been classified as "severe" nonattainment under the revoked 1-hour ozone standard.

General Conformity

Section 176 (c) of the CAA (42 U.S.C. 7506(c)) requires any entity of the Federal government that engages in, supports, or in any way provides financial support for, licenses or permits, or approves any activity to demonstrate that the action conforms to the applicable SIP required under Section 110 (a) of the Federal CAA (42 U.S.C. 7410(a)) before the action is otherwise approved. In this context, conformity means that such Federal actions must be consistent with a SIP's purpose of eliminating or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of those standards. Each Federal agency must determine that any action that is proposed by the agency and that is subject to the regulations implementing the conformity requirements will, in fact, conform to the applicable SIP before the action is taken. This project is subject to the General Conformity Rule because it is sponsored and supported by a Federal agency.

On November 30, 1993, USEPA promulgated final general conformity regulations at 40 Code of Federal Regulations (CFR) 93 Subpart B for all Federal activities except those covered under transportation conformity. The general conformity regulations apply to a proposed Federal action in a non-attainment or maintenance area if the total of direct and indirect emissions of the relevant criteria pollutants and precursor pollutants caused by the Proposed Action equal or exceed certain de minimis amounts, thus requiring the Federal agency to make a determination of general conformity. Table 3.3-3 presents the de minimis amounts for the region covering Sacramento County.

Table 3.3-3 General Conformity *de minimis* Thresholds for Sacramento County

Pollutant	Federal Status	De minimis Threshold (TPY)
PM_{10}	Nonattainment, Moderate	100
CO	Maintenance	100
NOx[a]	Nonattainment, Serious	50
VOC[a]	Nonattainment, Serious	50

TPY = tons per year

a. If Sacramento County is reclassified as severe nonattainment for ozone, then the de minimis threshold for NOx and VOC will be reduced to 25 TPY. Note: VOC = volatile organic carbon

Source: 40 CFR 93.153

Regardless of the Proposed Action's emissions relative to the de minimis amounts, if this total represents 10 percent or more of the area's total emissions of that pollutant, the action is considered regionally significant and the Federal agency must make a determination of general conformity. By requiring an analysis of direct and indirect emissions, USEPA intended the regulating Federal agency to make sure that only those emissions that are reasonably foreseeable and that the Federal agency can practicably control subject to that agency's continuing program responsibility will be addressed.

Air Quality Management at the Local Level

In addition to permitting and rule compliance, air quality management at the local level is also accomplished through Air Quality Management District (AQMD) imposition of environmental commitments on projects subject to CEQA. Specific to project construction emissions, CEQA requires mitigation of air quality impacts that exceed certain significance thresholds set by the local AQMD.

The Sacramento Metropolitan Air Quality Management District (SMAQMD) manages air quality in Sacramento County and coordinates with the other districts to develop SIP updates. In the SMAQMD, the construction significance thresholds are 85 pounds per day for Nitrogen Oxide (NOx) emissions, and 50 $\mu g/m^3$ for PM_{10} ambient concentrations.

3.3.2 Affected Environment

The air quality conditions for an area are typically the result of meteorological conditions and existing emission sources in an area.

3.3.2.1 Sacramento County Emissions Inventories

CARB has compiled the 2006 emission inventory for Sacramento County. Table 3.3-4 shows the results of this inventory.

Table 3.3-4. 2006 Emissions Inventory for Sacramento County

Source Category	2006 Annual Emissions (tons per year)					
	VOC	CO	NO_x	SO_x	PM_{10}	$PM_{2.5}$
Point Sources	2,865	1,372	1,358	26	737	358
Stationary Area Sources	6,278	14,622	1,128	44	14,133	3,657
Non-Road Mobile Sources	5,143	31,521	9,662	179	588	526
On-Road Mobile Sources	9,213	86,067	17,695	139	759	540
Total	**23,499**	**133,583**	**29,842**	**387**	**16,217**	**5,081**

Source: CARB 2007
VOC = volatile organic compound CO= carbon monoxide NO_x = nitrogen oxides
PM_{10} = inhalable particulate matter SOx= sulfur oxides $PM_{2.5}$ = fine particulate matter

On-road motor vehicles are the major source of volatile organic compounds (VOC), CO, and NOx emissions in Sacramento County. Other (off-road) mobile vehicles and equipment are the major source of SO_2 emissions, and contribute substantially to VOC, CO, and NOx emissions. Fugitive dust primarily from construction sites, paved and unpaved roadways, and farming operations is the major source of PM_{10} and $PM_{2.5}$, with substantial contributions from residential fuel combustion.

3.3.2.2 Monitoring Data – Criteria Pollutant Concentrations

Table 3.3-5 summarizes recent air quality data from the Sacramento (Del Paso Manor) monitoring station.

Table 3.3-5. Summary of Air Pollutant Monitoring Data in Sacramento

Criteria Air Pollutant and Station Location	Yearly Monitoring Data			NAAQS
	2005	2006	2007	
Carbon Monoxide (CO)				
Sacramento – Del Paso Manor				
Highest 8-hour concentration (ppm)	3.51	3.49	2.90	9
Days above NAAQS	0	0	0	
Ozone (O_3)				
Sacramento – Del Paso Manor				
Highest 8-hour concentration (ppm)	0.117	0.102	0.115	0.075
Days above NAAQS	19	24	10	
Coarse Particulate Matter (PM_{10})				
Sacramento – Del Paso Manor				
Highest 24-hour concentration (µg/m3)	72.0	63.0	70.0	150
Days above NAAQS	0	0	0	
Fine Particulate Matter ($PM_{2.5}$)				
Sacramento – Del Paso Manor				
Highest 24-hour concentration (µg/m3)	80.0	78.0	61.0	35
Annual mean (µg/m3)	11.5	13.1	12.3	15.0
Number of days above NAAQS	18	19	22	

Source: CARB 2008a; CARB 2008b

3.3.3 Environmental Consequences

This section presents the environmental consequences of the No Action Alternative and the Proposed Action related to air quality. The emissions values presented as part of this air quality analysis are the best estimates available.

The major thresholds are the General Conformity de minimis emission levels for CO, PM_{10}, and the O_3 precursors (NOx and VOC), as well as the NAAQS (NEPA). A project will have a significant adverse air quality impact if it either causes an exceedance of a standard (for pollutants in attainment) or makes a substantial contribution to an existing exceedance of an air quality standard (for pollutants in non-attainment).

3.3.3.1 No Action Alternative

Emission Inventories

Under the No Action Alternative, construction activities for the Proposed Action would not occur. Reclamation would construct a temporary pipeline to allow water deliveries to continue during maintenance on their existing 84-inch pipeline. Fugitive dust emissions were estimated using an emission factor developed by the Midwest Research Institute for construction projects (MRI 1996). Exhaust emissions were also calculated using emission factors generated from the EMFAC and OFFROAD models for on- and off-road truck trips, respectively. Daily NOx emissions (see Table 3.3-6) were estimated at 20 pounds per day, which is less than the SMAQMD's threshold for construction emissions of 85 pounds per day. The No Action Alternative would have minimal air quality impacts.

Table 3.3-6. Unmitigated Construction Impacts for the No Action Alternative

Type	Emission Estimates (lbs/day)								
	ROG/VOC[1]	CO	NO_x	SO_2	PM_{10}	$PM_{2.5}$	CO_2	N_2O	CH_4
Fugitive Dust	n/a	n/a	n/a	n/a	31	31	n/a	n/a	n/a
On-Road Traffic	1	10	18	0	1	1	2,677	n/a	0
Off-Road Traffic	0	1	2	0	0	0	234	0	0
Total	**1**	**11**	**20**	**0**	**32**	**32**	**2,911**	**0**	**0**

[1]EPA uses the definition of volatile organic compound (VOC) to incorporate those compounds that are sufficiently reactive in the atmosphere to form O_3; the State of California has defined reactive organic gases (ROG) for the same purpose. Although minor variations exist in the definitions of VOC and ROG, for most sources of concern in this document these variations are negligible and the terms are interchangeable.

ROG = reactive organic gas
VOC = volatile organic compound
CO= carbon monoxide
NO_x = nitrogen oxides
SO_2 = sulfur dioxide
PM_{10} = inhalable particulate matter
$PM_{2.5}$ = fine particulate matter
CO_2 = carbon dioxide
N_2O = nitrous oxide
CH_4 = methane

Emissions from the No Action Alternative would be less than one ton per year for PM_{10}, CO, NOx, and VOC; therefore, emissions would be less than the General Conformity de minimis thresholds in Table 3.3-3 and no further action under General Conformity is required.

Climate Change

The construction of the temporary pipeline in the No Action Alternative would results in emissions of greenhouse gases (GHG) from exhaust. Emission factors from the EMFAC and OFFROAD models were used to estimate emissions of carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). The global warming potential (GWP)[1] of each GHG will be used to calculate emissions of carbon dioxide equivalents (CO_2e). Consistent with California's Regulation of the Mandatory Reporting of Greenhouse Gas Emissions (17 CCR 95100), the GWP from the Intergovernmental Panel on Climate Change (IPCC) Second Assessment Report

[1] The GWP of a GHG is defined as the "radiative forcing impact of one mass-based unit of a given greenhouse gas relative to an equivalent unit of carbon dioxide over a given period of time." (17 CCR 95100)

(SAR) will be used to estimate CO_2e emissions. Table 3.3-7 provides a summary of GHG emissions associated with the No Action Alternative.

Table 3.3-7. Unmitigated GHG Construction Impacts for the No Action Alternative

Type	Emission Estimates (metric tons per year)		
	CO_2	CH_4	N_2O
On-Road Traffic	45.2	0.002	-
Off-Road Traffic	2.9	0.0003	-
Total	**48.1**	**0.002**	**-**
GWP	1	21	310
CO2e Emissions			
On-Road Traffic	45.2	0.03	-
Off-Road Traffic	2.9	0.01	-
Total CO_2e	**48.1**	**0.04**	**-**
GRAND TOTAL	**48.1**		

Source: CDM, 2009; 17 CCR 95100.

Although California does not have established thresholds of significance for GHG emissions, draft guidance from CARB recommends a threshold of 7,000 metric tons CO_2e per year for industrial projects (CARB 2008). Based on this guidance, GHG impacts from the No Action Alternative are expected to be minimal.

3.3.3.2 Proposed Action

Emission Inventories

Emissions of criteria pollutants would occur during construction activities at the proposed site. Typical construction activities, including site grading and hauling, would contribute to fugitive dust emissions or on- and off-site diesel exhaust emissions.

Construction impacts were estimated using the SMAQMD's Roadway Construction Emissions Model (Version 6.3.1, November 2008). This model is recommended by the air district to calculate emissions from linear sources like a pipeline. The model calculates fugitive dust from disturbed land and exhaust emissions for both on- and off-road vehicles. Default values in the model were modified with project-specific data provided by the design engineers. Table 3.3-8 summarizes the results of the emission calculations.

Table 3.3-8. Unmitigated Construction Impacts for the Proposed Action

Project Phases	Emission Estimates (lbs/day)				
	ROG/VOC	CO	NO_x	PM_{10}	$PM_{2.5}$
Grubbing/Land Clearing	2.1	13.4	17.5	2.6	1.1
Grading/Excavation	7.7	78.6	57.3	4.3	2.5
Drainage/Utilities/Sub-Grade	4.5	20.1	35.6	3.7	2.1
Maximum (lbs/day)	7.7	78.6	57.3	4.3	2.5
Total (tons/project)	0.5	4.0	3.8	0.3	0.2

ROG = reactive organic gas
VOC = volatile organic compound
NO_x = nitrogen oxides
PM_{10} = inhalable particulate matter
$PM_{2.5}$ = fine particulate matter

The SMAQMD has a threshold of significance for construction of 85 pounds per day for NOx (SMAQMD 2004). Emissions from the project are expected to be less than this threshold; therefore, the project would not result in significant air quality impacts from construction. Total annual emissions are predicted to be less than the General Conformity thresholds shown in Table 3.3-3; therefore, no further analysis under General Conformity is required. The Proposed Action would not exceed any of the thresholds of significance for NEPA or General Conformity.

Climate Change
Construction impacts for GHG were estimated using the SMAQMD's Roadway Construction Emissions Model (Version 6.3.1, November 2008). Although the model only predicts CO_2 emissions, emissions from CH_4 and N_2O are expected to be negligible; therefore, emissions of CO_2 only were used to evaluate significance. Based on the results of the model, CO_2 emissions were estimated at 381 metric tons. Since GHG emissions from the Proposed Project are less than CARB's draft threshold, GHG impacts are expected to be minimal.

3.3.4 Minimization Measures

No minimization measures are required.

3.3.5 Cumulative Effects

Although construction of the Proposed Action would lead to temporary air quality impacts, these impacts would be below the thresholds and would not be considered significant. The California Health Care Facility, CCAO Building Replacement Project, and Folsom DS/FDR Project would also contribute to air quality impacts, but all will be required to employ minimization measures to reduce emissions to below the threshold levels. According to SMAQMD, a project is not considered cumulatively significant for PM_{10} ,SO_2 ,and NO_2 if the project is not considered significant for project alone emissions, and the project is not cumulatively significant for ROG, NOx, and CO based on background concentration and project concentration. Since the Proposed Action would not be considered significant for

project emissions, the Proposed Action would not result in cumulative air quality impacts.

3.4 Biological Resources

This section presents the affected environment and environmental consequences for biological resources in the Proposed Action area. This section will also serve as the biological assessment for the project and has been prepared in accordance with legal requirements set forth under regulations implementing Section 7 of the Endangered Species Act (50 CFR 402; 16 U.S.C. 1536 (c)). Reclamation will serve as the lead Federal agency and will use this EA/IS to initiate consultation with the United States Fish and Wildlife Service (USFWS) and/or National Marine Fisheries Service (NMFS).

3.4.1 Regulatory Setting

This section describes the regulatory requirements for biological resources.

Endangered Species Act of 1973; 16 USC §1531 et seq.; 50 CFR Parts 17 and 222
The Endangered Species Act (ESA) requires Federal agencies to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of any listed species (according to the lists maintained by the USFWS and NMFS) or result in the destruction or adverse modification of habitat critical to such species' survival. To ensure against jeopardy, each Federal agency must consult with the USFWS and/or NMFS.

Migratory Bird Treaty Act (MBTA): 16 USC §703-711; 50 CFR Subchapter B
This act includes provisions for protection of migratory birds, including basic prohibitions against any taking not authorized by Federal regulation. The administering agency is the USFWS.

Clean Water Act of 1977; 33 USC §1251-1376; 30 CFR §330.5(a) 26
Section 404 of the CWA requires that a permit be obtained prior to any discharge of dredged or fill material into wetlands and waters of the United States. The Corps is the administering agency for Section 404 of the CWA and issues General Permits (for activities causing minimal adverse effects) and Individual Permits (for activities not covered under General Permits) for these activities.

The discharge of dredge or fill material to waters of the State is regulated under Section 401 of the CWA. Specifically in the State of California, the applicable RWQCB administers Section 401 and either issues or denies water quality certifications depending upon whether the proposed discharge or fill material complies with applicable State and Federal laws. In addition, policies and regulations governing the protection of the beneficial uses of the State's water resources must also be followed. All actions that require a CWA Section 404 permit from the Corps

also require a 401 water quality certification from the RWQCB, to ensure the discharge complies with State water quality regulations.

Executive Order 11990, Protection of Wetlands (May 24, 1977)
This order requires that Federal agencies minimize the destruction, loss or degradation of wetlands, and preserve and enhance the natural and beneficial values of wetlands.

California Endangered Species Act of 1984, California Fish and Game Code §2050-2098
This act includes provisions for the protection and management of species listed by the State as endangered or threatened, or designated as candidates for such listing. This act includes a requirement for consultation "to ensure that any action authorized by a State lead agency is not likely to jeopardize the continued existence of any endangered or threatened species…or result in the destruction or adverse modification of habitat essential to the continued existence of the species" (§2090). Plants of California declared to be endangered, threatened, or rare are listed at 14 CCR §670.2. Animals of California declared to be endangered, threatened, or rare are listed at 14 CCR §670.5. The administering agency is the California Department of Fish and Game (CDFG).

Native Plant Protection Act of 1977; California Fish and Game Code §1900 et seq.
This act lists State-designated rare and endangered plants and provides specific protection measures for identified populations. The administering agency is the CDFG. Additionally, the California Native Plant Society has created five lists of plants with varying degrees of concern from presumed extinct (List 1A) to plants of limited distribution (List 4). All of the plants constituting List 1B (plants rare, threatened or endangered in California and elsewhere) meet the definitions of Section 1901, Chapter 10 (Native Plant Protection Act) or Sections 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code, and are eligible for State listing. It is mandatory that they be fully considered during preparation of environmental documents relating to CEQA (CNPS 2008).

California Species Preservation Act of 1970; California Fish and Game Code §900-903
This act includes provisions for the protection and enhancement of the birds, mammals, fish, amphibians, and reptiles of California. The administering agency is the CDFG.

California Fish and Game Code §1930-1933
These code sections provide for the Significant Natural Areas program and database. The administering agency is the CDFG.

California Fish and Game Code §3503

This code section makes it unlawful to take, possess, or needlessly destroy any birds (including birds-of-prey) or the nest or eggs of any birds. The administering agency is the CDFG.

California Fish and Game Code §3511 and 5050
This code section prohibits the taking or possessing of birds and reptiles listed as "fully protected." The administering agency is the CDFG.

3.4.2 Affected Environment

3.4.2.1 Wetlands and Aquatic Resources

A wetland investigation of the project area was conducted on September 3, 2008 in accordance with the guidelines presented in the 2008 Corps Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region. Based on the investigation, there are no wetlands within the project area. However, during the survey, a drainage area was identified that extends north from the gravel access road, parallel to the Right Wing Dam and adjacent recreation trail.

While the project site does not include the nearby Folsom Reservoir, aquatic resources supported by the reservoir should be noted. Due to its stratification from April through November, the reservoir provides an upper, warm water layer as well as a coldwater pool in the deeper layers. This coldwater pool supports a sport fishery as it provides habitat for rainbow and brown trout, kokanee salmon, and Chinook salmon, which are stocked by the CDFG. The coldwater pool is also important to lower American River fall-run Chinook salmon and Central Valley steelhead through seasonal releases from the reservoir. The lower American River is designated critical habitat for Central Valley steelhead between Nimbus Dam and the Sacramento River. The lower American River has also been designated as critical habitat for spring-run Chinook salmon. CDFG operates the Nimbus Salmon and Steelhead Hatchery and the American River Trout Hatchery immediately downstream of Folsom Reservoir at Nimbus Dam.

3.4.2.2 Terrestrial Resources

Plant Communities
The project area consists mainly of disturbed areas associated with the existing pipeline and adjacent dam and reservoir. These areas are dominated by ruderal (weedy) vegetation, including invasive exotic plants such as yellow starthistle (*Centaurea solstitialis*), Italian thistle (*Carduus pycnocephalus*) and white sweet clover (*Melilotus albus*) (LSA 2003).

Patches of oak woodland occur within the project area, and include both blue oak (*Quercus douglasii*) and interior live oak (*Quercus wislizeni).* Foothill or gray pine (*Pinus sabiniana*) also occurs in association with oak woodlands in the project area. The upper canopy of these oak woodlands is dense in some areas with an understory

of shrubs, including blue elderberry (*Sambucus mexicana*) and ceanothus (*Ceanothus* spp.), and herbaceous vegetation, including poison oak (*Toxicodendron diversilobum*) and exotic Himalayan blackberry (*Rubus discolor*). In other areas, the tree canopy is more open with groundcover dominated by exotic grasses such as bromes (*Bromus* spp.) and other ruderal species (Entrix 2006).

While no riparian areas or wetlands, such as vernal pools and freshwater marsh, exist within the project area, a drainage area extends north from the gravel access road, parallel to the Right Wing Dam and adjacent recreation trail. This drainage likely receives seasonal water and contains some riparian vegetation, including cottonwood trees.

Wildlife

Oak woodlands provide habitat for a variety of wildlife species within the project area, including invertebrates, amphibians, reptiles, birds, and mammals. Common invertebrate species include ants, beetles, termites, and lady bugs. These invertebrates are prey for amphibians such as California newt (*Taricha torosa*), ensatina salamander (*Ensatina eschscholtzii*), and slender salamander (*Batrachoseps attenuatus*), reptiles, including western fence lizard (*Sceloporus occidentalis*), and birds such as Nuttall's woodpecker (*Picoides nuttallii*), white-breasted nuthatch (*Sitta carolinensis*), Hutton's vireo (*Vireo huttoni*), western scrub-jay (*Aphelocoma californica*), and oak titmouse (*Baeolophus inornatus*). Raptors, including red-tailed hawk (*Buteo jamaicensis*) and great horned owl (*Bubo virginianus*) utilize emergent pine trees as perching sites to search for prey such as deer mouse (*Peromyscus maniculatus*) and California vole (*Microtus californicus*) (LSA, 2003).

Along with foraging habitat, trees and shrubs within the project area provide nesting habitat for many bird species as well as shelter from large mammal predators such as mountain lion (*Felis concolor*) and bobcat (*Felis rufus*) and bird-eating raptors including the Cooper's Hawk (*Accipiter cooperii*).

Special-Status Species

Table 3-10 includes a list of all special-status species (Federal and State listings) provided by the Sacramento USFWS website and downloaded from the California Natural Diversity Database (CNDDB) as potentially occurring within the Folsom 7.5-minute quad. This table identifies species status, habitat requirements, and the likelihood of occurrence at the project site. The project area does not contain critical habitat for any of these special-status species.

Since much of the area is disturbed, habitat does not exist in the project area for many of the special-status species listed in Table 3.4-1. There is potential for six special-status species (one invertebrate, one amphibian, three birds, and one mammal) to occur due to the presence of suitable habitat on-site. Special-status species with the potential to occur in the project area are discussed below.

Table 3.4-1. Special Status Species and Critical Habitat Summary

Species	Federal Status/ Critical Habitat	State Status	Habitat Requirements	Likelihood of Occurrence in the Project Area
Fish				
Sacramento River Winter-run ESU Chinook Salmon (*Onchorhynchus tshawytscha*)	FE/CH	SE	Ocean and freshwater rivers and streams	None – no water bodies onsite
Central Valley Spring-Run ESU Chinook Salmon (*Onchorhynchus tshawytscha*)	FT/CH	ST	Ocean and freshwater rivers and streams	None – no water bodies onsite
Central Valley ESU Steelhead (*Onchorhynchus mykiss*)	FT/CH		Ocean and freshwater rivers and streams	None – no water bodies onsite
Delta Smelt (*Hypomesus transpacificus*)	FT/CH	ST	Freshwater rivers and streams.	None – no water bodies onsite
Invertebrates				
Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*)	FT		Elderberry shrubs	Potential – elderberry shrubs occur onsite
Vernal Pool Fairy Shrimp (*Branchinecta lynchi*)	FT		Vernal pools and seasonal wetlands	None – habitat does not occur onsite
Vernal Pool Tadpole Shrimp (*Lepidurus packardi*)	FE		Vernal pools and seasonal wetlands	None – habitat does not occur onsite
Conservancy Fairy Shrimp (*Branchinecta conservation*)	FE		Vernal pools and seasonal wetlands	None – habitat does not occur onsite
Amphibians				
California red-legged frog (*Rana aurora draytonii*)	FT/CH	CSC	Quiet, permanent water in woods, forest clearings, riparian areas, and grasslands	Potential – no suitable habitat within project area but isolated populations in the northern area of Folsom Reservoir
California Tiger Salamander (*Ambystoma californiense*)	FT	CSC	Grasslands and lowest foothill regions of Central and Northern California, which is where its breeding habitat (long-lasting rain pools) occurs. During dry-season, uses small mammal burrows as refuge	Unlikely - breeding habitat does not occur onsite
Western Spadefoot Toad (*Spea hammondii*)		CSC	Open areas with sandy or gravelly soils, in a variety of habitats. Rainpools are necessary for breeding.	Unlikely – breeding habitat does not exist onsite
Reptiles				
Giant Garter Snake (*Thamnophis gigas*)	FT	CT	Prefers freshwater marsh and low gradient streams. Has adapted to drainage canals and irrigation ditches.	None - waterbodies are not available onsite

Table 3.4-1. Special Status Species and Critical Habitat Summary

Species	Federal Status/ Critical Habitat	State Status	Habitat Requirements	Likelihood of Occurrence in the Project Area
Northwestern Pond Turtle (*Actinemys marmorata marmorata*)		CSC	Found in ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches, with abundant vegetation. Nesting occurs in adjacent uplands.	Unlikely – water bodies are not available onsite
Birds				
American peregrine falcon (*Falco peregrinus anatum*)	FD	CE/CFP	Protected edges of high cliffs, usually adjacent to marshes, lakes, or rivers that support plentiful bird populations.	Unlikely – habitat does not occur onsite
Swainson's Hawk (*Buteo swainsoni*)		CT	Open grasslands, prairies, farmlands, and deserts with trees for nesting.	Potential – limited habitat occurs onsite
White-Tailed Kite (*Elanus leucurus*)		CFP	Agricultural areas, grasslands, marshes, savannas, and other open land or sparsely wooded areas.	Potential – limited habitat occurs onsite
Loggerhead Shrike (*Lanius ludovicianus*)		CSC	Edge habitat along roadsides and hedgerows in agricultural regions.	Potential - limited habitat occurs onsite
Tricolored Blackbird (*Agelaius tricolor*)		CSC	Ponds and other wet areas with abundant vegetation for nesting and adjacent grasslands for foraging.	Unlikely – habitat does not occur onsite
Mammals				
Pallid Bat (*Antrozous pallidus*)	--	CSC	Deserts, grasslands, shrublands, woodlands, and forests. Most common in open dry habitats with rocky areas for roosting. Also may use hollow trees and abandoned buildings	Potential – trees onsite could provide limited roosting habitat
Plants				
Brandagee Clarkia (*Clarkia biloba ssp. brandegeeae*)		CNPS 1B	Chaparral and cistmontane woodlands	Unlikely – habitat does not occur onsite
Pincushion Navarretia (*Navarretia myersii ssp. myersii*)		CNPS 1B	Vernal pools	None – habitat does not occur onsite
Sacramento Orcutt Grass (*Orcuttia viscid*)	FE	CE, CNPS 1B	Vernal pools	None – habitat does not occur onsite

Acronyms and Abbreviations:

CCH	=	candidate critical habitat	CSC	=	California species of concern
CE	=	state endangered	FE	=	Federal endangered
CT	=	state threatened	FSC	=	Federal species of concern
CFP	=	California fully protected	FT	=	Federal threatened
CH	=	critical habitat	PCH	=	proposed critical habitat
CNPS 1B	=	California Native Plant Society List 1B			

Valley Elderberry Longhorn Beetle

The valley elderberry longhorn beetle (VELB) *(Desmocerus californicus dimorphus)* is a Federally-threatened species known to occur at the project site (Entrix 2006). After a 5-Year Review completed in FY2006, the U.S. Fish and Wildlife Service recommended delisting the VELB based on its recovery. However, until publication of a Final Rule formally delisting the species, it is still considered threatened and is treated as such for this project.

This invertebrate feeds on elderberry shrubs, which generally occur along waterways and in floodplains with remnant stands of riparian vegetation. Within the project area, this species has been noted by exit holes in blue elderberry. The project area does not contain critical habitat for the species.

A protocol-level survey of elderberry shrubs was conducted on August 20, 2008 within the project area. During the survey, the number of elderberry shrubs in the project area, their stem diameters, and the presence and number of exit holes formed by VELB as they exit the branch were determined (Figure 3.4-1).

Based on the elderberry survey, six elderberry shrubs that contain stems measuring 1.0 inch or greater in diameter at ground level were identified within 100 feet of the proposed construction activities.

California Red-Legged Frog

The California red-legged frog (*Rana aurora draytonii*) is Federally listed as threatened (Federal Register 1996) and is a California species of special concern. Critical habitat was designated in 2001. Critical habitat for the species was proposed on November 3, 2005 (Federal Register 2005), and the final rule was published on April 16, 2006 (Federal Register 2006). No critical habitat is within the project area. Historically, the California red-legged frog occurred in coastal mountains from Marin County south to northern Baja California, and along the floor and foothills of the Central Valley from about Shasta County south to Kern County (Jennings et al. 1992). Currently, this subspecies generally only occurs in the coastal portions of its historic range; it is apparently extirpated from the valley and foothills and in most of southern California south of Ventura County.

California red-legged frogs are usually associated with aquatic habitats, such as creeks, streams and ponds, and occur primarily in areas having pools approximately 3 feet deep, with adjacent dense emergent or riparian vegetation (Jennings and Hayes 1988). California red-legged frogs generally seem to stay near aquatic habitats; however, they are known to travel large distances seasonally within their local aquatic and terrestrial habitats (Jennings and Hayes 1994). Adults move between breeding and foraging habitats in spring and summer (Jennings and Hayes 1994). A few records exist that may indicate that they move into terrestrial riparian thickets during the fall (Jennings and Hayes 1994). During high water, this species are rarely

Figure 3.4-1
Raw Water Pipeline Bypass Project
Elderberry Shrub Survey, August 20, 2008

CDM

observed (Jennings and Hayes 1994). Some individuals have been observed concealed in pockets or small mammal burrows beneath banks stabilized by shrubby riparian growth during periods of high water (Jennings and Hayes 1994); however, much of the spatial ecology of this species is poorly understood.

California red-legged frogs breed from November to March. Egg masses are attached to emergent vegetation and hatch within fourteen days (Jennings and Hayes 1994). Metamorphosis generally occurs between July and September. Post-metamorphs grow rapidly; males can reach sexual maturity by their second year after metamorphosis and females by their third year. Both sexes may not reproduce until three or four years after metamorphosis (Jennings and Hayes 1994).

The project area consists of developed and upland habitats and there have been no recorded sightings of the California red-legged frog within or near the project area. Perennial and intermittent creeks and Folsom Reservoir may provide marginally suitable habitat for this species. According to the CNDDB, a juvenile California red-legged frog was observed along a small drainage adjacent to Fitch Way on the east side of the reservoir approximately one mile up the South Fork American River arm.

Swainson's Hawk

The Swainson's hawk *(Buteo swainsoni)* is a state threatened species that requires large, open grasslands and suitable nest trees typically adjacent to water. While there is potential for Swainson's hawks to forage in the project area, habitat is marginally suitable at best. As with Cooper's hawks, Swainson's hawks breed from March through August, with peak activity from late May through July.

White-tailed Kite

The white-tailed kite (*Elanus leucurus*is) is a California Fully Protected Species that occurs year-round in coastal and valley lowlands associated with agricultural areas, grasslands, marshes, savannas, and other open land or sparsely wooded areas. Suitable foraging habitat exists in the project area. However, since dense, broad-leaved deciduous trees are needed for nesting and roosting, the white-tailed kite is unlikely to nest in the project area.

Loggerhead Shrike

The loggerhead shrike *(Lanius ludovicianus)* is a California species of concern. This species is found in lowlands and foothills with scattered shrubs, trees, posts, fence lines, or other perches. Suitable foraging habitat is present within the project area, although breeding is unlikely due to the disturbed nature of the forest habitat. The breeding season is from March to August.

Pallid Bat

The pallid bat *(Antrozous pallidus)* is a California species of concern typically found in rocky, mountainous areas near water, desert scrub, and open, sparsely vegetated

grasslands. This species roosts in rock cracks, hollow trees, caves and abandoned buildings. Since suitable habitat is present, there is potential for the pallid bat to occur within the project area.

3.4.3 Environmental Consequences

This section presents the environmental consequences of the No Action Alternative and the Proposed Action related to biological resources.

3.4.3.1 No Action Alternative

Under the No Action Alternative, Reclamation would construct a temporary pipeline to allow water deliveries to continue during maintenance on their existing 84-inch pipeline. This temporary pipeline would not result in any biological impacts because it would be constructed above-ground, parallel to the existing 84-inch pipeline, in an area that is already cleared of vegetation. The No Action Alternative would require some truck traffic to deliver and remove the temporary pipeline. Contact between construction vehicles and wildlife may injure or kill terrestrial wildlife, reducing local population numbers. Introduction of loud noises into the environment may alter feeding, nesting, and resting habits of wildlife, particularly birds. Elderberry shrubs are not located within the temporary pipeline alignment and would not be directly adversely affected by the temporary pipeline; however some temporary, indirect effects associated with dust and vibration may occur during construction. Minimal impacts to vegetation, wildlife, and special-status species or their habitat could occur from the No Action Alternative.

3.4.3.2 Proposed Action

The Proposed Action entails construction of a buried raw water pipeline parallel to the existing 84-inch raw water pipeline owned by Reclamation. Operation of the Proposed Action would require minimal maintenance such as visual inspections and periodic testing of the valves.

Impacts to Wetlands
There are no wetlands or other aquatic resources within the Proposed Action area. The drainage that extends north from the gravel access road, parallel to the Right Wing Dam and adjacent recreation trail may be considered a Waters of the U.S. As such, a Nationwide Permit from the Corps would be required under Section 404 of the CWA if the drainage is altered by construction of the proposed pipeline. Minimization Measure BIO-1 would reduce any impacts associated with alteration to this drainage.

Impacts to Aquatic Resources in Folsom Reservoir and the Lower American River
Operation of the Proposed Action would not affect aquatic species in Folsom Reservoir or the Lower American River. The proposed pipeline would connect to the

existing 84-inch pipeline and no new intake at the reservoir would be constructed. Operation of the proposed pipeline, either by itself or used in conjunction with the existing 84-inch pipeline, would not change the quantity or timing of water withdrawn from the reservoir under the affected environment. As described in Section 3.2.3.2, there would be no changes to surface water elevation, storage, or operation of Folsom Reservoir under the Proposed Action. Therefore, the project would not affect the reservoir's coldwater pool, critical habitat within the Lower American River, or other aquatic resources.

Impacts to Vegetation

Construction of the Proposed Action would result in the temporary and permanent loss of vegetation through clearing, grading, excavation for the proposed pipeline trench, and the disturbance of areas for staging of vehicles and equipment. Native vegetation, including trees, occurring within the construction and staging areas may be affected by construction activities through direct removal or damage to roots from heavy equipment. Currently it is estimated that a total of 58 trees (21 oak, 29 pine, 8 deciduous) within the construction zone would need to be removed prior to construction and 13 trees would require trimming. Construction may also result in impacts to vegetation from dust and increased erosion. Since the pipeline would be underground, maintenance may entail ground disturbance along the length of the pipeline as well as disturbance of vegetation at the ground surface for equipment to gain access to the pipeline. Implementation of Minimization Measure BIO-2 would require protection of trees and their roots during construction and re-vegetation of disturbed areas to restore native vegetation and reduce impacts from erosion immediately following construction. Implementation of Minimization Measure BIO-3 would require all trees to be removed during the non-nesting season to the extent possible, to reduce potential impacts to nesting and breeding birds. These measures would reduce impacts to minimal level.

Impacts to Wildlife

There could be short-term, temporary adverse effects to wildlife during construction. Contact between construction vehicles and wildlife may injure or kill terrestrial wildlife, reducing local population numbers. Introduction of loud noises into the environment may alter feeding, nesting, and resting habits of wildlife, particularly birds. Removal of trees could disturb nesting and breeding birds. These effects could also occur during operation, if maintenance of the underground pipeline requires heavy equipment to disturb vegetation during access or excavation. Implementation of Minimization Measure BIO-3 would ensure that impacts to birds would be minimized or avoided. In addition, Minimization Measure BIO-4 would ensure that construction personnel receive training on how to minimize effects on wildlife.

Impacts to Valley Elderberry Longhorn Beetle

Impacts to the Federally-threatened VELB may occur if elderberry shrubs are disturbed during construction of the proposed pipeline or its maintenance during

operation. Direct contact with elderberry shrubs as well as indirect effects from dust created during construction could harm the elderberry shrubs and cause adverse effects to individual beetles, pupae, or larvae as well as loss of habitat. Based on the elderberry survey, six elderberry shrubs that contain stems measuring 1.0 inch or greater in diameter at ground level were identified within 100 feet of the proposed construction activities. One shrub (#13 - see Figure 3-1) is within the proposed pipeline alignment and would be directly affected by the Proposed Action. This shrub may require transplanting. The five remaining shrubs may be affected but are not likely to be adversely affected by the Proposed Action. Minimization Measure BIO-5 would reduce any effects that may occur as a result of construction. Table 3.4-2 provides stem count information for the elderberry shrubs within 100 feet of proposed construction.

Table 3.4-2. Stem Counts for Elderberry Shrubs Within 100 feet of Proposed Construction

GPS Waypoint#	Shrub ID#	Max Diameter at Ground Level[1]			Exit Holes?[2]	Transplant?[3]
		1≥3	*3≥5*	*>5*	Y/N	Y/N
2	9	1	1		N	N
2	10	1	1		N	N
8	17		4	1	N	N
9	18		1	2	N	N
11	20	1			N	N
13	22	2			N	Y

[1] Shrub diameters were measured at the soil level unless excessive woody debris, vines, or duff precluded this action. In this case, duff and debris were compacted as much as possible and the measurement was taken at the lowest possible location.
[2] All stems measuring one inch or greater in diameter at ground level on a single shrub are considered occupied when exit holes are present anywhere on the shrub.
[3] Any shrub that would be directly affected by construction would be relocated.

Impacts to California Red-Legged Frog

There have been no recorded sightings of the California red-legged frog within or near the project area; therefore, the California red-legged frog is not likely to occur within the project area. No adverse effects to the California red-legged frog are expected with the construction of any project features.

Impacts to Special-Status Birds and Bats

Special-status birds with the potential to occur within the project vicinity include Swainson's hawk, white-tailed kite, and loggerhead shrike. In addition, one special-status bat, the pallid bat, has the potential to occur. Construction disturbance during the breeding season could result in impacts to special-status birds from the incidental loss of fertile eggs or nestlings, or nest abandonment. Likewise, construction noise could impact active roosting sites of the pallid bat if they occur within the project area. With implementation of Minimization Measure BIO-6, impacts to special-

status bird and bat species would be reduced. As a result, special-status birds and bats are not likely to be adversely affected by construction.

3.4.4 Minimization Measures

Based on the above analysis, the following minimization measures will be incorporated into the project to reduce potential impacts to biological resources.

BIO-1: Compliance with Section 404 and 401 of the Clean Water Act
In the event that the drainage ditch that extends north from the gravel access road, parallel to the Right Wing Dam and adjacent recreation trail is found to be a Waters of the U.S. subject to Section 404 of the CWA, a Nationwide Permit will be obtained from the Corps prior to construction. Additionally, a CWA Section 401 permit will be obtained from the CVRWQCB to ensure the proposed discharge complies with all State water quality requirements. All permit requirements will be implemented, including re-contouring of the disturbed area to pre-project conditions.

BIO-2: Tree Protection and Re-vegetation
In order to minimize direct impacts to trees within the construction area, tree protection measures will be implemented prior to construction and re-vegetation will occur immediately following construction.

Tree protection measures would reduce impacts to trees during construction and may include the following measures:

1. Protective fencing will be installed at the Root Protection Zone of trees that would be directly impacted by construction. The Root Protection Zone is defined as the area within a circle with a radius equal to the greatest distance from the trunk to any overhanging foliage in the tree canopy. Posts will be placed where they will not impact tree roots.

2. No construction staging or disposal of construction materials or byproducts including but not limited to paint, plaster, or chemical solutions will be allowed in the Root Protection Zone.

3. All work conducted in the ground within the Root Protection Zone of any protected tree will be accomplished with hand tools to the extent feasible.

4. "Natural" or pre-construction grade will be maintained in the Root Protection Zone.

5. In areas where the grade around the protected tree will be lowered, some root cutting may be unavoidable. Cuts will be clean and made at right angles to the roots. When practical, roots will be cut back to a branching lateral root. Any necessary root pruning will be conducted by qualified personnel. Cut

roots subject to open air conditions longer than a few hours should be covered with burlap and maintained in a moist condition until covered by soil.

6. Root damage and soil compaction caused by heavy equipment traversing the Root Protection Zone in locations where it is unavoidable will be minimized by applying plywood or mulch in the Root Protection Zone to avoid soil compaction.

7. All pruning will be conducted by a certified arborist or other qualified contractor.

8. To compensate for the loss of oak trees, mitigation will be required at a one to one ratio. The site for mitigation has not been determined and will require further coordination with Reclamation for design and location.

Once construction has been completed, revegetation will occur to restore vegetated areas disturbed during construction to pre-construction conditions, to the extent feasible. Native plant species used for revegetation will be selected based on existing vegetation in the project area and consultation with USFWS and Reclamation.

BIO-3: Nesting Migratory Birds, Including Raptors
To the extent possible, removal of trees and potential bird breeding habitat in the project area will occur between September 1 and January 31, when birds are not expected to be nesting within the project area, in order to comply with the MBTA. Prior to any tree removal and construction, a qualified biologist or ornithologist will conduct preconstruction field surveys in and adjacent to the project area for nesting migratory birds, including raptors. Surveys would be conducted during the season immediately preceding tree removal and grading operations when birds are building and defending nests or when young are still in nests and dependent on the parents. If no nests are found during the surveys, tree removal and grading may proceed. If nests are found, construction activities including tree removal shall not be conducted within a buffer zone designated by USFWS or the CDFG around the nest(s) until after the breeding season (February to the end of August), or until a wildlife biologist determines that the young have fledged (usually late-June through mid-July).

BIO-4: Biological Resources Awareness Training
Prior to construction, including clearing of vegetation and grading, mandatory training regarding the biological resources present at the Proposed Action site will be provided to all construction personnel. The training will be developed and provided by a qualified biologist familiar with the sensitive species that may occur in the project area and will provide educational information on the natural history of these species, reporting sightings, required minimization measures to avoid impacts, and

penalties for not complying with biological minimization requirements. All project personnel will be required to receive training before they start working.

BIO-5: Elderberry Minimization
The following measures are subject to and contingent upon a Section 7 consultation with the USFWS. Reclamation will implement the following measures proposed in the VELB Conservation Guidelines (Guidelines) (USFWS 1999).

Where possible, the complete avoidance of elderberry shrubs would be enforced. Avoidance measures would include the establishment and maintenance of a 100-foot temporary construction buffer zone surrounding elderberry shrubs containing stems measuring 1.0 inch or greater in diameter at ground level. The proposed staging area and access roads contain elderberry shrubs that would be within 20 feet of project activities. These shrubs; however, are currently exposed to ongoing Reclamation operation and maintenance (O&M) activities similar to the Proposed Action (the USFWS issued a Biological Opinion (BO) for Reclamation O&M actions). All elderberry shrubs within 20 feet of project activities will also be flagged or fenced for easy identification. Construction crews will be briefed on the need to avoid elderberry shrubs and no vehicles will enter within the 20 foot buffer zone.

Additionally, the following dust control measures will be implemented:

- Water or otherwise stabilize the soil prior to ground disturbance;
- Cover haul trucks;
- Employ speed limits on unpaved roads;
- Apply dust suppressants;
- Physically stabilize soil with vegetation, gravel, recrushed/recycled asphalt or other forms of physical stabilization;
- Reduce number of vehicle trips;
- Install one or more grizzlies, gravel pads, and/or wash down pads adjacent to the entrance of a paved public roadway to control carry-out and trackout;
- Minimize vegetation clearing; and
- Revegetate post-construction.

Elderberry shrubs that cannot be avoided would be transplanted if technically feasible. All elderberry shrubs containing stems measuring 1.0 inch or greater in

diameter at ground level would be transplanted to a USFWS approved conservation area between November 1 and February 15.

Each elderberry shrub with stem measuring 1.0 inch or greater in diameter at ground level that is adversely affected would be compensated with elderberry seedlings or cuttings in accordance with the Guidelines. Elderberry shrubs that cannot be feasibly transplanted will be compensated at a ratio two-times the normal amount. A minimum survival rate of at least 60 percent of the elderberry shrubs would be maintained throughout the monitoring period. If survival drops below this level, additional seedlings would be planted. Stock for plantings would be obtained from local sources.

Native plants associated with elderberry shrubs at the project area or similar reference sites would be planted in accordance with the Guidelines. A minimum survival rate of at least 60 percent of the associated native plants would be maintained throughout the monitoring period. If survival drops below this level, additional seedlings or cuttings would be planted. Only stock from local sources would be used, unless such stock is not available, per the Guidelines.

BIO-6: Conduct Nesting Bird Surveys, Roosting Bat Surveys, and Establish No-Disturbance Buffers, as Appropriate, for Special-Status Species
If construction activities must occur during the breeding season for special-status birds and/or bats (February 1–August 31), the following measures will be implemented:

Retain a qualified wildlife biologist who is experienced in identifying special-status birds and bats and their habitat to conduct nesting-bird surveys and bat roosting surveys in and within 500 feet of the project site, where feasible. These surveys should be conducted within one week, but no more than 30 days, prior to initiation of construction activities at any time between February 1 and August 31.

If no active nests or roosts are detected during surveys, then no additional minimization measures are required.

If special-status birds or bats are found in the construction area or in the adjacent surveyed area, a no-disturbance buffer will be established around the nesting/roosting location to avoid disturbance or destruction of the nest site/roost site until after the breeding season or after a wildlife biologist determines that the young have fledged (usually late-June through mid-July). The extent of these buffers will be determined by a wildlife biologist in consultation with the applicable resource agencies (i.e., USFWS and/or CDFG) and will depend on the level of noise or construction disturbance, line of site between the nest/roost and the disturbance, ambient levels of noise and other disturbances, and other topographical or artificial barriers. These factors will be analyzed and used by a qualified wildlife biologist to

assist the USFWS and/or CDFG in making an appropriate decision on buffer distances.

3.4.5 Cumulative Effects

Although construction of the Bypass Pipeline Project could result in biological resource impacts, these impacts would be reduced by minimization measures discussed above. The California Health Care Facility, New Folsom Bridge Project, CCAO Building Replacement Project, and Folsom DS/FDR Project would also have the potential to affect biological resources. Although most of the projects are occurring concurrently, all will employ measures to reduce impacts and will be required to consult with the USFWS for potential impacts to Federal listed species. Because all of the projects, including the Proposed Action, will minimize impacts as needed and required, no cumulatively considerable impacts on biological resources are expected.

3.5 Geology and Soils

This section presents the affected environment and environmental consequences for geology and soils.

3.5.1 Regulatory Setting

This section describes the regulatory setting for geology and soils.

Clean Water Act
The CWA includes provisions for reducing soil erosion to protect water quality. The CWA makes it unlawful for any person to discharge any pollutant from a point source (including a construction site) into navigable waters, unless a permit is obtained under its provisions. This pertains to construction sites where soil erosion and storm runoff as well as other pollutant discharges could affect downstream water quality. The NPDES process, established by the CWA, is intended to meet the goal of preventing or reducing discharges of pollutants to waterways. Section 3.1 provides further details about the NPDES process.

Clean Air Act
The CAA also includes provisions for reducing soil erosion that are relevant to air and water quality. On construction sites, exposed soil surfaces are vulnerable to wind erosion and small soil particulates are carried into the atmosphere. Suspended particulate matter (PM_{10} and $PM_{2.5}$) is one of the six criteria air pollutants of the CAA.

3.5.2 Affected Environment

3.5.2.1 Topography

Folsom Reservoir is situated in the foothills of the Sierras, residing in a valley at the confluence of the North and South Forks of the American River. The reservoir extends into the canyons of the North and South Forks of the American River. The project area is at the toe of Right Wing Dam, an earthen embankment structure that is part of Folsom Reservoir. The slope surrounding Folsom Reservoir is generally steep to moderate with exception to the flatter areas of the Peninsula Campground area, Goose Flat, and Granite Bay.

3.5.2.2 Geology

Geologic maps of the region characterize the project area as Mesozoic granite, quartz, monzonite, grandorite, and quartz diorite. Rock outcrops of hard, slightly- to unweathered diorite are found along the eastern portion of the project area. The western portion of the project area consists of exposed weathered bedrock and soil from deposition and/or severe weathering (Kleinfelder Inc. 2003).

3.5.2.3 Soils

Soils in higher elevations around Folsom Reservoir are generally thin and have numerous outcroppings of igneous and metamorphic rock. Loose soils of decomposed granite are found on the north and west portions of Folsom Reservoir. These soils are highly erodible and excessive erosion has been observed along the north shore. Clayey and denser soils are concentrated on the south end. Generally, all soils surrounding Folsom Reservoir are of low shrink-swell potential.

Previous soil borings completed in the project area show approximately 2.5 feet of soils underlain by weathered bedrock that is assumed to be diorite (Kleinfelder Inc. 2003). The soils are relatively granular.

3.5.2.4 Minerals

Decomposed granite is the only potential mineral resource identified in the project area. Although this rock has not been used for commercial purposes, decomposed granite north of the project area is being used as embankment material for the Folsom DS/FDR Project.

3.5.2.5 Seismic Issues

No seismic issues or unstable soils occur in the project area. The potential for landslides is low because of relatively thin soils. Although the Bear Mountain fault occurs approximately 7 miles east of the project area, this fault has not been designated as active by the U.S. Geological Survey and the ground shaking potential

for the region is generally low. No Alquist-Priolo earthquake zones have been mapped in or around the project area (Kleinfelder Inc. 2003).

3.5.2.6 Naturally Occurring Asbestos

Naturally occurring asbestos (NOA) generally occurs in mafic or ultramafic metamorphic rock. The project site does not contain mafic or ultramafic rock and is therefore not likely to contain NOA. According to a 2006 U.S. Geological Survey Special Report, an area approximately 1 to 2 miles south and east of the project site contains ultramafic rock and has been designated as "moderately likely to contain NOA" (California Department of Conservation 2006).

3.5.3 Environmental Consequences

This section presents the environmental consequences of the No Action Alternative and the Proposed Action related to geology and soils.

3.5.3.1 No Action Alternative

Under the No Action Alternative, no permanent pipeline would be constructed. The temporary pipeline would be assembled above ground in an area largely cleared of vegetation. If construction of the temporary pipeline results in the disturbance of an area greater than one acre, a NPDES Construction General Permit and SWPPP would need to be obtained. With proper implementation of the SWPPP, impacts associated with soil erosion would be minimal.

3.5.3.2 Proposed Action

Construction of the Proposed Action would likely require several areas to be cleared and graded. Additionally, a trench would be excavated in preparation for placement of the new pipeline. During construction, temporary erosion may occur in areas that have been disturbed, especially during the rainy season. The minimization measures described in Section 3.2.4 for Water Resources would require implementation of a SWPPP that would include BMPs to reduce erosion and stormwater runoff. With proper implementation of the SWPPP, impacts associated with stormwater runoff and erosion would be minimal.

Excavation of the trench for the new pipeline would result in up to 12,000 cubic yards of excess soil material. This soil material would become the property of the construction contractor and would be trucked off-site for disposal. Backfill material would be trucked to the construction site from off-site sources to be placed in the trench. The loss of soil material is expected to be a minimal impact as the trench would be backfilled with off-site materials.

According to the Department of Conservation, California Geological Survey's Relative Likelihood for the Presence of Naturally Occurring Asbestos in Eastern Sacramento County (2006), the location for the Proposed Action does not contain naturally occurring asbestos. There would be no naturally occurring asbestos impacts from implementation of the Proposed Action.

3.5.4 Minimization Measures

Minimization Measure WQ-1 described in Water Resources in Section 3.2.4 would minimize impacts to geology and soils.

3.5.5 Cumulative Effects

While several proposed or ongoing projects in the area (California Health Care Facility, New Folsom Bridge, Folsom DS/FDR Project, CCAO Building Replacement Project) could result in soil erosion and loss of topsoil, each of these projects will implement project-specific minimization including a SWPPP (as required by the NPDES Construction General Permit) that will help to reduce erosion and stormwater runoff. Because all projects, including the Proposed Action will implement measures to reduce their potential geology and soils effects, the cumulative effects from the Proposed Action on geology and soils would not be substantial.

3.6 Visual Resources

This section describes the affected environment and environmental consequences for visual resources.

3.6.1 Regulatory Setting

There are no specific regulations associated with visual resources.

3.6.2 Affected Environment

The aesthetic value of a view and perceived visual images are determined by both natural and artificial landscape features. Attributes including contrasts, forms and textures exhibited by geology, hydrology, vegetation, wildlife, and man-made features all contribute to the value. Depending on prior experiences, individual experiences of the natural environment will vary; therefore, visual effects analyses tend to be highly subjective in nature.

The project area is dominated by the slope of Right Wing Dam, which has a structural height of 145 feet and a length of 6,700 feet. The visible material on Right Wing Dam mainly consists of rip-rap in the form of grantic boulders. Reclamation's existing aboveground 84-inch raw water pipeline is the main linear feature in the

project area and runs parallel to the toe of Right Wing Dam. Figure 3.6-1 shows Reclamation's existing 84-inch raw water pipeline and Right Wing Dam. This picture was taken in 2007 prior to the Folsom DS/FDR Project. Work in 2008 on the Right Wing Dam structure has resulted in the removal of vegetation on and around

Figure 3.6-1
Existing 84-inch Raw Water Pipeline and Right Wing Dam

the base of Right Wing Dam, which is not shown in this picture. Some vegetated areas are visible near the existing 84-inch pipeline including bushes, oak trees, and wetlands (Kennedy Jenks 2003).

The American River Bike Trail passes through the western half of the project area. Views from the trail include Right Wing Dam, the CCAO access road, and the existing 84-inch pipeline. Southeast of the project area consists mainly of CCAO buildings and undeveloped areas with vegetation. Sections of the western portion of the project area were recently cleared of vegetation for fire breaks.

No scenic vistas are present directly within the project area; however, nearby scenic vistas include Beal's Point and Beal's Point Campground, Observation Point, and Folsom Point along the reservoir shoreline.

3.6.3 Environmental Consequences

This section presents the environmental consequences of the No Action Alternative and the Proposed Action related to visual resources.

3.6.3.1 No Action Alternative

Under the No Action Alternative, a permanent bypass pipeline would not be constructed. A temporary pipeline system would be constructed to allow maintenance and repairs to the existing 84-inch pipeline. This temporary system would run parallel to the existing 84-inch pipeline and would be placed above the ground. Construction of the temporary system would require the transport of materials to the site and construction workers and equipment to assemble the pipeline. The visual impacts of construction equipment, vehicles, workers, and the pipeline system would be temporary because the pipeline would be removed after the required maintenance is complete. Overall, visual impacts from a temporary pipeline system are considered short-term and minimal.

3.6.3.2 Proposed Action

Under the Proposed Action, a new pipeline would be constructed parallel to Reclamation's existing 84-inch raw water pipeline. Temporary visual impacts from equipment and vehicle staging, clearing grading, and stockpiling of excavated material may occur during construction. However, the project area would be re-contoured and returned to pre-project conditions after construction is complete. The visual impacts associated with construction would be temporary and minimal.

Figure 3.6-2
Existing East Surge Tower

The proposed new pipeline would be buried and therefore not visible to anyone in the area. Permanent visual impacts to the area would include one new surge tower that would be, similar to two surge towers already present on the existing 84-inch pipeline (See Figure 3.6-2). The surge tower would be approximately 120 feet tall with a 12 foot diameter and would be beige to match the existing pipeline and surge towers. The new surge tower would be located

directly beside the easterly most existing surge tower near Folsom Dam. It would not be visible from the American River Bike Trail; however it would be visible from certain areas on Reclamation's property. The only other permanent visible feature of the bypass pipeline would be the two tie-ins where the new bypass pipeline would connect to the existing 84-inch pipeline.

Because the project area is generally not visible to the public, and already contains linear features such as Right Wing Dam and the existing 84-inch pipeline with surge towers, the permanent visual impacts are considered minimal.

3.6.4 Minimization Measures

No minimization measures are required.

3.6.5 Cumulative Effects

No other known cumulative projects would affect the visual appearance of the project site; therefore, no cumulative effects are expected.

3.7 Transportation and Circulation

This section describes the affected environment and environmental consequences for transportation and circulation.

3.7.1 Regulatory Setting

In order to determine how existing transportation facilities are functioning, a Level of Service (LOS) is assigned to the facility under various traffic flow conditions. Roadway segment LOS is calculated based on functional classification (type of roadway), number of lanes, and daily traffic volumes.

Progressively worsening traffic conditions are given the letter grades "A" through "F". While most motorists consider an "A", "B", "C" LOS as satisfactory, LOS "D" is considered marginally acceptable. Congestion and delay are considered unacceptable to most motorists and given the LOS "E" or "F" ratings.

The operating conditions for each level of service are provided below:

- *LOS A* describes conditions with little or no delay to motorists
- *LOS B* represents a desirable level with relatively low delay to motorists
- *LOS C* describes conditions with average delays to motorists

- *LOS D* describes operations where the influence of congestion becomes more noticeable. Delays are still within an acceptable range.
- *LOS E* represents operating conditions with high delay values. This level is considered by many agencies to be the limit of acceptable delay.
- *LOS F* is considered to be unacceptable to most drivers with high delay values that often occur, when arrival flow rates exceed the capacity of the intersection.

Table 3.7-1 presents the LOS standards and associated thresholds for the roadways in the project area under local jurisdiction. The local LOS standards and associated thresholds are generally developed for long-term traffic operations, such as permanent traffic that would result from a new housing development.

Table 3.7-1. Local and Regional LOS Standards and Thresholds

Regulatory Agency	Standards	Thresholds
City of Folsom	LOS C	If the "no project" LOS is LOS C or better and the project-generated traffic causes the intersection level of service to degrade to worse than LOS C (i.e., LOS D, E or F) then the Proposed Action must implement mitigation measures to return the intersection to LOS C or better. If the "no project" LOS is worse than LOS C (i.e., LOS D, E or F) and the project-generated traffic causes the overall average delay value at the intersection to increase by five seconds or more, mitigation measures must be implemented to improve the intersection to the "no project" condition or better. It is not necessary to improve the intersection to LOS C. If the "no project" LOS is worse than LOS C (i.e., LOS D, E, or F) and the project-generated traffic causes the overall delay value at the intersection to increase by less than five seconds, then the traffic impact is considered less than significant and no mitigation is required.
Placer County	LOS C on rural roadways, except within one-half mile of state highways where the standard shall be LOS D. LOS C on urban/suburban roadways except within one-half mile of state highways where the standard shall be LOS D.	Require mitigation to LOS C unless an intersection is within one-half mile of a State Highway, in which case the LOS standard is "D". This applies where the existing LOS is at these levels, or better. If the LOS is worse than these standards, seek to mitigate impacts back to the existing level.

Source: Placer County General Plan 1994; City of Folsom General Plan 1993

The California Department of Transportation (Caltrans) has established concept LOS for the regional routes in the vicinity of the Proposed Action. The State Route 50 Transportation Concept Report (1998) establishes LOS F as the concept LOS for Route 50 in Sacramento County (from Hazel Avenue to the El Dorado County Line) and LOS E in El Dorado County. The guide for the Preparation of Traffic Impact

Studies (Caltrans 2002) also recommends using the transition between LOS C and LOS D to evaluate potential effects to the State highway system from local agency projects. The Interstate 80 Transportation Concept Report (2001) establishes LOS E as the concept LOS for Interstate 80 from Madison Avenue to Sierra College Boulevard (segments 3 and 4). The existing LOS for these segments in the year 2000 was LOS F. One Segment further north, from Sierra College Boulevard to Ophir Road has a concept LOS of E and an LOS of D in the year 2000 (Caltrans 2001).

While LOS for roadway segments is defined as volume-to-capacity ratios, LOS for an intersection (signalized or unsignalized) is determined by control delay. Intersection LOS is based on the intersection turn lane configuration, type of traffic control (signal or stop sign), and peak-hour traffic volumes. All of the intersections are controlled by traffic signals and many of the signals are operated as a system. LOS criteria for intersections are summarized in Table 3.7-2. These criteria are developed for long-term traffic operations, not short-term construction traffic.

Table 3.7-2. Intersection LOS Criteria

LOS	Roadway V/C	Signalized Intersection Delay (Seconds)
A	≤0.29	≤10.0
B	≤0.47	>10.0 and ≤20.0
C	≤0.68	>20.0 and ≤35.0
D	≤0.88	>35.0 and ≤55.0
E	≤1.0	>55.0 and ≤80.0
F	-	>80.0

Source: Transportation Research Board 2000

3.7.2 Affected Environment

The area around Folsom Reservoir is primarily suburban, low density development. Transportation facilities and services include interstate and state highways, local roads and streets, local transit including local bus service and a light rail line from the City of Folsom to downtown Sacramento. Also, a number of bike paths/routes accompany major roads. Finally, a number of commuter bus services are provided within the counties and cities in the area. The roads analyzed in detail in this section are under the jurisdictions of Placer County (including the Community of Granite Bay) and the City of Folsom. While there is a description of the regional transportation routes and traffic patterns involved in this project, the focus of the analysis is limited to the immediate area of Auburn-Folsom Road and related intersections.

3.7.2.1 Roadway Segments and Intersections

The existing roadway segments and intersections considered in this analysis are listed below and shown in Figure 3.7-1.

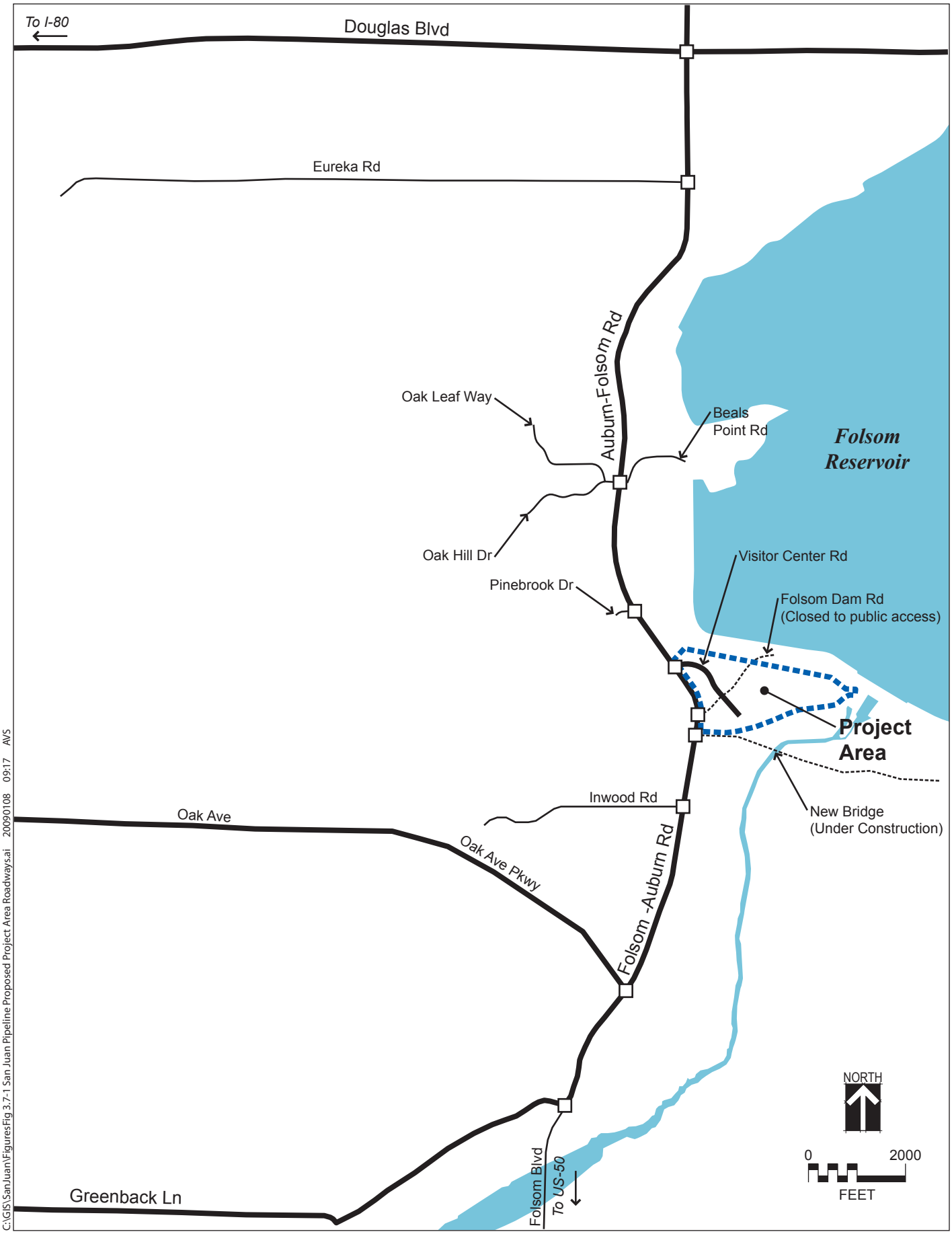


Figure 3.7-1
Project Area Roadways

CDM

Roadway Segments:

- Auburn-Folsom Road – Douglas Blvd. to Eureka Rd.
- Auburn-Folsom Road – Eureka Rd. to Oak Leaf Way/Oak Hill Dr.
- Auburn-Folsom Road – Oak Hill Dr. to Reclamation Visitors Center Rd.
- Auburn-Folsom Road – Reclamation Visitors Center Rd. to Inwood Rd.
- Auburn-Folsom Road – Inwood Rd. to Oak Ave. Pkwy.
- Auburn-Folsom Road – Oak Ave. Pkwy to Greenback Ln.

Intersections:

- Auburn-Folsom Road/Douglas Blvd.
- Auburn-Folsom Road/Eureka Rd.
- Auburn-Folsom Road/Oak Leaf Way/Oak Hill Dr.
- Auburn-Folsom Road/Pinebrook Drive
- Auburn-Folsom Road/Reclamation Visitors Center Rd.
- Auburn-Folsom Road/Folsom Dam Bridge connection
- Auburn-Folsom Road/Inwood Road
- Auburn-Folsom Road/Oak Ave. Pkwy.
- Auburn-Folsom Road/Greenback Ln.

Description of Existing Roadways and Intersections

Auburn-Folsom Road

Auburn-Folsom Road is functionally classified as an undivided arterial and provides north-south access between the cities of Auburn to the north and Folsom to the south. Beginning at the intersection of Greenback Lane/Riley Street/Folsom Boulevard, Auburn-Folsom Road is a four lane divided roadway. Heading north, Auburn-Folsom Road continues with two lanes in each direction, becoming an undivided roadway outside of the City of Folsom limits, to its intersection with Folsom Dam Road. Continuing north, the road narrows to one lane in each direction, crosses the Sacramento/Placer County line, and remains a two-lane undivided roadway to the Douglas Boulevard intersection. The speed limit is posted at 50 miles per hour (mph). Land use along Auburn-Folsom Road is mixed; commercial, residential, and

light industrial; however, in downtown Folsom the land use becomes mainly commercial.

Major intersections that have the potential to be affected by the implementation of the Proposed Action include:

Auburn-Folsom Road at Greenback Lane: The Folsom Boulevard/Auburn-Folsom Road at Greenback Lane intersection flow is comprised of four approaches. The northbound approach on Folsom Boulevard (on the American River Bridge) has two exclusive left turn lanes, two through lanes, and a right turn lane. The Auburn-Folsom Road southbound approach and Greenback Lane westbound approaches consist of an exclusive left turn lane, two through lanes, and a right turn lane. The eastbound Greenback Lane approach lane configuration is two exclusive left turn lanes, one through lane, and a channelized right turn lane. Greenback Lane eastbound has a marked bicycle lane on the south side of the roadway. Pedestrian crosswalks are provided on all four intersection approaches and include pedestrian pushbuttons. The intersection is signalized. The intersection currently experiences a LOS F during the peak hour periods.

Auburn-Folsom Road at Oak Avenue Parkway: The intersection of Auburn-Folsom Road at Oak Avenue Parkway consists of four intersection approaches. The Auburn-Folsom Road approaches both have an exclusive left turn lane and two through lanes. The Oak Avenue Parkway approaches both have a single shared lane. Pedestrian crosswalks are provided across the Auburn-Folsom Road approaches with pedestrian pushbuttons and signal heads; however, there are no sidewalks present within the vicinity of the intersection. The intersection of Auburn-Folsom Road at Oak Avenue Parkway is signalized. This intersection currently experiences a LOS D during the peak hour periods.

Folsom Bridge (East Natoma Street and Auburn-Folsom Road): This bridge, the subject of the Folsom Dam Raise/Folsom Bridge Draft Supplemental EIS/EIR (May 2006), is currently under construction with an anticipated opening date of 2009. The new bridge is planned to have four lanes for traffic plus bike lanes (Class I and Class II) running east and west. The intersection of Folsom Bridge and Auburn-Folsom Road will consist of three intersection approaches.

Auburn-Folsom Road at Inwood Road: The traffic flow at this intersection consists of three intersection approaches. The Auburn-Folsom Road northbound approach has an exclusive left turn lane and two through lanes. The Auburn-Folsom southbound approach has two lanes, one through and one shared through/right. Inwood Road comes into the intersection from the west with an exclusive left turn land and an exclusive right turn lane. There are no sidewalks present in the vicinity of the Auburn-Folsom Road at Inwood Road intersection; however, pedestrian crosswalks are present across the northbound and eastbound approaches. The

intersection is signalized. Recent capacity analysis data for this intersection were not evident.

Auburn-Folsom Road at Reclamation's Visitors Center Road: The Auburn-Folsom Road at Reclamation's Visitors Center Road consists of three approaches. The Auburn-Folsom southbound approach has two through lanes and an exclusive left turn lane. The Auburn-Folsom northbound approach has two lanes, one through and one shared through/right. The Reclamation Visitors Center Road comes into the intersection from the east with an exclusive left turn lane and a shared through/right turn lane. The intersection is signalized. Recent capacity analysis data for this intersection were not evident.

Auburn-Folsom Road at Pinebrook Drive: The Auburn-Folsom Road at Pinebrook Drive intersection traffic flow consists of four approaches; three approaches are roadways, the fourth a driveway. The Auburn-Folsom Road northbound approach has an exclusive left turn lane and one through lane. The Auburn-Folsom Road southbound approach consists of a through lane and an exclusive right turn lane. The Pinebrook Drive approach lane configuration is one exclusive left turn lane and one right turn lane. There are no marked pedestrian crosswalks; however, there is a short section of sidewalk on the Auburn-Folsom Road southbound approach that connects Pinebrook Road to the commercial property to the north. The intersection is signalized. Recent capacity analysis data for this intersection were not evident.

Auburn-Folsom Road at Oak Leaf Way and Beal's Point Road: The intersection is comprised of four approaches. Auburn-Folsom Road northbound consists of an exclusive left turn lane and one through lane. The southbound Auburn-Folsom Road approach has an exclusive left turn lane, one through lane, and a right turn lane. Oak Leaf Way comes into the intersection with a shared left/through lane and an exclusive right turn lane. Beal's Point Road consists of a single general use lane. Crosswalks are present across the northbound Auburn-Folsom Road , Oak Leaf Way, and Beal's Point Road approaches. There are no marked bicycle lanes or sidewalks within the vicinity of the intersection. The Auburn-Folsom Road at Oak Leaf Way/Beal's Point Road intersection is signalized. This intersection was analyzed in the Folsom Dam Raise/Folsom Bridge Draft Supplemental EIS/EIR and identified to have LOS B in the AM peak (7 a.m. - 9 a.m.) and LOS C in the PM peak (4 p.m. – 6 p.m.).

Auburn-Folsom Road at Eureka Road: The Auburn-Folsom Road at Eureka Road intersection has four approaches; three roadway approaches and one driveway access. The northbound approach on Auburn-Folsom Road consists of an exclusive left turn lane and a through lane; southbound consists of an exclusive left turn lane, one through lane, and an exclusive right turn lane. The Eureka Road approach from the west has a shared left/through lane and an exclusive right turn lane. A driveway access is directly across the intersection from Eureka Road. Pedestrian crosswalks

are provided across the Auburn-Folsom Road northbound approach and the Eureka Road approach. There are no sidewalks within the vicinity of the intersection. The Auburn-Folsom Road at Eureka Road intersection is signalized. This intersection currently experiences a LOS B during the peak hour periods.

Auburn-Folsom Road at Douglas Boulevard: The Auburn-Folsom Road at Douglas Boulevard intersection is comprised of four intersection approaches. The Auburn-Folsom Road southbound, and both Douglas Boulevard approaches, consist of one exclusive left turn lane, two shared through lanes, and an exclusive channelized right turn lane. The Auburn-Folsom Road northbound approach consists of an exclusive left turn lane, one shared left/through lane, one through lane, and exclusive channelized right turn lane. All four approaches have sidewalks present on both sides in the vicinity of the intersection. Pedestrian access is provided by crosswalks from each corner of the intersection to the channelization islands; and across each leg of the intersection from island to island. Pedestrian pushbuttons and signal heads are provided for all crossings. The intersection is signalized. This intersection currently experiences a LOS D during the peak hour periods.

3.7.2.2 Existing Traffic Volumes

Data on existing traffic volumes and LOS for roadway segments and intersections were gathered from a variety of sources. The Folsom Dam Raise/Folsom Bridge Draft Supplemental EIS/EIR, (2006) conducted traffic counts in 2004. Volume data was combined with roadway information and LOS capacity thresholds (Table 3.9-5) to determine existing LOS for each transportation project area roadway segment. Volume data for 2007 and 2008 was obtained from Placer County and the City of Folsom as well as projections described in the Folsom DS/FDR Draft EIS/EIR (2006).

The Folsom Dam Raise/Bridge traffic counts represent the most recent comprehensive traffic count data for the area. Data is reported as being collected on Tuesdays, Wednesdays, or Thursdays. The peak hour traffic volumes were counted during the a.m. (7:00 to 9:00) and p.m. (4:00 to 6:00) peak periods (Corps 2006). In cases where 2004 traffic counts were not available, either historical counts (2002 or 2003) were factored up to 2004 conditions based on historic growth rates in the transportation project area or the daily volume was estimated from peak hour counts. Table 3.7-3 summarizes the traffic volumes (measured in Average Daily Trips (ADT)) and the most current LOS for the portion of Auburn-Folsom Road in this analysis. The results in Table 3.7-3 indicate that each of the roadway segments currently do not meet their minimum acceptable LOS thresholds.

Table 3.7-3: Existing Traffic Volume Data (2004)

Roadway	Location	Jurisdiction	Functional Class	ADT (2004)	ADT (2007)	LOS
Auburn-Folsom Road	Douglas Boulevard to Eureka Road	Placer County	2A	30,900[1]	25,321	F
Auburn-Folsom Road	Eureka Road to Oak Hill Drive	Placer County	2A	26,500	--	F
Folsom-Auburn Road	Oak Hill Drive to Folsom Dam Road	Placer County/City of Folsom	2A	31,300[1]	--	F
Folsom-Auburn Road	Folsom Dam Road to Oak Avenue	City of Folsom	4AU	28,600[1]	37,077	E

Source: Adapted from USACE 2006, Reed 2008, Rose 2008.
Notes: [1] ADT volume factored up to 2004 conditions

The most recent data available for City of Folsom roadways was collected in June 2007 at Oak Ave. Parkway. ADT for this section was reported as 37,077 (Table 3.7-3) (personal communication, Reed 2008).The most recent data available for Placer County roadways was collected in 2007 just south of Douglas Boulevard. The average ADT over three days was 25,321 (Table 3.7-3) (personal communication, Rose 2008).

The Folsom DS/FDR Draft EIS/EIR estimated 2008 traffic conditions (calculated in ADT, with an assumed background growth of 3 percent per year) along local routes. This data is presented in Table 3.7-4 below.

Table 3.7-4: Projected Future (2008) Traffic Volume Conditions

Roadway	Location	ADT	Code	LOS
Folsom-Auburn Road	Oak Hill Drive to Folsom Dam Road	41,509	4AU	F
Folsom-Auburn Road	Folsom Dam Road to Oak Avenue	22,042	4AU	D
Auburn-Folsom Road	Douglas Boulevard to Eureka Road	35,329	4AU	F
Auburn-Folsom Road	Eureka Road to Oak Hill Drive	31,415	2A	F

Source: Reclamation et al. 2006

3.7.2.3 Existing Intersection LOS

The Folsom DS/FDR Draft EIS/EIR also provides existing LOS calculations for local intersections (current to 2004). The LOS is based on the existing traffic control, lane configurations, and peak hour traffic volumes. The results are summarized in Table 3.7-5 below. A V/C value of less than 1.0 indicates that the roadway volume is less than the capacity, whereas a V/C value greater than 1.0 indicates that the

roadway volume is greater than the roadway capacity. The intersection of Folsom-Auburn Road and Greenback Lane is operating above its capacity, with an LOS F**.**

Table 3.7-5: Existing Intersection LOS (2004)

Intersection[1]	AM Peak		PM Peak	
	Delay (sec/vehicle) V/C[2]	LOS	Delay (sec/vehicle) V/C	LOS
Auburn-Folsom Rd/Douglas Blvd.	40.9	D	37.7	D
Auburn-Folsom Rd/Eureka Rd	19.3	B	14.7	B
Auburn-Folsom Rd/Oak Hill Dr	13.6	B	20.1	C
Folsom-Auburn Rd/Oak Ave	**39.6**	**D**	**36.7**	**D**
Folsom-Auburn Rd/Greenback Ln	>80.0 1.32	F	>80.0 1.11	F

Source: Fehr & Peers 2005, as cited in USACE 2006
[1]All study intersections are signalized
[2]V/C – volume to capacity ratio is reported only under LOS F conditions.
Bold indicates intersections that are influenced by adjacent intersections. Actual delays and LOS may be worse.

3.7.3 Environmental Consequences

This section describes the environmental consequences of the No Action Alternative and the Proposed Action related to traffic and circulation.

3.7.3.1 No Action Alternative

The No Action Alternative would involve construction of a temporary transmission system that includes four parallel 24-inch diameter pipelines. Construction and disassembly of these pipelines is expected to take eight weeks (four weeks to construct the pipelines and four weeks to disassemble and remove the pipelines). Traffic impacts would stem from three key activities: delivery and removal of the temporary pipeline, delivery and removal of other construction materials (including strapping, couplings, and temporary blocking), and workers commuting to the site.

Transporting the pipe to the construction site would result in 16 total truck trips per day for four weeks. Disassembly of the pipeline would also require 16 total truck trips per day for four weeks. It is estimated that there would be approximately 20 workers at peak construction. This would result in 40 trips per day during four weeks of construction and four weeks of disassembling the pipeline. Delivery and removal of other equipment necessary for construction would result in four total truck trips per day during peak construction.

Based on the above information, peak construction traffic generated by the No Action Alternative would result in an increase of 60 total trips per day along project

area roadways. Construction-related traffic would cause a percentage increase in ADT of less than one percent, as shown in Table 3.7.6 below.

Overall, the No Action Alternative would not result in a degradation of LOS and would not be expected to add any noticeable congestion to local roadways or intersections. Traffic increases from the No Action alternative would be negligible.

Table 3.7-6: ADT and LOS on Auburn-Folsom Road under the No Action Alternative

Roadway	Location	Jurisdiction	Functional Class	Existing ADT (2004)[1]	Existing LOS	Peak Construction ADT	Construction LOS	% ADT Increase
Auburn-Folsom Road	Douglas Boulevard to Eureka Road	Placer County	2A	30,900[1]	F	30,960	F	0.19%
Auburn-Folsom Road	Eureka Road to Oak Hill Drive	Placer County	2A	26,500	F	26,560	F	0.22%
Folsom-Auburn Road	Oak Hill Drive to Folsom Dam Road	Placer County/City of Folsom	2A	31,300[1]	F	31,360	F	0.19%
Folsom-Auburn Road	Folsom Dam Road to Oak Avenue	City of Folsom	4AU	28,600[1]	E	28,660	E	0.20%

Source: USACE 2006
Notes: [1] ADT volume factored up to 2004 conditions

3.7.3.2 Proposed Action

Permanent or long-term traffic volume increases or changes in traffic patterns are expected to be minimal as a result of this project. Therefore, any incremental transportation impacts associated with implementation of the Proposed Action are generally limited to the construction timeframe. The analysis presented in this section is focused on those impacts occurring from, and during, peak construction activities.

Construction is expected to start in the fall of 2009 and would last approximately eight months. During construction, traffic would include trucks hauling soil to and from the site, and hauling pipe segments, concrete, and other construction materials. Water trucks would also be used; however, these vehicle miles are not factored into this analysis since the daily miles traveled by water trucks would be contained within Reclamation property, not on local roadways. This analysis assumes all truck traffic would approach from Highway 50 and would use Auburn-Folsom Road to access the project site.

Traffic impacts from soil hauling, delivery of materials, and worker commute trips are calculated in number of trips per day for an approximate distinct time period as follows. There would be approximately 480 cubic yards per day excavated and hauled off and the same amount imported for backfill. This would be accomplished with 48 dump trucks (96 trips) per day for approximately 25 working days (5 weeks).

During peak construction it is also anticipated that up to 20 workers would be travelling to and from the site each day, from up to 45 miles away, depending on the contractor. This would add an additional 40 trips per day to the site during peak construction and 20 trips per day during other periods of construction.

Additional sources of traffic increases during construction would come from trucks transporting pipe, pre-cast concrete supports, and appurtenances to the site. Transportation of these materials is expected to require an additional eight trucks per day (16 trips) over a period of approximately eight days, for the pipe; and, an additional one truck per day (two trips) over approximately three weeks, for the concrete. This would add approximately 18 trips per day during the peak construction period.

Given the above information, total peak construction-related traffic would add approximately 154 trips per day to Auburn-Folsom Road between Greenback Lane and Douglas Boulevard. This would result in an increase in traffic along Auburn-Folsom Road as shown in Table 3.7-7.

Table 3.7-7: ADT and LOS on Auburn-Folsom Road under the Proposed Action

Roadway	Location	Jurisdiction	Functional Class	Existing ADT (2004)[1]	Existing LOS	Peak Construction ADT	Construction LOS	% ADT Increase
Auburn-Folsom Road	Douglas Boulevard to Eureka Road	Placer County	2A	30,900[1]	F	31,054	F	0.49%
Auburn-Folsom Road	Eureka Road to Oak Hill Drive	Placer County	2A	26,500	F	26,654	F	0.58%
Folsom-Auburn Road	Oak Hill Drive to Folsom Dam Road	Placer County/City of Folsom	2A	31,300[1]	F	31,454	F	0.48%
Folsom-Auburn Road	Folsom Dam Road to Oak Avenue	City of Folsom	4AU	28,600[1]	E	28,754	E	0.53%

Source: USACE 2006
Notes: [1] ADT volume factored up to 2004 conditions

The above analysis shows that construction activities would be expected to cause an increase in ADT of between 0.48 and 0.58 percent during periods of peak construction. Given that the current ADT is between 26,500 and 31,300 along Auburn-Folsom Road in the project area (LOS F, except for the section of Folsom-Auburn Road from Folsom Dam Road to Oak Avenue), an increase of approximately half a percent would cause a negligible difference in LOS. The traffic increases resulting from construction of the Proposed Action would be temporary, only lasting the duration of construction activities. Construction traffic volumes from the Proposed Action would not degrade the LOS on Auburn-Folsom Road.

In order to analyze impacts to intersection LOS, data from the Folsom Dam Raise/Folsom Bridge Draft Supplemental EIS was used. Impact analysis from this EIS calculated intersection delay and resulting LOS after bridge operation. Table 3.7-8 summarizes this data.

Table 3.7-8 shows that operation of the new Folsom Bridge is anticipated to decrease intersection LOS in the vicinity of the Proposed Action (compared to 2004 conditions in Table 3.7-5). As calculated above (Table 3.7-7), Proposed Action vehicle trips during peak construction would result in negligible traffic increases to area roadways; therefore, peak construction traffic would not be expected to degrade the LOS at any study area intersection above conditions already projected for the study area.

Table 3.7-8: Study Area Intersection LOS – Post-Folsom Bridge Operation

Intersection	AM Peak		PM Peak	
	Delay V/C[1]	LOS	Delay V/C	LOS
Auburn-Folsom Road/Douglas Boulevard	48.1	D	59.9	E
Auburn-Folsom Road/Eureka Road	44.0	D	35.7	D
Auburn-Folsom Road/Oak Hill Drive	>80.0 1.17	F	>80.0 1.18	F
Folsom-Auburn Road/Oak Ave	68.6	E	34.7	C
Folsom-Auburn Road/Greenback Lane	>80.0 1.18	F	>80.0 1.15	F

Source: Adapted from USACE 2006.
Notes: [1] V/C ratio reported only under LOS F conditions

Operation of the bypass pipeline would result in minimal traffic. Routine maintenance over the lifetime of the pipeline could include: exercising of valves, checking the cathodic protection system (approximately every six months), and

walking the alignment periodically (approximately one to two times per year) for a visual inspection (personal communication, Kennedy Jenks 2008). Minimal operations traffic would not be expected to degrade the LOS at any study area intersection nor increase the average delay value at any Auburn-Folsom Road intersection in the city of Folsom by more than five seconds.

Overall, traffic increases from construction and operation of the Proposed Action would be considered temporary and minimal.

3.7.4 Minimization Measures

No minimization measures are required.

3.7.5 Cumulative Impacts

As described above in Table 3.7-3, existing traffic volumes on some of the roadways and intersections analyzed for the Proposed Action are currently operating below their applicable LOS standards. Projects with the potential to specifically affect traffic and circulation in the project vicinity include the New Folsom Bridge, the Folsom DS/FDR Project, the CCAO Building Replacement Project, and the California Health Care Facility.

Since no environmental documentation has been completed for the California Health Care Facility, it is not known how traffic would be affected by this project. The Notice of Preparation for the project states that construction traffic would access the site using the new Folsom Bridge. Once constructed, the facility is expected to require 1,600 new staff. It is unknown whether this project would be under construction at the same time as the Proposed Action. However, the Proposed Action would be temporary and would not cause an increase in ADT of over 0.58 percent; therefore any cumulative effects would be considered temporary and minimal.

The new Folsom Bridge Project is expected to be open by spring 2009, before construction begins for the Proposed Action. The new bridge may help to alleviate some traffic congestion on certain roads, but it may also increase congestion as it has the potential to attract more trips to the area. The Proposed Action, in consideration with the New Folsom Bridge, is not expected to contribute to any cumulative traffic effects. The Proposed Action is temporary and would add a minimal amount of traffic to existing roads.

The Proposed Action has the same anticipated start year as the CCAO Building Replacement project. Traffic-related increases and impacts related to construction and operation of the new CCAO buildings would add a minimal amount of vehicle trips to the local roadways in the project vicinity. The majority of traffic increases would take place during the period of peak construction (approximately 27 weeks in duration) and would be expected to generate an increase in ADT of approximately

0.2 percent. There would be no traffic increases during operation of the new CCAO buildings. Potential overlapping construction for the CCAO and SJWD pipeline would last approximately 5-6 months and would result in an approximate total increase of 214 trips per day or a combined increase in ADT of 0.68 to 0.78 percent. As described above, existing traffic levels along roadways in the project vicinity are currently high; the addition of the daily trips resulting from the potential overlap of construction and operation of the Proposed Action and the CCAO Building Replacement would be negligible.

Overall, the Proposed Action, in consideration with the CCAO Building Replacement Project, the new Folsom Bridge Project, and the California Health Care Facility, would not be expected to cause any cumulatively considerable traffic effects. Both the Proposed Action and the CCAO Building Replacement Project would result in temporary and minimal traffic impacts that would be unlikely to be noticeable on local roadways and intersections. The Proposed Action would not contribute to any cumulatively considerable effects.

3.8 Noise

This section presents the affected environment and environmental consequences for noise.

3.8.1 Regulatory Setting

This section describes the standard terms used to describe noise levels and the regulatory requirements for noise.

There are several standard terms used to describe noise levels. The standard unit of sound amplitude measurement is the decibel (dB). Since the human ear cannot hear all frequencies, a special scale has been devised to relate noise to human sensitivity. The A-weighted decibel scale (dBA) de-emphasizes the low and high end frequencies and emphasizes those frequencies the human ear is able to hear.

The A-weighted dB scale (dBA) is the most widely used composite scale for environmental noise assessments. It is widely accepted that a 3 dBA change in sound level is barely detectable by human hearing (Caltrans 2006).

Noise analyses and some regulations also use the following terms:

- L_{eq}: Equivalent energy level, A-weighted sound level corresponding to a steady-state sound level that contains the same total energy as a varying signal over a given sample period. This is typically computed over 1, 8, and 24 hour sample periods.

- L_{dn}: Day-night average level, an indicator consisting of a 24-hour average L_{eq}, with the addition of 10dBA added to the sound levels from 10:00 p.m. to 7:00 a.m., to account for heightened nighttime noise sensitivity.

- $L_{max:}$ Maximum Noise Levels, representing the highest sound level measured for a given period.

- L_{90} and L_{10}: Statistical Noise Levels, L_{90} is close to the lowest sound level observed during the measurement period. It is essentially the same as the residual sound level, which is the lowest sound level observed when there are no obvious nearby intermittent sources. L_{10} is close to the maximum sound level observed during the measurement period. It is sometimes called the intrusive noise level because it is caused by occasional louder noises like passing motor vehicles.

- CNEL: Community Noise Equivalent Level, a 24-hour average L_{eq}. that includes the addition of five dBA to sound levels from 7:00 p.m. to 10:00 p.m. and an addition of 10 dBA to sound levels from 10:00 p.m. to 7:00 a.m.

Federal Regulations

The U.S. Code of Federal Regulations Part 772 (23 CFR 772), "Procedures for Abatement of Highway Traffic Noise and Construction Noise," establishes standards for mitigating highway traffic noise. The Noise Control Act of 1972 gives the USEPA the authority to establish noise regulations to control major sources of noise, including transportation vehicles and construction equipment (Federal Highway Administration [FHWA] 1995). Later guidance, issued by the Federal FHWA, including the *Highway Construction Noise Handbook*, updates the original techniques and methodology used to identify the impacts of and mitigation approaches appropriate for construction-related noise (FHWA 2006).

The USEPA guidelines suggest that, on average, the residential outdoor noise level should be no more than 55 dBA and the indoor level should be no more than 45 dBA to protect against sleep disturbances, communication disruption, and hearing damage. The indoor level also applies to school, hospitals, and libraries. There are no guidelines that have been set for other areas (USEPA 1974).

The FHWA has established noise abatement criteria (NAC) in 23 CFR Part 227. These noise standards are based on specific land use categories and one-hour average L_{eq} noise levels. Table 3.8-1 presents these NAC.

Table 3.8-1. Federal Highway Administration Noise Abatement Criteria

Activity Category	L_{eq} (1hr)[1] (dBA)	Description of Activity Category
A	57 (exterior)	Lands on which serenity and quiet are of extreme significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve intended purpose
B	67 (exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 (exterior)	Developed lands, properties, or activities not included in Categories A or B above.
D	--	Undeveloped lands.
E	52 (interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

Source: 23 CFR Part 772
[1]No single hourly average L_{eq} in a 24-hour day can exceed this value.

Land uses along the local haul and access routes, as described in Section 3.7 (Transportation and Circulation), are predominantly Activity Category B and C, and, to a lesser degree, Activity Category E (i.e., residential). The FHWA noise standards indicate that noise mitigation must be considered when the Horizon Year project levels approach or exceed the stated NAC. In the case that Future-Year or Horizon-Year project levels "substantially exceed existing noise levels, FHWA standards mandate mitigation. The Caltrans *Traffic Noise Analysis Protocol* (2006) defines "approach the noise abatement criteria" (23 CFR 772.5(g)) as 1 dBA below the NAC and defines "substantially" as a predicted incremental impact equal to or greater than 12 dBA over existing noise levels.

23 CFR 772 requires that construction noise impacts be evaluated for all projects that fall under its jurisdiction. To perform an assessment of construction noise, land uses or activities that may be affected by construction noise from the project should be identified. While the regulations do not specify specific methods or abatement criteria for evaluating construction noise, Caltrans guidance states that a reasonable analysis method such as FHWA Roadway Construction Noise Model[2] (FHWA 2006) should be used to determine construction induced noise impacts on land uses or activities in the project area (Caltrans 2006).

State Regulations

The State of California does not regulate noise directly. The state's *General Plan Guidelines* dictate the preparation of general plans and noise ordinances at the city and county level. City and County general plans are required to include a Noise Element (State of California Government Code Section 65302 (f)).

[2] The Roadway Construction Noise Model is a windows-based screening tool that can be used to predict construction noise during various stages of project development and construction.

Local Regulations

Local jurisdictions in the project area also regulate noise generated by transportation sources according to land use. All of the jurisdictions along the haul routes adopted a maximum L/CNEL noise limit of 60 dBA for residential land uses, with a potential allowable L/CNEL exceedance level of 65 dBA, in the case that 60 dBA is not practical in a situation given the application of the best-available noise reduction measures. Some of the jurisdictions have adopted a maximum L/CNEL noise limit of 70 dBA for playgrounds and parks. Table 3.8-2, below, summarizes these standards for all of the relevant jurisdictions.

Table 3.8-2. Local Government Transportation Noise Standards by Land Use (dBA)

Noise Element Jurisdiction/Land Use Category	Maximum Allowable Noise Levels	
	Exterior L_{dn}/CNEL[1]	Interior L_{dn}/CNEL
Sacramento County		
Residential Areas	60	45
City of Folsom		
Residential areas including single- or multiple-family residence, school, church, hospital, or public library	60	45

Source: City of Folsom Municipal Code, Chapter 8.42 Noise Control
Sacramento County General Plan Noise Element

Notes: [1]The jurisdictions along the haul routes with standards for transportation noise impacts have adopted a maximum L_{dn}/CNEL noise limit of 60 dBA for residential land uses, with a potential allowable L_{dn}/CNEL exceedance level of 65 dBA, if 60 dBA is not practicable, in a situation given the application of best-available noise reduction measures.

Each jurisdiction's specific noise ordinance and standards are described in more detail below.

Sacramento County General Plan Noise Element

The Sacramento County Noise Element is applicable to new sources of transportation and non-transportation noise. Sacramento County adopted the following standards for non-transportation related noise and its impact on residential areas (See Table 3.8-3).

Table 3.8-3. Sacramento County Non-Transportation Noise Standards

Maximum Allowable Exterior Noise Levels					
Daytime 7 a.m. – 7 p.m.		Evening 7 p.m. – 10 p.m.		Nighttime 10 p.m. – 7 a.m.	
Hourly		Hourly		Hourly	
L_{50}	L_{max}	L_{50}	L_{max}	L_{50}	L_{max}
50	70	50	70	45	65

Source: Sacramento County General Plan, Noise Element 1993

City of Folsom Noise Ordinance

The City of Folsom's noise ordinance (Chapter 8.42, Section 8.42.040) establishes exterior noise level standards, listed in Table 3.8-4. The City of Folsom exempts construction activities provided that construction does not take place before 7 a.m. or after 6 p.m. during weekdays and before 8 a.m. or after 5 p.m. on weekends.

Table 3.8-4. City of Folsom Exterior Noise Level Standards, dBA

Noise Level Category	Cumulative Number of minutes in any 1-hour time period	dBA Daytime (7 a.m. to 10 p.m.)	dBA Nighttime (10 p.m. to 7 a.m.)
1	30	50	45
2	15	55	50
3	5	60	55
4	1	65	60
5	0	70	65

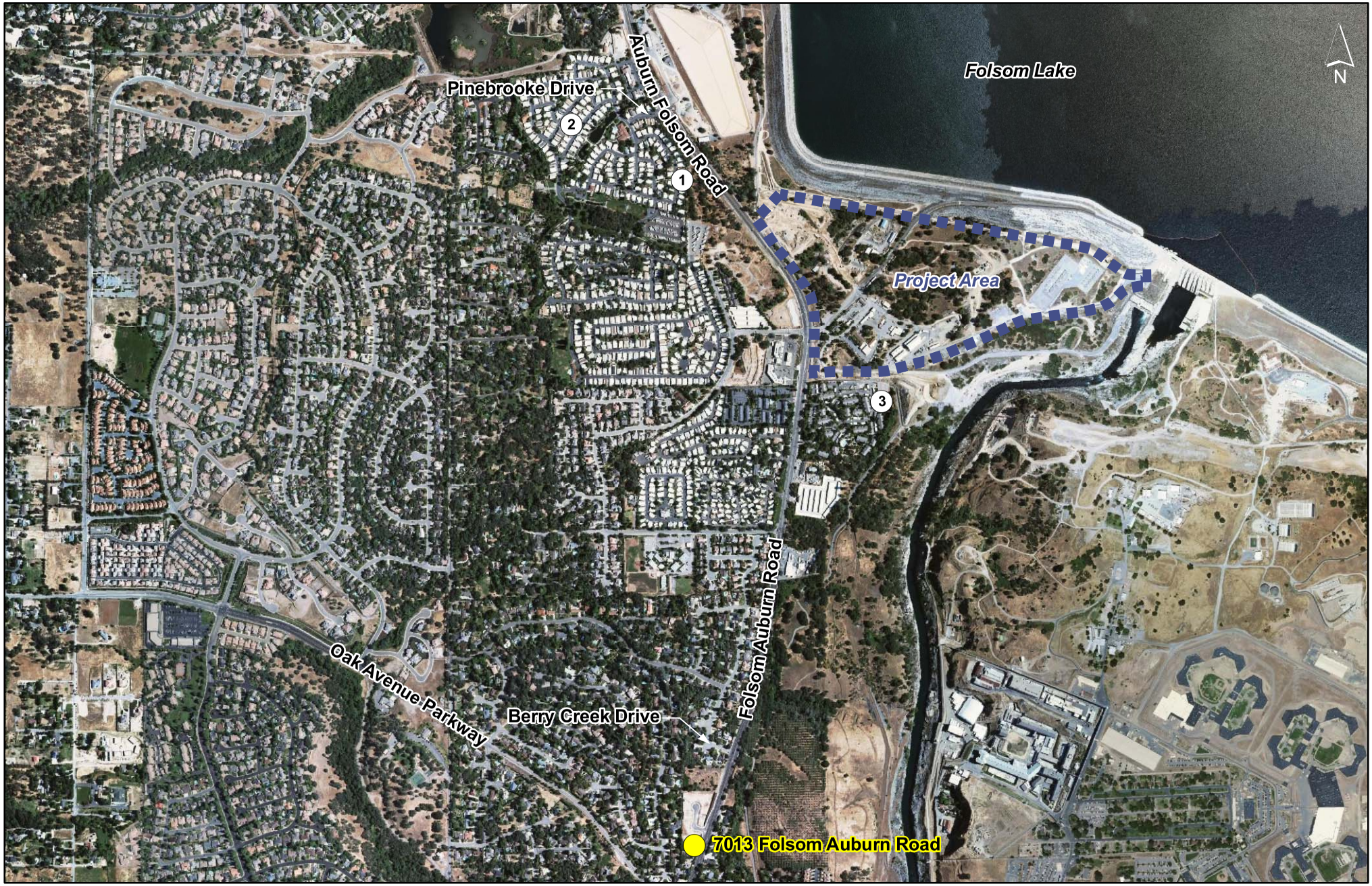
Source: Folsom Municipal Code

3.8.2 Affected Environment

The Folsom Reservoir area is a unique land use and noise setting. The southern end of the reservoir is more of an urban locale with constant noise generated from the Folsom Prison shooting range and traffic along busy arterial roadways. Because recreational boating and jet and water skis activities occur on the reservoir during the summer, background noise levels are generally higher during the summer. During the winter months, human and recreational activity is less; therefore, background noise levels tend to be lower (Reclamation et al. 2006). In the immediate area of the project site, traffic noise along Auburn-Folsom Road is the major source of noise.

The Folsom Lake State Recreation Area & Folsom Powerhouse State Historic Park General Plan and Resource Management Plan and Draft EIS/EIR (CDPR and Reclamation 2007) states that noise is an issue for visitors to Folsom Reservoir as well as for neighbors in surrounding residential areas. Under current conditions, noise coming from the FLSRA is the result of traffic backups at day use facilities, and from water-based activities on Folsom Reservoir. Noise from power boats and jet skis on the lake can travel great distances depending on atmospheric conditions and wind direction.

Three of the closest noise-sensitive receptors were identified for this analysis. Figure 3.8-1 shows the three noise-sensitive receptor sites considered in this analysis. Site 1, was calculated as the closest residence (worst case) to the west end of the construction site (the access point for the City of Roseville connection). Site 1 is approximately 340 feet from the western-most end of the proposed construction area. This site is described as being in a residential area along southbound lanes in Folsom, Sacramento County (Reclamation et al. 2006). Existing noise levels at this



Legend

- Project Area
- Noise-Sensitive Receptor
- Reference Receptor for Site 1

1,000 500 0 1,000

Feet

CDM

Figure 3.8-1

Noise-Sensitive Receptors

site were assumed to be the same as those identified for the 7013 Folsom-Auburn Road noise-sensitive receptor in the Folsom DS/FDR EIS/EIR (Reclamation et al. 2006).

Noise-sensitive receptor Site 2 was analyzed in Reclamation's Folsom DS/FDR *Pre-Construction Noise Monitoring Survey Report* (2008). This site is at Baldwin Reservoir; west of Willey Court and south of Countrywoods Lane, in Granite Bay. This site is representative of additional residences that could be exposed to construction noise on the western side of the reservoir. The distance from Site 2 from the midpoint of the housing development, immediately southeast of Baldwin Reservoir, to the closest point of construction would be approximately 1,630 feet and to the mid-point of construction would be approximately 3,631 feet.

Noise-sensitive receptor Site 3 represents the noise-sensitive receptor to the south of the project site and would be approximately 1,700 feet away from construction. Site 3 is identified as the east side of Building 1200 of Lake Pointe Apartments, just south of the existing tennis courts (Corps 2006).

Current noise conditions measured at the noise-sensitive receptors are as follows:

- **Site 1:** Daytime peak hour L_{eq} was 72.5 dBA, Nighttime peak hour L_{eq} was 66.0 dBA, and L_{dn} was 74.2 dBA.
- **Site 2:** Weekday L_{dn} was 59.5 dBA and CNEL 59.6 dBA; weekend L_{dn} was 48.3 and CNEL 49.0; daytime (7 a.m. to 10 p.m.) L_{eq} ranged from 38.4 to 54.9 dBA; and, nighttime (10 p.m. to 7 a.m.) L_{eq} ranged from 33.1 to 46.2 dBA.
- **Site 3:** Peak-hour noise level was 50 dBA (based on actual field noise measurements), and 24-hour noise level (CNEL) was 54 dBA.

3.8.3 Environmental Consequences

This section presents the environmental consequences of the No Action Alternative and the Proposed Action related to noise.

3.8.3.1 No Action Alternative

Under the No Action Alternative, a temporary pipeline would be constructed during their planned maintenance and repairs on the existing 84-inch pipeline. The temporary pipeline would be trucked in to the site and assembled. After work on the existing 84-inch pipeline has been completed, the temporary pipeline would be dismantled and trucked off-site. Potential sources of noise from construction of the No Action Alternative include onsite construction noise from equipment and

construction-related activities and transportation-related noise sources from construction-related traffic.

The construction and dismantling of the temporary pipeline would last for a combined period of eight weeks (four weeks for construction and four weeks for disassembly). During this time, exact noise levels at nearby receptors would depend on construction phasing and the specific type of equipment that is being used. Under the No Action Alternative, there would be minimal excavation activities (required for constructing a portion of the pipeline under Folsom Dam Road) and there would be no blasting. It is estimated that temporary construction noise levels could range from 70 to 95 decibels (dBA) at 50 to 100 feet from construction.

According to the traffic analysis in Section 3.7, the volume of traffic generated from construction equipment and worker commutes, would be very low (an ADT increase of less than 0.60 percent) in relation to existing traffic volumes on Auburn-Folsom Road. Because it takes a doubling of traffic to increase noise levels by 3 dBA, the threshold of detectability, the noise generated by the relatively low increase in volume of traffic would increase noise levels in the project area by considerably less than 3 dBA (Caltrans 1998).

Given the distances of the three noise sensitive receptors from the site of construction, construction-related noise levels would be expected to range from 40 to 76 dBA at these receptors and would occur during weekday hours as specified in applicable local regulations. Given that the current daytime noise levels at each of the noise sensitive receptor sites are comparable to these levels, the No Action Alternative would have temporary and imperceptible noise impacts.

3.8.3.2 Proposed Action

The focus of this analysis is on potential temporary noise impacts to local noise receptors resulting from construction activities. Like the No Action Alternative discussed above, the Proposed Action would not involve the creation of any permanent noise sources or permanent changes to the affected environment. After construction, noise levels are assumed to return to pre-construction conditions.

Noise from construction would occur during the anticipated eight month construction phase of the Proposed Action. The noise sources would occur in areas that are already surrounded by existing noise, primarily from nearby traffic on Auburn-Folsom Road. Exact noise levels at nearby receptors would depend on construction phasing and the specific type of equipment that is used. Although construction noise levels can range from approximately 70 to 95 decibels (dBA) at 50 to 100 feet from construction activities, these noise levels would be intermittent and temporary in nature.

An evaluation of potential construction noise impacts was performed based on the projected construction activities and schedule. Typically, excavation activities, using excavators, backhoes, scrapers, and dump trucks tend to generate the highest noise levels. It is anticipated that excavation activities would occur for approximately 4 weeks during the construction period.

The boundary of construction at the closest noise-sensitive receptor site (Site 1) is approximately 340 feet away from the construction. Because noise levels generally decrease by 6 dBA every doubling of distance, peak construction noise at the closest receptor would be less than 58 dBA to 83 dBA. The FHWA *Highway Traffic Noise Analysis and Abatement Policy and Guidance* document (1995) describes that it takes a 5 dBA change to produce a "Readily Perceptible Change" to the human ear. Construction-related noise increases would be perceptible at the closest noise-sensitive receptor; however, local regulations exempt construction-related noise that takes place during defined weekday hours (Section 3.8.1). The midpoint noise-sensitive receptor sites (Sites 2 and 3) are over 1,000 feet from the proposed construction site. Therefore, peak construction noise at Sites 2 and 3 would range from approximately 40 dBA to 65 dBA. These levels are similar to the existing ambient levels at the three noise-sensitive receptor sites. Construction-related noise would be perceptible to the closest noise-sensitive receptor, and would occur during weekday hours, which would exempt it from City of Folsom noise ordinances. Construction-related noise would be considered minimal.

According to the traffic analysis in Section 3.7, the volume of traffic generated from construction equipment and worker commutes, as well as operational traffic, would be very low (an increase of approximately 0.58 percent ADT) in relation to existing traffic volumes on Auburn-Folsom Road. Because it takes a doubling of traffic to increase noise levels by 3 dBA (the threshold of detectability), the noise generated by the relatively low volume of traffic would increase noise levels in the project area by considerably less than 3 dBA (Caltrans 1998). Therefore, noise generated from construction traffic would be considered minimal.

Some controlled blasting would need to occur under the Proposed Action to remove granitic rock from the alignment. This is not expected to cause substantial noise or vibration as the blasts would occur more than 340 feet from the nearest noise-sensitive receptor. Construction contractors would be required to use blast mats during blasting to control noise and fly rock. Vibration from blasting would be continually monitored to ensure it does not exceed Reclamation and SJWD vibration thresholds to protect existing structure in the area. Noise and vibration impacts from controlled blasting would occur according to SJWD and Reclamation standards and are expected to be minimal.

3.8.4 Minimization Measures

No minimization measures are required.

3.8.5 Cumulative Effects

Projects with the potential to specifically affect noise in the project vicinity include the New Folsom Bridge, the California Health Care Facility, the Folsom DS/FDR Project, and the CCAO Building Replacement Project. As described above, the Proposed Action would have negligible noise impacts in the project vicinity and would take place during weekday hours, which would exempt the project from the City of Folsom noise ordinances. All other cumulative projects would occur just outside the project area and would be responsible for minimizing their own noise levels. Because noise generated from the Proposed Action would be temporary and would occur during weekday hours, it is not expected to contribute to a substantial cumulative noise impact.

3.9 Cultural Resources

This section presents the affected environment and environmental consequences for cultural resources.

3.9.1 Regulatory Setting

National Historic Preservation Act
The National Historic Preservation Act (NHPA) of 1966, as amended through 1992, establishes a program for the preservation of historic properties throughout the nation. The State Historic Preservation Officer (SHPO) administers the national historic preservation program at the state level, reviews National Register of Historic Places (NRHP) nominations, maintains data on historic properties that have been identified but not yet nominated, and provides consultation for Federal agencies during NHPA Section 106 review.

Reclamation, as lead Federal agency, is responsible for compliance with Section 106 of the NRHP and its implementing regulations found at 36 CFR Part 800. Reclamation has to take in account the effects of its undertaking on historic properties as defined in 36 CFR Part 800.16 (l). The criteria of determining historic properties are found at 36 CFR Part 800.4.

National Environmental Policy Act and Reclamation Directives and Standards
Under the NEPA (42 United States Code Sections 4321-4327), Reclamation is required to consider potential environmental consequences and appropriate environmental commitments for projects with Federal involvement. A complete list of pertinent Federal laws, regulations and guidance that direct Reclamation cultural resources policies and responsibilities is found in Reclamation's Directives and Standards Manual Land Management and Development (LND) 02-01 for Cultural Resource Management.

In addition, project undertakings by Reclamation must follow directives and guidelines found in Reclamation Manuals LND P01 and LND 07-01. LND P01 establishes policy and authority for cultural resource identification, evaluation and management of cultural resources. LND 10-01 provides procedures for inadvertent discoveries for cultural items which are under the authority of the Native American Graves Protection and Repatriation Act.

3.9.2 Affected Environment

The area of potential effect (APE) for cultural resources corresponds to the potential footprint for the Proposed Action described in Chapter 2. The Proposed Action would construct multiple sections of buried pipeline, from the existing pump station near Folsom Dam to existing SJWD and City of Roseville pipelines. A cultural resources investigation and survey completed by Pacific Legacy Inc. as a part of this EA/IS determined that no previously recorded historic or archaeological sites were located within the project area (Pacific Legacy 2008). The study relied on three previous archaeological surveys, Native American consultation, a consultation with the Folsom Historical Society, and archival research. The study was completed in compliance with Section 106 of the NHPA and implementing regulations found at 36 CFR Part 800.

No historic properties listed on or determined eligible for listing on the NRHP are within the project area; however, Folsom Dam and its Right Wing Dam are immediately adjacent to the project area. These resources have been determined eligible for listing on the NRHP as part of the CVP Multiple Property Listing under Criterion A.

3.9.3 Environmental Consequences

This section presents the environmental consequences of the No Action Alternative and the Proposed Action related to cultural resources.

3.9.3.1 No Action Alternative

The No Action Alternative would utilize a temporary pipeline during planned outages to allow water deliveries to continue to SJWD and the City of Roseville. This temporary pipe would be placed above ground and would not result in any excavation. As was noted above, no previously recorded historic or archaeological sites were within the project area and given the lack of excavation activities, the No Action Alternative would not result in any impacts to cultural resources.

3.9.3.2 Proposed Action

Based on the cultural resources survey, no impacts to known cultural resources are anticipated from implementation of the Proposed Action. No historic properties or

known cultural resources would be affected by construction of the Proposed Action. While Folsom Dam and Right Wing Dam have been determined eligible for listing on the NRHP, the Proposed Action would not affect these structures or their eligibility. There would be no impacts to any known cultural resources.

The Proposed Action would involve construction of approximately 4,000 linear feet of buried pipeline and would require excavation of an open trench. Excavation activities could uncover buried archeological deposits that were not visible during the cultural resources survey. Minimization Measures CUL-1 and CUL-2 would reduce these potential impacts to an insignificant level.

3.9.4 Cumulative Effects

The Proposed Action would rely on environmental commitments to prevent cultural resource impacts resulting from excavation activities. No other projects propose excavation activities in the project area in the near future. There would be no cumulative impacts on cultural resources.

3.9.5 Minimization Measures

CUL – 1: Discovery of Buried Cultural Remains
Prior to the initiation of construction or ground-disturbing activities, all construction personnel should be alerted to the possibility of buried cultural remains. This includes prehistoric and/or historic resources. Personnel should be instructed that upon discovery of buried cultural materials, work in the immediate vicinity of the find should cease and a qualified archaeologist should be contacted immediately. Once the find has been identified plans for treatment and for the evaluation and mitigation of impacts to the find, if they are found to be NRHP or CRHR eligible, will need to be developed.

CUL – 2: Discovery of Human Remains
If human remains are encountered during construction, work in that area must halt and the Sacramento Coroner must be immediately notified. If the remains are determined to be Native American, then the NAHC is to be notified within 24 hours as required by Public Resources Code 5097. The NAHC will notify the designated Most Likely Descendant who will provide recommendations for the treatment of the remains within 48 hours of being granted access to the site.

3.10 Land Use, Planning, and Zoning

This section presents the affected environment and environmental consequences for land use, planning, and zoning.

3.10.1 Regulatory Setting

The project site is Federal property and is therefore not subject to local General Plans, zoning, or ordinances. Reclamation and CDPR are currently developing the Folsom Lake State Recreation Area & Folsom Powerhouse State Historic Park General Plan and Resource Management Plan (CDPR and Reclamation 2007) that describes how the lands around Folsom Reservoir will be managed in the future.

3.10.2 Affected Environment

The entire area around Folsom Reservoir is owned by Reclamation and leased to the CDPR. According to the Preliminary Folsom Lake State Recreation Area & Folsom Powerhouse State Historic Park General Plan and Resource Management Plan, the project area has been designated as "administration".

3.10.3 Environmental Consequences

This section presents the environmental consequences of the No Action Alternative and the Proposed Action related to land use.

3.10.3.1 No Action Alternative

Under the No Action Alternative, a temporary pipeline would be constructed by Reclamation to allow water deliveries to continue during maintenance and repairs on the existing 84-inch pipeline. Because Reclamation would construct the pipeline entirely on Federal land and it would be only temporary, there would be no impact to land use, planning, and zoning.

3.10.3.2 Proposed Action

Construction of the Proposed Action would take place entirely on Federal property. The Proposed Action would not result in any permanent changes to land use, planning, and zoning in the region. SJWD and the City of Roseville would be required to obtain approvals from Reclamation for construction and operation of the new pipelines, including a temporary construction easement and a permanent pipeline alignment easement. The City of Roseville's portion of the pipeline would be constructed near the shoulder of Auburn-Folsom Road, within the City of Folsom's right-of-way. An encroachment permit from the City of Folsom would need to be obtained prior to construction of this portion of the project. SJWD and the City of Roseville would obtain all appropriate approvals prior to construction and would follow approval conditions, as required. Construction of the Proposed Action would not change the current land use and would not affect zoning. The impacts associated with land use would be considered negligible.

3.10.4 Minimization Measures

No minimization measures are necessary.

3.10.5 Cumulative Effects

The Proposed Action would not result in any changes to land use, planning, or zoning; therefore there would be no cumulative effects.

3.11 Recreation Resources

This section presents the affected environment and environmental consequences for recreation resources.

3.11.1 Regulatory Setting

Reclamation holds title to the majority of the lands in the project area with the exception of land underlying the Jedediah Smith Bike Trail (also known as the American River Bike Trail), which is owned by CDPR. CDPR has a long-term agreement with Reclamation to manage recreation on the lands designated as part of the FLSRA.

The CDPR, in partnership with Reclamation, recently began work on the integrated Folsom Lake State Recreation Area & Folsom Powerhouse State Historic Park General Plan and Resource Management Plan (CDPR and Reclamation 2007). This process will update the current General Plan, as well as the long-range vision for the FLSRA. The General Plan and Resource Management Plan will guide the protection of natural and cultural resources and future development of public facilities at the FLSRA. Alternative plan concepts have been developed to address resource and visitor capacity issues at the FLSRA. The revised joint integrated project is being prepared to meet the requirements of both of the agencies. A draft of the Folsom Lake State Recreation Area & Folsom Powerhouse State Historic Park General Plan and Resource Management Plan and EIS/EIR (CDPR and Reclamation 2007) are currently being finalized and will soon be distributed to the public. For additional details refer to http://www.parks.ca.gov.

3.11.2 Affected Environment

The project site is within the FLSRA. The FLSRA is one of the most popular recreation sites within California in the CDPR system, and overall annual park usage has averaged approximately 2 million visitors over the past 10 years (Griffith 2008). The only recreation feature directly within the project area is the American River Bike Trail (See Figure 2-1 in Chapter 2). This portion of the trail runs from Lake Natoma north through the project area towards Beal's Point, and passes between Auburn-Folsom Road and Right Wing Dam, just west of the Hinkle Wye. The trail is paved and is available for equestrian, pedestrian, and bicycle use. East of the trail,

access to Reclamation property is generally restricted to Reclamation and CDPR personnel.

3.11.3 Environmental Consequences

This section presents the environmental consequences of the No Action Alternative and the Proposed Action related to recreational resources.

3.11.3.1 No Action Alternative

Under the No Action Alternative, a temporary pipeline would be constructed to allow the required maintenance and repairs to the existing 84-inch pipeline. The temporary pipeline would be sited to ensure it would not interfere with the American River Bike Trail. There would be no impact on existing recreation.

3.11.3.2 Proposed Action

The Proposed Action would be constructed in an area that does not contain any recreation resources other than the trail and would therefore not affect the use of the FLSRA. Under the Proposed Action, the bypass pipeline would be constructed beneath the American River Bike Trail. Construction activities could require temporary closure of this trail for four weeks. Because this trail is used heavily throughout the seasons, closure of this trail would be considered a substantial recreation impact. The Minimization Measure REC-1 described in Section 3.11.4 would avoid potential recreation impacts from the trail closure by allowing continuous trail use throughout construction.

3.11.4 Minimization Measures

REC-1: Temporary Trail Detour
SJWD and Reclamation will coordinate with CDPR to construct a temporary trail detour that will allow for continuous use of the American River Bike Trail during construction. Reclamation will issue a press release to alert the public of the detour. Signs will be posted to alert recreation users of the trail detour. Fencing will be erected to protect the recreation users from construction equipment and vehicles and the open trench that will be required for the pipeline. The trail detour will be sited to minimize environmental effects. After construction is complete, the detour will be removed and the area will be returned to its previous condition.

3.11.5 Cumulative Effects

The Proposed Action would create a temporary trail detour to prevent recreation impacts. No other projects propose to close or re-route the American River Bike Trail in the near future. There would be no cumulative impacts on recreation.

3.12 Utilities

This section presents the affected environment and environmental consequences for utilities.

3.12.1 Regulatory Setting

There are no utilities laws or regulations that are applicable to the project.

3.12.2 Affected Environment

As described in Chapter 2, Reclamation's existing 84-inch pipeline delivers raw water from Folsom Reservoir to SJWD and the City of Roseville. The pipeline originates at an intake structure on the inside face of the dam and travels to the Folsom Pumping Plant just next to the dam. It then travels in a westward direction past the Pumping Plant for gravity flow operations and serves as a suction manifold for the Pumping Plant during pumped conditions. The Pumping Plant discharges to a 60-inch pipeline on the south side of the 84-inch pipeline. West of the Pumping Plant site, the two buried pipelines join at an 84-inch wye. The pipeline continues west as an 84-inch line that surfaces through concrete blocks and then travels uphill through a flow meter and surge tower at the top of the hill near the Pumping Plant. The pipeline then runs parallel to the Right Wing Dam about 70 to 120 feet from the toe of Right Wing Dam. The pipeline travels past existing substation, approximately 70 feet south of the alignment until it reaches Folsom Dam Road. At this point, the pipeline travels under the road and surfaces at a second surge tower. The pipeline then continues west another 1,700 feet until it reaches the Hinkle Wye. At the Hinkle Wye, Reclamation's 84-inch pipeline connects to two pipelines that travel to SJWD's Sydney N. Peterson Water Treatment Plant. Reclamation's pipeline also connects to the Roseville raw water pipeline that transitions to a 60-inch buried pipeline to Auburn-Folsom Road and then connects to two pipelines that convey water to Roseville's water treatment plant (Kennedy/Jenks 2003).

3.12.3 Environmental Consequences

This section presents the environmental consequences of the No Action Alternative and the Proposed Action related to utilities.

3.12.3.1 No Action Alternative

Under the No Action Alternative, construction of a temporary pipeline would occur to ensure water deliveries continue during the planned outage of the existing 84-inch pipeline. A brief interruption in water service may be necessary during the installation of the temporary pipeline. This interruption in service would not exceed 24 hours. Interruptions in service from construction of the No Action Alternative are considered minimal.

3.12.3.2 Proposed Action

Under the Proposed Action, brief interruptions in water service could occur to SJWD and the City of Roseville when the new pipeline is connected to the existing SJWD and City of Roseville pipelines. This interruption in water service would not last longer than 24 hours in order to prevent water shortages to SJWD and the City of Roseville. The interruptions in service required for the Proposed Action impacts would be minor.

3.12.4 Minimization Measures

No minimization measures are required.

3.12.5 Cumulative Effects

There are no known cumulative projects that would have the potential to affect existing water services to SJWD or the City of Roseville; therefore, there the Proposed Action would not contribute to any cumulative effects.

3.13 Public Health and Safety

This section presents the affected environment and environmental consequences for public health and safety. Primarily, these include risks posed by hazardous, toxic, and radiological wastes and fires and the potential health and safety risks to Reclamation staff and the public.

3.13.1 Regulatory Setting

Federal Regulations
Hazardous materials, hazardous substances, and hazardous wastes are regulated under various Federal laws including:

- Resource Conservation and Recovery Act (RCRA, 42 United States Code 692);
- Hazardous Material Transportation Act (HMTA);
- Clean Water Act;
- Comprehensive Environmental Response Compensation and Liability Act (CERCLA, 43 United States Code 9601);
- Superfund Amendment Reauthorization Act (SARA) Title 3;
- 40 CFR 260-279 Federal Regulations on hazardous waste management;

- 40 CFR, Section 301 et seq. Emergency Planning and Community Right to Know Act; and

- Toxic Substances Control Act (15 United States Code 2601).

Under RCRA, the USEPA regulates the generation, transportation, and disposal of hazardous wastes (USEPA 2008). The USEPA requires permits for the treatment, storage, and/or disposal of hazardous wastes and tracks the wastes from generation through to disposal (USEPA 2008). The USEPA delegates some of this authority, such as permitting, to individual states.

The Department of Transportation through the HMTA regulates transportation of hazardous materials. Transporting hazardous materials requires special handling, packaging, placarding, and manifesting of cargoes. Various laws, including the SARA and HMTA, govern day-to-day management of hazardous materials. These laws define the requirements for storage of hazardous materials, safe handling practices, and employee training.

State Regulations

California state laws that regulate activities involving hazardous materials, hazardous substances, or hazardous waste include:

- Hazardous Waste Control Law (California Health and Safety Code section 25100);

- Title 17, Public Health (California Code of Regulations);

- Title 19, Public Safety (California Code of Regulations);

- Title 22, Division 4.5 - Environmental Health Standards for the Management of Hazardous Waste (California Code of Regulations);

- Title 26, Toxics (California Code of Regulations); and

- California Department of Motor Vehicles, Hazardous Waste and Materials Transportation Requirements (Vehicle Code Section 31303).

The California Department of Toxic Substances Control (DTSC) administers the Federal RCRA for the state, and enforces the California Health and Safety Code. According to the California Government Code (Section 65962.5), DTSC is required to compile and update lists of hazardous materials sites, including land designated as hazardous waste sites and hazardous waste disposals on public lands. The California Government Code (Section 65962.5) also requires the SWRCB to compile and update hazardous materials site lists, including underground storage tanks for which

an unauthorized release report is filed, and solid waste disposal facilities from which there is a migration of hazardous wastes.

3.13.2 Affected Environment

3.13.2.1 Hazardous, Toxic, and Radiological Wastes

Hazardous materials are defined by the State of California as:

> *…any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. "Hazardous materials" include, but are not limited to, hazardous substances, hazardous waste, and any material which a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.*[3]

The Corps conducted an environmental site assessment for the Folsom Dam Modification Project in May 2005. This assessment included records research, interviews, and field surveys within a 1.5-mile radius of the Folsom Dam. A search of DTSC and USEPA databases was conducted in December 2008 to determine if any new information was available. Neither of these data searches revealed any designated hazardous sites within the project area.

Reclamation's CCAO Headquarters is just south of the project area. Various materials that may be considered hazardous are currently stored within the CCAO maintenance buildings for O&M activities associated with Folsom Dam and Reservoir. Additionally, two above-ground fuel storage tanks are present in the parking lot on the CCAO site, just south of the Proposed Action area.

3.13.2.2 Fire

The area surrounding the project consists of oak woodland and grassland. These areas are at risk for fire, especially during the dry season. While no residential buildings are present in the project area, Reclamation and CDPR administration and maintenance buildings are south of the project area. Any fires in the project site have the potential to damage these buildings and pose safety risks to the staff working in the area. According to the California Fire Alliance Fire Planning and Mapping website the fire threat for the project area ranges from moderate to very high (California Fire Alliance 2008).

[3] California Health and Safety Code, Division 20, Chapter 6.95, Section 25501(k).

3.13.2.3 Public Safety and Emergency Access

There are several public safety and emergency access issues in the project area including, existing recreation users, ongoing construction projects, and Reclamation activities as they pertain to O&M of Folsom Dam and Reservoir. Recreation users currently frequent the project area because of the presence of the FLSRA and American River Bike Trail. Public safety must be considered prior to the implementation of any construction activities in the area, especially for recreation users on the existing trail. Second, several ongoing construction projects, including the CCAO Building Replacement Project and the Folsom DS/FDR Project are currently underway in and around the project area. Conflicts with these projects, including equipment and vehicle access, must be considered to ensure the health and safety of construction workers, agency staff, and the public. Finally, Folsom Dam Road is currently used by Reclamation personnel to access the CCAO buildings the main concrete dam. This road is highly utilized during the day.

3.13.3 Environmental Consequences

This section presents the environmental consequences of the No Action Alternative and the Proposed Action related to public health and safety.

3.13.3.1 No Action Alternative

Under the No Action Alternative, Reclamation would construct a temporary pipeline to ensure water deliveries during the planned outage on the existing 84-inch pipeline. Construction of this temporary pipeline would likely require welding and could result in the temporary use, storage, and transport of hazardous materials during construction and demolition. The No Action Alternative could increase the risk of fire and could also increase health and safety risks associated with use of hazardous materials.

3.13.3.2 Proposed Action

Hazardous, Toxic, and Radiological Waste
Construction of the Proposed Action could require the temporary use, storage, and transport of hazardous materials. Use of such materials could result in accidental spills at the site and could pose a health risk to construction workers. With implementation of Minimization Measure PHS-1, impacts from the temporary use, storage, and transport of hazardous, toxic, or radiological materials would be reduced.

Fire Risk
Construction activities such as operation of equipment and vehicles, welding, or activities that may result in accidental spills of flammable liquids would increase the

potential for fires. Implementation of Minimization Measure PHS-2 would reduce the risk of fires.

Public Safety and Emergency Access
Reclamation employees would be working at and adjacent to the project site during construction. There is the potential for individuals to be harmed during construction by contact with construction equipment, construction materials, or unsafe onsite conditions (e.g. excavated areas). Additionally, blasting may be required to excavate granite from portions of the pipeline trench and this could pose a health and safety risk to anyone in the vicinity. With the implementation of Minimization Measure PHS-3, potential health and safety risks to Reclamation and CDPR employees and the public would be reduced.

A portion of the pipeline would need to be constructed beneath the American River Bike Trail. The use of equipment and vehicles in this area could pose a safety risk to recreation users. Implementation of Minimization Measure REC-1 described in Section 3.11.4 would involve a temporary detour that would re-route the trail to ensure public safety throughout construction. Minimization Measure PH-1 would also help to ensure public safety through the use of fencing and signage in construction zones.

A portion of the pipeline would need to be constructed below Folsom Dam Road and may result in the temporary closure of Folsom Dam Road. Potential closure of this road has been coordinated with Reclamation and is considered a minimal impact.

3.13.4 Minimization Measures

The following minimization measures will be incorporated into the project to reduce or avoid the public health and safety impacts discussed above.

PHS-1: Hazardous Materials Management Plan
Prior to initiation of construction activities, the construction contractor will be required to prepare a Hazardous Material Management Plan for review by Reclamation and SJWD. The purpose of this plan is to have an established plan of action if hazardous materials are encountered during construction and to establish BMPs to reduce the potential for exposure to hazardous wastes. The plan will:

- Define a protocol for proper handling and disposal of hazardous materials if they are encountered during construction or demolition activities;

- Define a protocol for emergency procedures and handling and disposal of hazardous materials if an accidental spill occurs during construction; and

- Establish BMPs to reduce the potential for spills of toxic substances.

Typical BMPs to reduce the potential for spills may include, but are not limited to:

- Having a spill prevention and control plan with a designated supervisor to oversee and enforce proper spill prevention measures;
- Providing spill response and prevention education for employees and subcontractors;
- Stocking appropriate clean-up materials onsite near material storage, unloading and use areas;
- Designating hazardous waste storage areas away from storm drains or watercourses;
- Minimizing production or generation of hazardous materials onsite or substituting chemicals used onsite with less hazardous chemicals;
- Designating areas for construction vehicle and equipment maintenance and fueling with appropriate control measures for run-on and runoff; and
- Arranging for regular hazardous waste removal to minimize onsite storage.

PHS-2: Fire Management Plan
Prior to initiating construction activities, the construction contractor will prepare and implement a Fire Management Plan. The plan will include fire prevention and response methods including fire precaution, presuppression, and suppression measures consistent with the policies and standards of SJWD and Reclamation.

PHS-3: Worker Health and Safety Plan
Prior to construction, the construction contractor will prepare a Health and Safety Plan that should, at a minimum, identify:

- All contaminants that could be encountered during excavation activities;
- All appropriate worker, public health, and environmental protection equipment and procedures;
- Emergency response procedures;
- Most direct route to a hospital; and
- Site Safety Officer.

The plan will require documentation that all workers have reviewed and signed the plan and will be made available to all CCAO employees and visitors.

Additionally, in order to maintain public safety during all phases of construction, the plan will address:

- Adequate signage regarding the location of construction sites and warning of the presence of construction equipment;
- Fencing of construction staging areas and of construction areas if dangerous conditions exist when construction is not occurring; and
- Temporary walkways or vehicle lanes (with appropriate markings, barriers, and signs to safely separate pedestrians from vehicular traffic) and detour signage where an existing path or lane will be closed during construction.

3.13.5 Cumulative Effects

The Folsom DS/FDR Project and CCAO Building Replacement Project would also have the potential for health and safety impacts and would be under construction at the same time and in the same general areas as the Proposed Action. Both projects require specific health and safety plans and measures to reduce the potential for health and safety impacts to workers and the public during construction. Additionally, all project proponents will continue to coordinate to ensure a high level of safety throughout construction. Overall, with the implementation of the Minimization Measures discussed in Section 3.13.4, no cumulative effects are expected.

3.14 Minimization Measures Incorporated into the Project

Based on the above NEPA analysis, Minimization Measures have been incorporated into the project to reduce or avoid all environmental effects. Table 3.14-1 summarizes the environmental effects of the Proposed Action and the Minimization Measures that will be incorporated into the project to reduce impacts.

Table 3.14-1. Summary of Environmental Consequences and Minimization Measures for the Proposed Action

Environmental Consequence	Significance	Minimization Measure
Water Resources		
Potential for water quality impacts from stormwater runoff.	MWM	***WQ-1: NPDES Construction Permit and SWPPP*** The construction contractor will be required to obtain a State General Permit for Storm Water Discharges Associated with Construction Activity according to the National Pollutant Elimination Discharge System program. This will entail filing a Notice of Intent with the Central Valley Regional Water Quality Control Board and development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP will describe best management practices that will be implemented to contain stormwater runoff on-site and reduce erosion and sedimentation.
Potential for water quality impacts associated with dewatering.		***WQ-2: Dewatering Permit*** The construction contractor will be required to obtain a dewatering permit from the CVRWQCB prior to any dewatering. This will entail filing a NOI and may require water quality testing and monitoring. The construction contractor will be required to adhere to all permit conditions.
Potential to cause changes in the timing and quantity of water delivered from Folsom Reservoir to SJWD and the City of Roseville	NI	No minimization measures required.
Increase water supply redundancy and reliability for SJWD and City of Roseville.	B	No minimization measures required.
Air Quality		
Temporary fugitive dust and exhaust emissions during construction.	M	No minimization measures required.
Result in total annual emissions that would exceed General Conformity thresholds.	M	No minimization measures required.
Greenhouse gas emissions during construction.	M	No minimization measures required.
Biological Resources		
Potential impacts to wetlands and jurisdictional waters of the U.S.	MWM	***BIO-1: Compliance with Section 404 and 401 of the Clean Water Act*** In the event that the drainage ditch that extends north from the gravel access road, parallel to the Right Wing Dam and adjacent recreation trail is found to be a Waters of the U.S. subject to Section 404 of the Clean Water Act (CWA), a Nationwide Permit will be obtained from the U.S. Army Corps of Engineers prior to construction. Additionally, a CWA Section 401 permit will be

Table 3.14-1. Summary of Environmental Consequences and Minimization Measures for the Proposed Action

Environmental Consequence	Significance	Minimization Measure
		obtained from the Central Valley Regional Water Quality Control Board to ensure the proposed discharge complies with all State water quality requirements. All permit requirements will be implemented, including re-contouring of the disturbed area to pre-project conditions.
Potential impacts to aquatic resources in Folsom Reservoir and the Lower American River.	NI	No minimization measures required.
Potential impacts to vegetation during construction.	MWM	***BIO-2: Tree Protection and Re-vegetation*** In order to minimize direct impacts to trees located within the construction area, tree protection measures would be implemented prior to construction and re-vegetation would occur immediately following construction. Tree protection measures would reduce impacts to trees during construction and may include the following measures: 1. Protective fencing will be installed at the Root Protection Zone of trees that would be directly impacted by construction. The Root Protection Zone is defined as the area within a circle with a radius equal to the greatest distance from the trunk to any overhanging foliage in the tree canopy. Posts will be placed where they will not impact tree roots. 2. No construction staging or disposal of construction materials or byproducts including but not limited to paint, plaster, or chemical solutions will be allowed in the Root Protection Zone. 3. All work conducted in the ground within the Root Protection Zone of any protected tree will be accomplished with hand tools to the extent feasible. 4. "Natural" or pre-construction grade will be maintained in the Root Protection Zone. 5. In areas where the grade around the protected tree will be lowered, some root cutting may be unavoidable. Cuts will be clean and made at right angles to the roots. When practical, roots will be cut back to a branching lateral root. Any necessary root pruning to be conducted by qualified personnel. Cut roots subject to open air conditions longer than a few hours should be covered with burlap and maintained in a moist condition until covered by soil. 6. Root damage and soil compaction caused by heavy equipment traversing the Root Protection Zone in locations where it is unavoidable will be mitigated by applying plywood or mulch in the Root Protection Zone to avoid soil compaction. 7. All pruning will be conducted by a certified arborist or other qualified contractor.

Table 3.14-1. Summary of Environmental Consequences and Minimization Measures for the Proposed Action

Environmental Consequence	Significance	Minimization Measure
		8. To compensate for the loss of oak trees, mitigation will be required at a one to one ratio. The site for mitigation has not been determined and will require further coordination with Reclamation for design and location. Once construction has been completed, revegetation will occur to restore vegetated areas disturbed during construction to pre-construction conditions, to the extent feasible. Native plant species used for revegetation will be selected based on existing vegetation in the project area and consultation with U.S. Fish and Wildlife Service (USFWS) and Reclamation.
Potential impacts to wildlife during construction.	MWM	***BIO-3: Nesting Migratory Birds, Including Raptors*** To the extent possible, removal of trees and potential bird breeding habitat in the project area would occur between September 1 and January 31, when birds are not expected to be nesting within the project area, in order to comply with the Migratory Bird Treaty Act. Prior to any tree removal and construction, a qualified biologist or ornithologist would conduct preconstruction field surveys in and adjacent to the project area for nesting migratory birds, including raptors. Surveys would be conducted during the season immediately preceding tree removal and grading operations when birds are building and defending nests or when young are still in nests and dependent on the parents. If no nests are found during the surveys, tree removal and grading may proceed. If nests are found, construction activities including tree removal shall not be conducted within a buffer zone designated by USFWS or the California Department of Fish and Game (CDFG) around the nest(s) until after the breeding season (February to the end of August), or until a wildlife biologist determines that the young have fledged (usually late-June through mid-July).
Potential impacts to wildlife during construction.	MWM	***BIO-4: Biological Resources Awareness Training*** Prior to construction, including clearing of vegetation and grading, mandatory training regarding the biological resources present at the project site will be provided to all construction personnel. The training will be developed and provided by a qualified biologist familiar with the sensitive species that may occur in the project area and will provide educational information on the natural history of these species, reporting sightings, required minimization measures to avoid impacts, and penalties for not complying with biological minimization requirements. All project personnel will be required to receive training before they start working.
Potential impacts to valley elderberry longhorn beetle.	MWM	***BIO-5: Elderberry Minimization*** The following measures are subject to and contingent upon a Section 7 consultation with the USFWS. Reclamation will implement the following measures proposed in the valley elderberry longhorn beetle (VELB) Conservation Guidelines (Guidelines) (USFWS 1999).

Table 3.14-1. Summary of Environmental Consequences and Minimization Measures for the Proposed Action

Environmental Consequence	Significance	Minimization Measure
		Where possible, complete avoidance of elderberry shrub would be enforced. Avoidance measures would include the establishment and maintenance of a 100-foot temporary construction buffer zone surrounding elderberry shrubs containing stems measuring 1.0 inch or greater in diameter at ground level. The proposed staging area and access roads contain elderberry shrubs that would be within 20 feet of Project activities. These shrubs; however, are currently exposed to ongoing Reclamation operation and maintenance (O&M) activities similar to the Proposed Action (the USFWS issued a Biological Opinion (BO) for Reclamation O&M actions). All elderberry shrubs within 20 feet of Project activities will also be flagged or fenced for easy identification. Construction crews will be briefed on the need to avoid elderberry shrubs and no vehicles will enter within the 20 foot buffer zone. Additionally, the following dust control measures will be implemented: • Water or otherwise stabilize the soil prior to ground disturbance; • Cover haul trucks; • Employ speed limits on unpaved roads; • Apply dust suppressants; • Physically stabilize soil with vegetation, gravel, recrushed/recycled asphalt or other forms of physical stabilization; • Reduce number of vehicle trips; • Install one or more grizzlies, gravel pads, and/or wash down pads adjacent to the entrance of a paved public roadway to control carry-out and trackout; • Minimize vegetation clearing; and • Revegetate post-construction. Elderberry shrubs that cannot be avoided would be transplanted if technically feasible. All elderberry shrubs containing stems measuring 1.0 inch or greater in diameter at ground level would be transplanted to a USFWS approved conservation area between November 1 and February 15. Each elderberry shrub with stem measuring 1.0 inch or greater in diameter at ground level that is adversely affected would be compensated with elderberry seedlings or cuttings in accordance with the Guidelines. Elderberry shrubs that cannot be feasibly transplanted will be compensated at a ratio two-times the normal amount. A minimum survival rate of at least 60 percent of the elderberry shrubs would be maintained throughout the monitoring period. If survival drops below

Table 3.14-1. Summary of Environmental Consequences and Minimization Measures for the Proposed Action

Environmental Consequence	Significance	Minimization Measure
		this level, additional seedlings would be planted. Stock for plantings would be obtained from local sources. Native plants associated with elderberry shrubs at the project area or similar reference sites would be planted in accordance with the Guidelines. A minimum survival rate of at least 60 percent of the associated native plants would be maintained throughout the monitoring period. If survival drops below this level, additional seedlings or cuttings would be planted. Only stock from local sources would be used, unless such stock is not available, per the Guidelines.
Potential impacts to special status birds and bats.	MWM	***BIO-6: Conduct Nesting Bird Surveys, Roosting Bat Surveys, and Establish No-Disturbance Buffers, as Appropriate, for Special-Status Species*** If construction activities must occur during the breeding season for special-status birds and/or bats (February 1–August 31), the following measures will be implemented: Retain a qualified wildlife biologist who is experienced in identifying special-status birds and bats and their habitat to conduct nesting-bird surveys and bat roosting surveys in and within 500 feet of the project site, where feasible. These surveys must be conducted within one week prior to initiation of construction activities at any time between February 1 and August 31. If no active nests or roosts are detected during surveys, then no additional minimization measures are required. If special-status birds or bats are found in the construction area or in the adjacent surveyed area, a no-disturbance buffer will be established around the nesting/roosting location to avoid disturbance or destruction of the nest site/roost site until after the breeding season or after a wildlife biologist determines that the young have fledged (usually late-June through mid-July). The extent of these buffers will be determined by a wildlife biologist in consultation with the applicable resource agencies (i.e., USFWS and/or CDFG) and will depend on the level of noise or construction disturbance, line of site between the nest/roost and the disturbance, ambient levels of noise and other disturbances, and other topographical or artificial barriers. These factors will be analyzed and used by a qualified wildlife biologist to assist the USFWS and/or CDFG in making an appropriate decision on buffer distances.
Geology and Soils		
Increased potential for soil erosion during construction.	MWM	Minimization Measure WQ-1 described under Water Resources would minimize impacts to geology and soils.
Excavation and off-site disposal	M	No minimization measures required.

Table 3.14-1. Summary of Environmental Consequences and Minimization Measures for the Proposed Action

Environmental Consequence	Significance	Minimization Measure
of soil material.		
Potential for impacts associated with naturally occurring asbestos.	NI	No minimization measures required.
Visual Resources		
Temporary visual impacts from construction equipment and staging.	M	No minimization measures required.
Permanent visual impacts during operation.	M	No minimization measures required.
Traffic and Circulation		
Temporary increases in traffic during construction.	M	No minimization measures required.
Permanent increases in traffic during operation.	M	No minimization measures required.
Noise		
Temporary noise generated during construction.	M	No minimization measures required.
Permanent noise during operation.	M	No minimization measures required.
Cultural Resources		
Impacts to known cultural resources or historic properties.	NI	No minimization measures required.
Impacts to previously unknown cultural resources.	MWM	***CUL –1: Discovery of Buried Cultural Remains*** Prior to the initiation of construction or ground-disturbing activities, all construction personnel should be alerted to the possibility of buried cultural remains. This includes prehistoric and/or historic resources. Personnel should be instructed that upon discovery of buried cultural materials, work in the immediate vicinity of the find should cease and a qualified archaeologist should be contacted immediately. Once the find has been identified plans for treatment and for the evaluation and mitigation of impacts to the find, if they are found to be National Register of Historic Places or California Register of Historical Resources eligible, will need to be developed.

Table 3.14-1. Summary of Environmental Consequences and Minimization Measures for the Proposed Action

Environmental Consequence	Significance	Minimization Measure
Impacts to previously unknown cultural resources.	MWM	***CUL –2: Discovery of Human Remains*** If human remains are encountered during construction, work in that area must halt and the Sacramento Coroner must be immediately notified. If the remains are determined to be Native American, then the Native American Heritage Commission (NAHC) is to be notified within 24 hours as required by Public Resources Code 5097. The NAHC will notify the designated Most Likely Descendant who will provide recommendations for the treatment of the remains within 48 hours of being granted access to the site.

Table 3.14-1. Summary of Environmental Consequences and Minimization Measures for the Proposed Action

Environmental Consequence	Significance	Minimization Measure
Land Use, Planning, and Zoning		
Need for construction easement and permanent pipeline easement from Reclamation and temporary encroachment permit from City of Folsom.	M	No minimization measures required.
Recreation		
Potential impacts to recreation at Folsom Lake State Recreation Area.	NI	No minimization measures required.
Potential impacts to American River Bike Trail during construction.	MWM	***REC-1: Temporary Trail Detour*** The project proponents will coordinate with the California Department of Parks and Recreation and Reclamation to construct a temporary trail detour that will allow for continuous use of the American River Bike Trail during construction. Reclamation will issue a press release to alert the public of the detour. Signs will be posted to alert recreation users of the trail detour. Fencing will be erected to protect the recreation users from construction equipment and vehicles and the open trench that will be required for the pipeline. The trail detour will be sited to minimize environmental effects. After construction is complete, the detour will be removed and the area will be returned to its previous condition.
Public Utilities		
Potential impacts to public services.	NI	No minimization measures required.
Temporary interruption in service to SJWD and City of Roseville during connection of the raw water bypass pipeline to the existing 84-inch pipeline.	M	No minimization measures required.
Public Health and Safety		
Temporary use, storage, and transport of hazardous materials during construction.	MWM	***PHS-1: Hazardous Materials Management Plan*** Prior to initiation of construction activities, the construction contractor will be required to prepare a Hazardous Material Management Plan for review by Reclamation and SJWD. The purpose of this plan is to have an established plan of action if hazardous materials are encountered during construction and to establish best management practices (BMPs) to reduce the potential for exposure to hazardous wastes. The plan will:

Table 3.14-1. Summary of Environmental Consequences and Minimization Measures for the Proposed Action

Environmental Consequence	Significance	Minimization Measure
		• Define a protocol for proper handling and disposal of hazardous materials if they are encountered during construction or demolition activities; • Define a protocol for emergency procedures and handling and disposal of hazardous materials if an accidental spill occurs during construction; and • Establish BMPs to reduce the potential for spills of toxic substances. Typical BMPs to reduce the potential for spills may include, but are not limited to: Having a spill prevention and control plan with a designated supervisor to oversee and enforce proper spill prevention measures; • Providing spill response and prevention education for employees and subcontractors; • Stocking appropriate clean-up materials onsite near material storage, unloading and use areas; • Designating hazardous waste storage areas away from storm drains or watercourses; • Minimizing production or generation of hazardous materials onsite or substituting chemicals used onsite with less hazardous chemicals; • Designating areas for construction vehicle and equipment maintenance and fueling with appropriate control measures for run-on and runoff; and • Arranging for regular hazardous waste removal to minimize onsite storage.
Increase the potential for fires during construction.	MWM	**PHS-2: Fire Management Plan** Prior to initiating construction activities, the construction contractor will prepare and implement a Fire Management Plan. The plan will include fire prevention and response methods including fire precaution, presuppression, and suppression measures consistent with the policies and standards of Reclamation and SJWD.
Potential safety risks to Reclamation employees and the public during construction.	MWM	**PHS-3: Worker Health and Safety Plan** Prior to construction, the construction contractor will prepare a Health and Safety Plan that should, at a minimum, identify: • All contaminants that could be encountered during excavation activities; • All appropriate worker, public health, and environmental protection equipment and procedures; • Emergency response procedures; • Most direct route to a hospital; and • Site Safety Officer.

Table 3.14-1. Summary of Environmental Consequences and Minimization Measures for the Proposed Action

Environmental Consequence	Significance	Minimization Measure
		The plan will require documentation that all workers have reviewed and signed the plan and will be made available to all CCAO Reclamation employees and visitors. Additionally, in order to maintain public safety during all phases of construction, the plan will address: • Adequate signage regarding the location of construction sites and warning of the presence of construction equipment; • Fencing of construction staging areas and of construction areas if dangerous conditions exist when construction is not occurring; and • Temporary walkways or vehicle lanes (with appropriate markings, barriers, and signs to safely separate pedestrians from vehicular traffic) and detour signage where an existing path or lane will be closed during construction.
Potential safety risk to American River Bike Trail users during construction.	MWM	*Minimization Measure REC-1 described under Recreation would minimize this public safety impact.*
Temporary closure of Folsom Dam Road during construction.	M	*No minimization measures required.*

M = Minimal Impact - No Minimization Measures Required
MWM = Minimal Impact With Minimization Measures
NI = No Impact
ADT = average daily trips
BMP = best management practices
CCAO = Central California Area Office
CDFG = California Department of Fish and Game
HTRW = hazardous, toxic, and radiological wastes
LOS = Level of Service
SMAQMD = Sacramento Metropolitan Air Quality Management District
SWPPP = Storm Water Pollution Prevention Plan
VELB = valley elderberry longhorn beetle
USFWS = U.S. Fish and Wildlife Service

Chapter 4
CEQA Evaluation

This Chapter presents the CEQA evaluation of the Bypass Pipeline Project in the form of an Initial Study Checklist.

4.1 Environmental Checklist Form

1. **Project title:**
   Raw Water Bypass Pipeline Project

2. **Lead agency name and address:**
   CEQA:
   San Juan Water District
   9935 Auburn-Folsom Road
   Granite Bay, California 95746

   NEPA:
   Bureau of Reclamation
   Central California Area Office
   7794 Folsom Dam Road
   Folsom, CA 95630

3. **Contact person and phone number:**
   CEQA:
   Keith Durkin
   Assistant General Manager
   San Juan Water District
   9935 Auburn-Folsom Road
   Granite Bay, CA 95746

   NEPA:
   Matthew See
   Natural Resources Specialist
   Bureau of Reclamation
   Central California Area Office
   7794 Folsom Dam Road
   Folsom, CA 95630

4. **Project location:**
Folsom Reservoir in Sacramento County.

5. **Project sponsor's name and address:**
Keith Durkin
Assistant General Manager
San Juan Water District
9935 Auburn-Folsom Road
Granite Bay, CA 95746

6. **General plan designation:**
Not Applicable.

7. **Zoning:**
Not Applicable.

8. **Description of project:**

SJWD, in partnership with the City of Roseville, is proposing to construct a redundant water transmission system to ensure delivery of Central Valley Project water from Folsom Reservoir during planned and unplanned outages of Reclamation's existing 84-inch diameter pipeline. The Proposed Project includes construction of a 72-inch diameter raw water bypass pipeline that would extend from the existing pump station (Folsom Pumping Plant) near Folsom Dam to the Hinkle Wye and would parallel the existing pipeline on the south side. The Proposed Project also includes construction of a 60-inch diameter raw water pipeline that would connect the proposed 72-inch bypass pipeline at the Hinkle Wye to an existing City of Roseville pipeline that parallels Auburn-Folsom Road. One surge tower would be constructed directly beside the existing east surge tower of Reclamation's 84-inch pipeline. The surge tower would be approximately 120 feet tall with a diameter of 12 feet.

The existing 84-inch raw water pipeline owned by Reclamation is currently the only source of surface water for both SJWD and the City of Roseville. Outages of this pipeline leave SJWD and the City vulnerable to water shortages. Recent inspections of the 84-inch pipeline have shown corrosion problems. Reclamation is planning to take this pipeline out of service for up to twelve weeks to complete the necessary maintenance and repairs. SJWD and the City of Roseville cannot withstand an outage of more than 24 to 60 hours due to a lack of storage and alternate water supplies. Construction of the bypass pipeline would allow Reclamation to complete the repairs in the necessary timeframe while continuing to convey water to SJWD and the City of Roseville. The bypass pipeline would also add redundancy to the water

supply system by preventing water shortages during unplanned outages and emergencies on the existing 84-inch pipeline.

See Chapter 2 of this EA/IS for additional details of the project. Also see Figure 2-1 in Chapter 2, which shows the location of the proposed bypass pipeline.

9. **Surrounding land uses and setting: Briefly describe the project's surroundings:**

The Bypass Pipeline Project would be constructed on Reclamation property just south of Right Wing Dam at Folsom Reservoir in Sacramento County, California. The project area consists of Federally-owned lands that are currently leased to and managed by CDPR. The project area is just north of the City of Folsom. Surrounding land uses include residential, commercial, and open space.

10. **Other public agencies whose approval is required** (e.g., permits, financing approval, or participation agreement.)

USEPA – Air Quality Conformity
SMAQMD – Air Quality
SWRCB – NPDES General Permit
USFWS – Section 7 Consultation
Corps – CWA Section 404 Permit
CVRWQCB – CWA Section 401 Water Quality Certification, Dewatering Permit
SHPO– NHPA Section 106 consultation
City of Roseville – project and financing approval

4.2 Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following page.

✓ Aesthetics	Agriculture Resources	✓ Air Quality
✓ Biological Resources	✓ Cultural Resources	✓ Geology/Soils
✓ Hazards & Hazardous Materials	✓ Hydrology/Water Quality	Land Use/Planning
✓ Mineral Resources	✓ Noise	Population/Housing
Public Services	✓ Recreation	✓ Transportation/Traffic
✓ Utilities/Service Systems	✓ Mandatory Findings of Significance	

4.3 Determination

On the basis of this initial evaluation:

I find that the Proposed Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

✓ I find that although the Proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

I find that the Proposed Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

I find that the Proposed Project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

I find that although the Proposed Project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the Proposed Project, nothing further is required.

Keith B. Durkin — May 29, 2009

Signature — Date

Keith B. Durkin — San Juan Water District

Printed Name — For

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, than the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section XVII, "Earlier Analyses," may be cross-referenced).

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

    a) Earlier Analysis Used. Identify and state where they are available for review.

    b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The explanation of each issue should identify:

a) The significance criteria or threshold, if any, used to evaluate each question; and

b) The mitigation measure identified, if any, to reduce the impact to less than significance.

4.4 Evaluation of Environmental Impacts

This section analyses the Bypass Pipeline Project according to CEQA.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
I. AESTHETICS -- Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings, or other locally recognized desirable aesthetic natural feature within a city-designated scenic highway?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

I.a) There are no scenic vistas within the project area. No scenic vistas would be affected by the project. There would be no impact.

I.b) There are no scenic highways within or near the project area. There would be no impact.

I.c) Under the Proposed Project, a new pipeline would be constructed parallel to Reclamation's existing 84-inch raw water pipeline. Temporary visual impacts from equipment and vehicle staging, clearing, grading, and stockpiling of

excavated material may occur during construction. However, the project area would be re-contoured and returned to pre-project conditions after construction is complete. The visual impacts associated with construction would be temporary and less than significant.

The Proposed Project would involve construction of a buried pipeline that would only be visible at the two tie-ins to the existing 84-inch pipeline. The only other structures that would be visible would be air vents and one surge tower. The surge tower would look similar to the two surge towers already present on the existing 84-inch pipeline (See Figure 3.6-2 in Chapter 3). The surge tower would be approximately 120 feet tall with a 12 foot diameter and would be beige to match the existing pipeline and surge towers. The new surge tower would be located directly beside the easterly most existing surge tower near Folsom Dam. It would not be visible from the American River Bike Path; however it would be visible from certain areas on Reclamation's property. Because the site already contains an existing above-ground pipeline with two surge towers, construction of the proposed pipeline is not expected to substantially alter the existing character of the site. All disturbed areas would be re-contoured and revegetated. Several existing trees would need to be removed within the proposed pipeline alignment; however this is not expected to change the overall visual quality as portions of the area have previously been cleared of vegetation. Overall, aesthetic impacts would be less than significant.

I.d) The Proposed Project would not create a new source of light or glare as the pipeline would be buried and no new lights would be installed. There would be no impact.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
II. AGRICULTURE RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	☐	☐	☐	☒

III.a) There are no agricultural resources within the project area. The Proposed Project would not convert any farmland to non-agricultural uses. There would be no impact.

III.b) The Proposed Project would not affect any agricultural resources. There would be no impact.

III.c) The Proposed Project would not involve any changes that could result in conversion of farmland to non-agricultural uses. There would be no impact.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
III. AIR QUALITY				
Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non- attainment under an applicable Federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒

IV.a) Construction of the Proposed Project would not result in any permanent emissions during operation. Emissions from construction would be less than 85 pounds per day NOx (see Air Quality in Chapter 3). Since emissions would be less than the thresholds of significance for Sacramento County, the project would not conflict with existing air quality plans. The Proposed Project would not conflict with or obstruct implementation of the applicable air quality plan.

IV.b) Temporary emissions from construction of the Proposed Project would not exceed the thresholds of significance established by the SMAQMD and would not exceed the General Conformity de minimis thresholds. No emissions are expected during operation of the raw water bypass pipeline. Overall, the Proposed Project would not violate existing air quality standards or contribute substantially to an existing or projected air quality violation. This impact would be less than significant.

IV.c) Construction of the Proposed Project would be of a short duration and would result in temporary emissions that would be below the thresholds of significance for Sacramento County. Operation of the Proposed Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non- attainment under an applicable Federal or State ambient air quality standards. According to SMAQMD, a project is not be considered cumulatively significant for $PM_{10,}$ SO_2 and NO_2 if the project is not significant for project alone emissions, and the project is not cumulatively significant for ROG, NOx, and CO based on background concentration and project concentration. Since the Proposed Project would not be considered significant for project emissions, it would not be cumulatively significant. Any cumulative effects from project emissions would be less than significant.

IV.d) The Proposed Project would not expose sensitive receptors to substantial pollutant concentrations. Construction of the bypass pipeline would result in temporary emissions from operation of vehicles and construction equipment. All construction would take place on Federal property, well away from residences and businesses. The nearest sensitive receptors, residents and businesses across Auburn-Folsom Road, are at least 300 feet away and would are not expected to be exposed to substantial pollutant concentrations during construction. There would be no impact.

IV.e) Operation of the Proposed Project is not expected to create any objectionable odors. Construction would be temporary and would take place on Federal property, well away from residences and businesses. No objectionable odors are expected during construction. There would be no impact.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
IV. BIOLOGICAL RESOURCES – Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game and the United States Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in City or regional plans, policies, regulations or by the California Department of Fish and Game (CDFG) or USFWS?	☐	☒	☐	☐
c) Have a substantial adverse effect on Federally protected wetlands as defined by Section 404 of the Clean Water Act (CWA) (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
IV. BIOLOGICAL RESOURCES – Would the project:				
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (e.g. oak trees or California walnut woodlands)?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

IV.a) The Proposed Project has the potential to affect the VELB, which was Federally listed as threatened in 1980 (Federal Register 1980). Critical habitat has been designated for this species, but includes no land in the project area (Federal Register 1980). Based on an elderberry survey, six elderberry shrubs that contain stems measuring 1.0 inch or greater in diameter at ground level were identified within 100 feet of the proposed construction activities. Mitigation Measures BIO-4 and BIO-5 would reduce any effects that may occur as a result of construction to less than significant.

The Proposed Project has the potential to affect special-status birds and bats with the potential to occur within the project vicinity, including Swainson's hawk, a California threatened species, white-tailed kite, a California fully protected species, loggerhead shrike, a California species of concern, and pallid bat, a California species of concern. Construction disturbance during the breeding season could result in impacts to special-status birds from the incidental loss of fertile eggs or nestlings, or nest abandonment. Likewise, construction noise could impact active roosting sites of the pallid bat if they occur within the project area. With implementation of Mitigation Measures BIO-4 and BIO-6, impacts to special-status bird and bat species would be less than significant.

The California red-legged frog (*Rana aurora draytonii*) is Federally listed as threatened (Federal Register 1996) and is a California species of special concern. Critical habitat was designated in 2001. Critical habitat for the species was proposed on November 3, 2005 (Federal Register 2005), and the final rule was published on April 16, 2006 (Federal Register 2006). No critical habitat is within the project area. There have been no recorded sightings of the California red-legged frog within or near the project area; therefore, the California red-legged frog is not likely to occur within the project area. No adverse effects to the California red-legged frog are expected with the construction of any project features.

IV.b) No riparian areas, vernal pools, or freshwater marsh exist within the project area. Construction of the proposed pipeline would result in the temporary and permanent loss of vegetation through clearing, grading, excavation for the proposed pipeline trench, and the disturbance of areas for staging of vehicles and equipment. Native vegetation, including trees, occurring within the construction and staging areas may be affected by construction activities through direct removal or damage to roots from heavy equipment. Currently it is estimated that a total of 58 trees (21 oak, 29 pine, 8 deciduous) within the construction zone would need to be removed prior to construction and 13 trees would require trimming. Construction may also result in impacts to vegetation from dust and increased erosion. Since the pipeline would be underground, maintenance may entail ground disturbance along the length of the pipeline as well as disturbance of vegetation at the ground surface for equipment to gain access to the pipeline. Implementation of Minimization Measure BIO-2 would require protection of trees and their roots during construction and re-vegetation of disturbed areas to restore native vegetation and reduce impacts from erosion immediately following construction. Implementation of Minimization Measure BIO-3 would require all trees to be removed during the non-nesting season to reduce potential impacts to nesting and breeding birds. These measures would reduce impacts to an insignificant level.

IV.c) During a wetland investigation conducted for the project area, no wetlands were identified. However, a drainage that extends north from the gravel access road, parallel to the Right Wing Dam and adjacent recreation trail was identified that may be considered a Waters of the U.S. and subject to Section 404 of the Clean Water Act if the drainage is altered by construction of the proposed pipeline. Mitigation Measure BIO-1 would reduce any impacts associated with alteration to this drainage to less than significant.

IV.d) The Proposed Project entails the construction of a buried pipeline. No permanent fences or other barriers to migratory wildlife would be constructed. Therefore, there would be no impact.

IV.e) The Proposed Project would take place on Federal property, which is not subject to County or City ordinances or tree preservation policies. There would be no impact.

IV.f.) The Proposed Project area is not included in any adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plan. Therefore, there would be no impact.

Mitigation Measures

BIO-1: Compliance with Section 404 and 401 of the Clean Water Act
In the event that the drainage ditch that extends north from the gravel access road, parallel to the Right Wing Dam and adjacent recreation trail is found to be a Waters of the U.S. subject to Section 404 of the CWA, a Nationwide Permit will be obtained from the Corps prior to construction. Additionally, a CWA Section 401 permit will be obtained from the CVRWQCB to ensure the proposed discharge complies with all State water quality requirements. All permit requirements will be implemented, including re-contouring of the disturbed area to pre-project conditions.

BIO-2: Tree Protection and Re-vegetation
In order to minimize direct impacts to trees located within the construction area, tree protection measures would be implemented prior to construction and re-vegetation would occur immediately following construction.

Tree protection measures would reduce impacts to trees during construction and may include the following measures:

1. Protective fencing will be installed at the Root Protection Zone of trees that would be directly impacted by construction. The Root Protection Zone is defined as the area within a circle with a radius equal to the greatest distance

from the trunk to any overhanging foliage in the tree canopy. Posts will be placed where they will not impact tree roots.

2. No construction staging or disposal of construction materials or byproducts including but not limited to paint, plaster, or chemical solutions will be allowed in the Root Protection Zone.

3. All work conducted in the ground within the Root Protection Zone of any protected tree will be accomplished with hand tools to the extent feasible.

4. "Natural" or pre-construction grade will be maintained in the Root Protection Zone.

5. In areas where the grade around the protected tree will be lowered, some root cutting may be unavoidable. Cuts will be clean and made at right angles to the roots. When practical, roots will be cut back to a branching lateral root. Any necessary root pruning is to be conducted by qualified personnel. Cut roots subject to open air conditions longer than a few hours should be covered with burlap and maintained in a moist condition until covered by soil.

6. Root damage and soil compaction caused by heavy equipment traversing the Root Protection Zone in locations where it is unavoidable will be mitigated by applying plywood or mulch in the Root Protection Zone to avoid soil compaction.

7. All pruning will be conducted by a certified arborist or other qualified contractor.

8. To compensate for the loss of oak trees, mitigation will be required at a one to one ratio. The site for mitigation has not been determined and will require further coordination with Reclamation for design and location.

Once construction has been completed, revegetation will occur to restore vegetated areas disturbed during construction to pre-construction conditions, to the extent feasible. Native plant species used for revegetation will be selected based on existing vegetation in the project area and consultation with USFWS and Reclamation.

BIO-3: Nesting Migratory Birds, Including Raptors

To the extent possible, removal of trees and potential bird breeding habitat in the project area would occur between September 1 and January 31, when birds are not expected to be nesting within the project area, in order to comply with the Migratory Bird Treaty Act. Prior to any tree removal and construction, a qualified biologist or ornithologist would conduct preconstruction field surveys in and adjacent to the

project area for nesting migratory birds, including raptors. Surveys would be conducted during the season immediately preceding tree removal and grading operations when birds are building and defending nests or when young are still in nests and dependent on the parents. If no nests are found during the surveys, tree removal and grading may proceed. If nests are found, construction activities including tree removal shall not be conducted within a buffer zone designated by USFWS or the CDFG around the nest(s) until after the breeding season (February to the end of August), or until a wildlife biologist determines that the young have fledged (usually late-June through mid-July).

BIO-4: Biological Resources Awareness Training
Prior to construction, including clearing of vegetation and grading, mandatory training regarding the biological resources present at the Proposed Project site will be provided to all construction personnel. The training will be developed and provided by a qualified biologist familiar with the sensitive species that may occur in the project area and will provide educational information on the natural history of these species, reporting sightings, required minimization measures to avoid impacts, and penalties for not complying with biological minimization requirements. All project personnel will be required to receive training before they start working.

BIO-5: Elderberry Minimization
The following measures are subject to and contingent upon a Section 7 consultation with the USFWS. Reclamation will implement the following measures proposed in the VELB Conservation Guidelines (Guidelines) (USFWS 1999).

Where possible, complete avoidance of elderberry shrubs would be enforced. Avoidance measures would include the establishment and maintenance of a 100-foot temporary construction buffer zone surrounding elderberry shrubs containing stems measuring 1.0 inch or greater in diameter at ground level. The proposed staging area and access roads contain elderberry shrubs that would be within 20 feet of project activities. These shrubs; however, are currently exposed to ongoing Reclamation O&M activities similar to the Proposed Project (the USFWS issued a BO for Reclamation O&M actions). All elderberry shrubs within 20 feet of project activities will also be flagged or fenced for easy identification. Construction crews will be briefed on the need to avoid elderberry shrubs and no vehicles will enter within the 20 foot buffer zone.

Additionally, the following dust control measures will be implemented:

Water or otherwise stabilize the soil prior to ground disturbance;

- Cover haul trucks;
- Employ speed limits on unpaved roads;

- Apply dust suppressants;
- Physically stabilize soil with vegetation, gravel, recrushed/recycled asphalt or other forms of physical stabilization;
- Reduce number of vehicle trips;
- Install one or more grizzlies, gravel pads, and/or wash down pads adjacent to the entrance of a paved public roadway to control carry-out and trackout;
- Minimize vegetation clearing; and
- Revegetate post-construction.

Elderberry shrubs that cannot be avoided would be transplanted if technically feasible. All elderberry shrubs containing stems measuring 1.0 inch or greater in diameter at ground level would be transplanted to a USFWS approved conservation area between November 1 and February 15.

Each elderberry shrub with stem measuring 1.0 inch or greater in diameter at ground level that is adversely affected would be compensated with elderberry seedlings or cuttings in accordance with the Guidelines. Elderberry shrubs that cannot be feasibly transplanted will be compensated at a ratio two-times the normal amount. A minimum survival rate of at least 60 percent of the elderberry shrubs would be maintained throughout the monitoring period. If survival drops below this level, additional seedlings would be planted. Stock for plantings would be obtained from local sources.

Native plants associated with elderberry shrubs at the Action Area or similar reference sites would be planted in accordance with the Guidelines. A minimum survival rate of at least 60 percent of the associated native plants would be maintained throughout the monitoring period. If survival drops below this level, additional seedlings or cuttings would be planted. Only stock from local sources would be used, unless such stock is not available, per the Guidelines.

BIO-6: Conduct Nesting Bird Surveys, Roosting Bat Surveys, and Establish No-Disturbance Buffers, as Appropriate, for Special-Status Species
If construction activities must occur during the breeding season for special-status birds and/or bats (February 1–August 31), the following measures will be implemented:

Retain a qualified wildlife biologist who is experienced in identifying special-status birds and bats and their habitat to conduct nesting-bird surveys and bat roosting surveys in and within 500 feet of the project site, where feasible. These surveys must

be conducted within one week prior to initiation of construction activities at any time between February 1 and August 31.

If no active nests or roosts are detected during surveys, then no additional minimization measures are required.

If special-status birds or bats are found in the construction area or in the adjacent surveyed area, a no-disturbance buffer will be established around the nesting/roosting location to avoid disturbance or destruction of the nest site/roost site until after the breeding season or after a wildlife biologist determines that the young have fledged (usually late-June through mid-July). The extent of these buffers will be determined by a wildlife biologist in consultation with the applicable resource agencies (i.e., USFWS and/or CDFG) and will depend on the level of noise or construction disturbance, line of site between the nest/roost and the disturbance, ambient levels of noise and other disturbances, and other topographical or artificial barriers. These factors will be analyzed and used by a qualified wildlife biologist to assist the USFWS and/or CDFG in making an appropriate decision on buffer distances.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES – Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in State CEQA 15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to State CEQA 15064.5?	☐	☒	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

VI.a) The Proposed Project APE has been subject to cultural resources survey and inventory. No ethnographic, historic, or archaeological sites were located within the APE. The record search and literature review revealed that no previously recorded ethnographic, historic, or archaeological sites were located within the APE. No historic properties listed on or determined eligible for listing on the NRHP were located within the APE; however, Folsom Dam and Right Wing Dam are located immediately adjacent to the APE. These resources have been determined eligible for listing on the NRHP as part of the Central Valley Project Multiple Property Listing under Criterion A. Construction of the Proposed Project would have no effect on these properties. Overall, the Proposed Project is not expected to affect historical resources. Reclamation will consult with the State Historic Preservation Officer to seek their concurrence in compliance with the 36 CFR Part 800 regulations that implement section 106 of the NHPA. There would be no impact.

VI.b) No significant archaeological resources were located within the APE; however ground disturbing activities have the potential to encounter buried resources not visible during surface inspection. Mitigation Measure CUL-1 would reduce this impact to less than significant.

VI.c) No paleontological resources or unique geologic features were located within the APE; however ground disturbing activities have the potential to encounter buried paleontological resources not visible during surface inspection. Mitigation Measure CUL-1 would reduce this impact to less than significant.

VI.d) Ground disturbing activities have the potential to disturb previously unknown human remains. Mitigation Measure CUL-2 would reduce this impact to less than significant.

Mitigation Measures

CUL-1: Prior to the initiation of construction or ground-disturbing activities, all construction personnel should be alerted to the possibility of buried cultural remains. This includes prehistoric and/or historic resources. Personnel should be instructed that upon discovery of buried cultural materials, work in the immediate vicinity of the find should cease and a qualified archaeologist should be contacted immediately. Once the find has been identified, plans for treatment and for the evaluation and mitigation of impacts to the find, if they are found to be NRHP or California Register of Historical Resources eligible, will need to be developed.

CUL-2: If human remains are encountered during construction, work in that area must halt and the Sacramento Coroner must be immediately notified. If the remains are determined to be Native American, then the NAHC is to be notified within 24 hours, as required by Public Resources Code 5097. The NAHC will notify the designated Most Likely Descendant who will provide recommendations for the treatment of the remains within 48 hours of being granted access to the site.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
VI. GEOLOGY AND SOILS -- Would the project:				
a) Exposure of people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☒	☐	☐

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

VI.a) There are no Alquist-Priolo designated earthquakes in the project area. Although the Bear Mountain fault occurs north of the project, this fault has not been designated as active by the U.S. Geological Survey. Ground shaking potential is low for the area. There are no known unstable soils within the Proposed Project area and the risk of landslides is low due to relatively thin soils. The Proposed Project would not involve construction of any buildings. The Proposed Project would not expose peoples or structures to adverse affects associated with seismic activity.

VI.b) Construction of the Proposed Project would likely require several areas to be cleared and graded. Additionally, a trench would be excavated in preparation for placement of the new pipeline. During construction, temporary erosion may occur in areas that have been disturbed, especially during the rainy season. Implementation of the mitigation measure WQ-1 (described in Section VIII under Hydrology and Water Quality) would require stormwater runoff and erosion control measures that would minimize erosion and reduce this impact to less than significant.

Excavation of the trench for the new pipeline would result in up to 12,000 cubic yards of excess soil material. This soil material would become the property of the construction contractor and would be trucked off-site for disposal. Backfill material would be trucked to the construction site from off-site sources to place in the trench. The loss of soil material is expected to be less than significant as the area has been previously disturbed from construction of the original Folsom Dam and Reservoir and construction of the existing 84-inch pipeline.

VI.c) As described above, there are no known unstable soils within the project area that could result in landslides, lateral spreading, subsidence, liquefaction or collapse. Additionally, there would be no buildings constructed as part of the Proposed Project. There would be no impact.

VI.d) There are no expansive soils within the alignment of the proposed pipeline. There would be no impact.

VI.e) No septic tanks or wastewater systems would be constructed as part of the Proposed Project. There would be no impact.

Mitigation Measures

See Mitigation Measure WQ-1 in Section VIII Hydrology and Water quality.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
VII. HAZARDS AND HAZARDOUS MATERIALS -- Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☒	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☒	☐	☐

VIII.a) Operation of the bypass pipeline would not require the routine transport, use, or disposal of hazardous materials. There would be no impact.

VIII.b) If some hazardous materials are used during construction, these would be of a small quantity and would be stored temporarily on-site. Mitigation Measure PHS-1 and PHS-3 would reduce any potential hazardous materials impacts to less than significant.

VIII.c) There are no known existing or proposed schools within ¼ mile of the proposed construction site. The nearest school is Carl H. Sundahl Elementary School, located approximately one mile south of the construction site. There would be no impact.

VIII.d) The Proposed Project would not occur on a listed hazardous materials site. There would be no impact.

VIII.e) The Proposed Project would not occur at or near an airport. There would be no impact.

VIII.f) The Proposed Project would not occur in the vicinity of a private airstrip. There would be no impact.

VIII.g) A portion of the pipeline would need to be constructed below Folsom Dam Road and may result in the temporary closure of a portion of Folsom Dam Road. Reclamation employees need to use Folsom Dam Road, as it is the only access road to the CCAO Headquarters. In addition, Reclamation employees must use Folsom Dam Road to access the main concrete dam for maintenance or emergencies. The construction contractor would be required to ensure one lane of Folsom Dam Road remains open throughout construction to provide employee access to the CCAO Headquarters and to allow continual access to Folsom Dam. This impact would be considered less than significant.

VIII.h) There are some vegetated areas within the Proposed Project construction site. While construction is not expected to increase the potential for wildfires, use of equipment and materials in and around the project site could ignite dry brush. There are no residential areas within the project site but there are Reclamation buildings and a CDPR Gold Fields District headquarters in the general vicinity. If equipment ignites dry vegetation in the area, these buildings could be at risk. Mitigation Measure PHS-2 would reduce this impact to less than significant.

Mitigation Measures

PHS-1: Hazardous Materials Management Plan

Prior to initiation of construction activities, the construction contractor will be required to prepare a Hazardous Material Management Plan for review by Reclamation. The purpose of this plan is to have an established plan of action if hazardous materials are encountered during construction and to establish BMPs to reduce the potential for exposure to hazardous wastes. The plan will:

- Define a protocol for proper handling and disposal of hazardous materials if they are encountered during construction or demolition activities;
- Define a protocol for emergency procedures and handling and disposal of hazardous materials if an accidental spill occurs during construction; and
- Establish BMPs to reduce the potential for spills of toxic substances.

Typical BMPs to reduce the potential for spills may include, but are not limited to:

- Having a spill prevention and control plan with a designated supervisor to oversee and enforce proper spill prevention measures;
- Providing spill response and prevention education for employees and subcontractors;
- Stocking appropriate clean-up materials onsite near material storage, unloading and use areas;
- Designating hazardous waste storage areas away from storm drains or watercourses;
- Minimizing production or generation of hazardous materials onsite or substituting chemicals used onsite with less hazardous chemicals;
- Designating areas for construction vehicle and equipment maintenance and fueling with appropriate control measures for run-on and runoff; and
- Arranging for regular hazardous waste removal to minimize onsite storage.

PHS-2: Fire Management Plan
Prior to initiating construction activities, the construction contractor will prepare and implement a Fire Management Plan. The plan will include fire prevention and response methods including fire precaution, presuppression, and suppression measures consistent with the policies and standards of Reclamation and the affected jurisdictions.

PHS-3: Worker Health and Safety Plan
Prior to construction, the construction contractor will prepare a Health and Safety Plan that should, at a minimum, identify:

- All contaminants that could be encountered during excavation activities;
- All appropriate worker, public health, and environmental protection equipment and procedures;

- Emergency response procedures;
- Most direct route to a hospital; and
- Site Safety Officer.

The plan will require documentation that all workers have reviewed and signed the plan and will be made available to all CCAO employees and visitors. Additionally, in order to maintain public safety during all phases of construction, the plan will address:

- Adequate signage regarding the location of construction sites and warning of the presence of construction equipment;
- Fencing of construction staging areas and of construction areas if dangerous conditions exist when construction is not occurring; and
- Temporary walkways or vehicle lanes (with appropriate markings, barriers, and signs to safely separate pedestrians from vehicular traffic) and detour signage where an existing path or lane will be closed during construction.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
VIII. HYDROLOGY AND WATER QUALITY – Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☒	☐	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☐	☒
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☒	☐	☐
f) Otherwise substantially degrade water quality?	☐	☐	☐	☒
g) Place housing within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

VIII.a) The Proposed Project would require vegetation to be cleared in the construction zones and could require temporary stockpiling of materials. Stormwater run-off from cleared areas and stockpiles could contain elevated levels of sediments and other pollutants. A drainage ditch that eventually empties into the Lower American River does pass through a portion of the project area. Any discharge of stormwater runoff to this ditch or into the Lower American River could violate existing water quality

standards. Mitigation Measure WQ-1 would reduce the potential for water quality violations to less than significant.

Additionally, some dewatering may be necessary during excavation of the pipeline trench. Discharge of this water to a surface water body could result in water quality impacts. Mitigation Measures WQ-2 would reduce the potential for water quality impacts to less than significant.

VIII.b) The Proposed Project would not deplete groundwater supplies or interfere with groundwater recharge. There are no known groundwater wells in the general vicinity of the proposed construction site because of low groundwater yield. There would be no impact.

VIII.c) The Proposed Project would not alter an existing stream or river. There would be no impact.

VIII.d) The Proposed Project would involve construction of a buried pipeline that would not change the drainage of the area or increase runoff. There would be no impact.

VIII.e) The Proposed Project would not increase the amount of impervious surfaces and would not result in a permanent increase in run-off. Because the construction site would need to be cleared of vegetation, a temporary increase in run-off could occur during construction. This runoff could contain elevated levels of sediments or pollutants from the construction site. Mitigation Measure WQ-1 would reduce this impact to less than significant.

VIII.f) The Proposed Project would not result in any impacts that would adversely affect water quality. There would be no impact.

VIII.g) The Proposed Project would not involve construction of any housing. There would be no impact.

VIII.h) The Proposed Project would not be constructed within the 100-year flood hazard area. The proposed pipeline would be buried and is not expected to impede any flood flows. There would be no impact.

VIII.i) While the Proposed Project would occur directly below Folsom Dam and Reservoir, it would not involve the construction of any buildings and would not expose any people to the risk of dam failure. There would be no impact.

VIII.j) The Proposed Project would not require construction of any new buildings; therefore there would be no potential for impacts associated with seiche, tsunamis, or mudflows. There would be no impact.

Mitigation Measure

WQ-1: NPDES Construction Permit and SWPPP

The construction contractor will be required to obtain a State General Permit for Storm Water Discharges Associated with Construction Activity according to the National Pollutant Discharge Elimination System program. This will entail filing a Notice of Intent with the Central Valley Regional Water Quality Control Board and development and implementation of a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP will describe BMPs that will be implemented to contain stormwater runoff on-site and to reduce erosion and sedimentation.

WQ-2: Dewatering Permit

The construction contractor will be required to obtain a dewatering permit from the CVRWQCB prior to any discharges. This will entail filing a NOI and may require water quality testing and monitoring. The construction contractor will be required to adhere to all permit conditions.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
IX. LAND USE AND PLANNING - Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

IX.a) The Proposed Project would take place on Federal property and would not divide an established community. There would be no impact.

IX.b) The only applicable plan for the Proposed Project site is the 2007 Folsom Lake State Recreation Area and Folsom Powerhouse State Historic Park General Plan/Resource Management Plan. The 2007 General Plan designates the Proposed Project site as "Administration" which is restricted to staff and related personnel involved with the maintenance of Folsom Dam and Reservoir. The Proposed Project would not change this land use designation and would not result in any permanent impacts to existing recreation facilities. SJWD and the City of Roseville would need to obtain easements from Reclamation for construction of the proposed pipeline. The City of Roseville would need to obtain an encroachment permit from the City of Folsom for their portion of the pipeline along Auburn-Folsom Road. These permits would be consistent with existing policies. The Proposed Project would not conflict with any land use plans, policies, or regulations. There would be no impact.

IX.c) The Proposed Project would occur on Federal property. There is no HCP or NCCP in effect within the area; therefore there would be no impact.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
X. MINERAL RESOURCES – Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☒	☐
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

X.a) There are no known mineral resources of value within the project site. Granite is present throughout the Proposed Project area and may need to be removed during excavation of the trench for the proposed pipeline. The granite has never been commercially mined, but has been used for embankment material during construction of Folsom Dam and Reservoir. Because the material has not been previously mined and the quantity of material being removed would be small, this impact would be less than significant.

X.b) There is no locally-important mineral resource recovery site located within the project site. There would be no impact.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
XI. NOISE - Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

XI.a) Proposed Project construction would take place during daytime hours, when noise-sensitive receptors in the project vicinity (identified in Section 3) will be least affected by noise generated from construction activities. Potential noise impacts related to construction equipment and construction-related traffic would be short-term. Construction of the pipeline is expected to last for eight months, with peak construction equipment operating for approximately four to five weeks. As described in Section 3, the area has relatively high noise levels due to traffic along Auburn-Folsom Road in the vicinity of the Proposed Project. Noise from the Proposed Project would be imperceptible and would not exceed the noise level standards in the applicable county and city noise ordinances.

Long-term, permanent noise associated with operation of the raw water bypass pipeline is not expected. Periodic maintenance of the bypass pipeline would be necessary and would consist of exercising of valves, checking the cathodic protection system (approximately every six months), and walking the alignment periodically (approximately one to two times per year) for a visual inspection. Noise generated from these activities would be imperceptible to sensitive receptors in the area. Therefore, the impact would be less than significant.

XI.b) Construction activities have the potential to produce vibration levels that may be annoying or disturbing to humans and may cause damage to structures. Vibration from construction projects is caused by general equipment operations, and is usually highest during pile driving, soil compacting, jack hammering and construction related demolition and blasting activities. The Proposed Project would include blasting and excavation activities. However, because the boundary of construction would be more than 1,000 feet away from the nearest residence or other noise sensitive receptor, construction activities would not be expected to cause significant noise or vibration impacts. In addition, construction contractors would be required to use blast mats during blasting to control noise and fly rock. Warning systems and

procedures would be in place prior to any blasting to alert workers and protect their health and safety. Vibration from blasting would be monitored to ensure it does not exceed Reclamation and SJWD vibration thresholds to protect existing structures and infrastructure in the area. This impact would be considered less than significant.

XI.c) The Proposed Project would not result in a substantial permanent increase in ambient noise levels in the project vicinity. Operation of the proposed raw water bypass pipeline is not expected to create any audible noise and no residences or noise sensitive receptors are present within 1,000 feet of the site. Periodic maintenance on the bypass pipeline would include visual inspections and exercising of the valves, which would only occur several times each year and would not generate any substantial or permanent noise. Overall, there would be no substantial permanent increase in noise levels with implementation of the Proposed Project. There would be no impact.

XI.d) For construction noise, a "substantial" noise increase (as noted in [XI.b] of the Noise significance criteria) can be defined as interference with activities during the day and night. One indicator that construction noise could interfere with daytime activities would be speech interference, and an indicator that construction noise could interfere with nighttime activities would be sleep interference. Because no nighttime construction is proposed, this analysis need only consider daytime construction noise.

Construction would temporarily increase ambient noise levels in the project vicinity. Based on anticipated construction equipment that will be used, it is anticipated that short-term construction noise levels could range from 70 to 95 A-weighted decibels (dBA) (peak levels up to 95 dBA would occur when several pieces of equipment are operating simultaneously) at 50 feet from construction activities, but these noise levels would be intermittent throughout the day. Average noise levels would be substantially lower. The closest noise-sensitive receptor is over 1,000 feet away from the proposed construction activities and therefore the Proposed Project noise would not be expected to interfere with daytime speech. This would be a less-than-significant potential impact for daytime construction.

XI.e) The Proposed Project would not be located within an airport; therefore there would be no impact.

XI.f) The Proposed Project would not be located within the vicinity of a private airstrip; therefore, there would be no impact.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
XII. POPULATION AND HOUSING – Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

XII.a) Operation of the Proposed Project would not change the timing or quantity of Folsom Reservoir water delivered to SJWD and the City of Roseville. The proposed bypass pipeline would be used to convey water from Folsom Reservoir to SJWD and the City of Roseville during planned or unplanned outages of the existing 84-inch raw water pipeline. The proposed bypass pipeline could also used in conjunction with the existing 84-inch pipeline, in order to reduce headloss. This would not result in an increase in water use; the same quantity of water currently delivered through the 84-inch pipeline would simply be conveyed through both pipelines. Daily water use would not change under the Proposed Project; existing water contracts contain maximum daily water deliveries that SJWD and the City of Roseville cannot exceed. Additionally, the SJWD and City of Roseville water treatment plants do not have the capacity to treat any additional water beyond the quantity they have currently contracted for. No new intake at Folsom Reservoir is needed as part of the Proposed Project; therefore no change in the timing or quantity of water received by SJWD and the City of Roseville would occur. SJWD and the City of Roseville would continue to receive water from Folsom Reservoir according to the provisions in their existing water

contracts. There would be no changes to water supply under the Proposed Project.

XII.b) The Proposed Project would not require the displacement of existing housing. There would be no impact.

XII.c) The Proposed Project would not displace any people; therefore there would be no impact.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
XIII. PUBLIC SERVICES – Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
a) Fire protection?	☐	☐	☐	☒
b) Police protection?	☐	☐	☐	☒
c) Schools?	☐	☐	☐	☒
d) Parks?	☐	☐	☐	☒
e) Other governmental facilities (including roads)?	☐	☐	☐	☒

XIII.a) The Proposed Project would not require additional fire protection and would not affect any existing fire services. There would be no impact.

XIII.b) The Proposed Project would not require additional police protection and would not affect existing police services. There would be no impact.

XIII.c) The Proposed Project would not affect any existing schools and would not require any additional schools. There would be no impact.

XIII.d) The Proposed Project would not affect any parks services and no new CDPR staff would be required. There would be no impact.

XIII.e) No public roads or other government facilities would be affected by the Proposed Project. There would be no impact.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
XIV. RECREATION –				
a) 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?	☐	☒	☐	☐
b) 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?	☐	☐	☒	☐

XIV.a) The Proposed Project could require the closure of the American River Bike Trail during construction. This trail is highly used throughout the seasons and closure of this trail would be considered a significant impact. With implementation of mitigation measure REC-1, this impact would be reduced to a less-than-significant level.

XIV.b) The Proposed Project does not include construction of any permanent new recreation facilities but would require construction of a temporary trail detour for the American River Bike Trail while the proposed pipeline is installed beneath it. The temporary trail detour would be needed for four weeks and would be established in a disturbed area that would not require any vegetation removal and would be sited to reduce potential environmental impacts. The area would be fully restored once construction is complete. The environmental effects of a temporary trail detour would be less than significant.

Mitigation Measure

REC-1: Temporary Trail Detour
SJWD and Reclamation will coordinate with CDPR to construct a temporary trail detour that will allow for continuous use of the American River Bike Trail during

construction. Reclamation will issue a press release to alert the public of the detour. Signs will be posted to alert recreation users of the trail detour. Fencing will be erected to protect the recreation users from construction equipment and vehicles and the open trench that will be required for the pipeline. The trail detour will be sited in an already disturbed area to minimize environmental effects. After construction is complete, the detour will be removed and the area will be returned to its previous condition.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
XV. TRANSPORTATION/TRAFFIC – Would the project:				
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	☐	☐	☒	☐
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Result in inadequate parking capacity?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☐	☒

XV.a) The analysis presented in Section 3 shows that construction activities would be expected to cause an increase in Average Daily Trips (ADT) of between 0.48 and 0.58 percent during peak construction (approximately four to five weeks in duration). This temporary increase in construction traffic is not expected to cause substantial congestion on local roads. Additionally, temporary increases in ADT would not create any noticeable congestion at existing intersections in the area. This impact would be less than significant.

XV.b) The City of Folsom LOS thresholds apply to long-term traffic impacts where project-generated traffic delays measure greater than five seconds. Placer County states that if the existing Level of Service (LOS) is worse than C or D, impacts must be mitigated back to the existing level. The traffic increases resulting from implementation of the Proposed Project would be temporary, only lasting the duration of construction activities. The temporary ADT increase of less than 1 percent is not expected to degrade the existing LOS or cause noticeable increases in delays at intersections.

One other cumulative project, the CCAO Building Replacement Project would be constructed in the same vicinity and same time period as the Proposed Project. Potential overlapping construction for the CCAO Building Replacement Project and the Proposed Project would last approximately 5-6 months and would result in an approximate total increase of 214 trips per day or a combined total increase in ADT of 0.68 to 0.78 percent. Overall this small increase is not expected to change existing LOS or cause substantial delays at existing intersections. Cumulative traffic impacts from the Proposed Project would be less than significant.

XV.c) The Proposed Project site is not in the vicinity of an airport; therefore, there would be no impact.

XV.d) The Proposed Project would not include any road construction nor would it increase hazards due to a design feature or incompatible use. Project-related truck and construction-worker traffic would share Auburn-Folsom Road with

other vehicles. The introduction of slow-moving trucks and construction-related increases in traffic could contribute to hazard concerns for pedestrians and bicyclists. However, the short-term nature of these increases as well as the low percentage increase in overall traffic along Auburn-Folsom Road would create a negligible traffic impact. This impact would be less than significant.

XV.e) The Proposed Project would not affect emergency access to residential areas in the project vicinity. Construction vehicles would not be parked on public roads; vehicles would be parked in the staging area and construction zones on Federal property. Reclamation requires emergency access to Folsom Dam and Reservoir at all times. While the Proposed Project may require one lane of Folsom Dam Road to be closed, one lane would be kept open at all times to ensure continued access to Folsom Dam and Reservoir. This impact would be less than significant.

XV.f) Adequate temporary parking for construction vehicles and equipment would be made available onsite at the staging area. Project construction and operations would not create a long-term demand for parking. Therefore, no impacts associated with parking capacity would result.

XV.g) The Proposed Project would not modify the roadway system or change existing land uses. Therefore, no conflict would occur with adopted policies, plans, or programs supporting alternative transportation. The project would not result in a change in transit demand nor affect existing bicycle routes. Therefore, there would be no impact.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
XVI. UTILITIES AND SERVICE SYSTEMS - Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board (RWQCB)?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g) Comply with Federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

XVI.a) The Proposed Project would not generate wastewater. There would be no impact.

XVI.b) The Proposed Project does not involve the construction or expansion of water or wastewater treatment facilities. There would be no impact.

XVI.c) The Proposed Project would not involve the construction or expansion of stormwater facilities. There would be no impact.

XVI.d) The Proposed Project would not require a new water supply and would not result in any new or expanded entitlements. There would be no impact.

XVI.e) The Proposed Project would not generate any wastewater and therefore there would be no impact.

XVI.f) While the project would not generate a permanent waste stream, construction activities could result in waste that would need to be disposed of. A landfill with sufficient permitted capacity would be used to dispose of all construction-related wastes. There would be no impact.

XVI.g) The Proposed Project would comply with all Federal, State, and local statutes and regulations related to solid waste. There would be no impact.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
XVII. MANDATORY FINDINGS OF SIGNIFICANCE				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☒	☐	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

XVII.a) The Proposed Project has the potential to affect aesthetics, air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology/water quality, mineral resources, noise, recreation, and transportation/traffic; however the majority of these impacts would be temporary and less than significant. Potentially significant impacts could occur to biological resources, cultural resources, geology and soils, hazardous materials, water quality, and recreation. All potentially significant impacts would be reduced to a less-than-significant level with the incorporation of the mitigation measures described above. With mitigation measures, the project would not substantially degrade the quality of the environment.

XVII.b) Impacts of the Proposed Project are related to construction activities and are therefore temporary in nature. With incorporation of the mitigation measures listed above, cumulative impacts associated with the Proposed Project are expected to be less than significant. A detailed cumulative discussion for each resource can be found in the NEPA analysis in Chapter 3.

XVII.c) The Proposed Project would have the potential to cause adverse effects to human beings through general construction activities, the temporary use of small quantities of hazardous materials, and use of equipment that could increase the potential for wildfires. Although these impacts would be temporary, the mitigation measures described above (PHS-1, PHS-2, and PHS-3) would reduce these impacts to a less-than-significant level. Construction activities in and around the American River Bike Trail could pose a risk to trail users, as recreation users often try to use the trail even when it has been closed. The mitigation measure REC-1 described above would reduce this impact to a less-than-significant level. With the implementation of mitigation measures, the Proposed Project would not result in any environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly.

Chapter 5
Consultation and Coordination

This section presents the agencies and parties that were consulted during development of this document, the distribution list for the document, public involvement, and responses to all comments received on the Draft EA/IS .

5.1 Consultation and Coordination

Several agencies and parties were consulted during the development of this document, including:

- USFWS – Section 7 consultation was initiated with USFWS on April 17, 2009. Reclamation is expecting a Biological Opinion for the project by summer 2009. A copy of the initiation letter can be found at the end of this chapter. This project is exempt from the Fish and Wildlife Coordination Act Requirements. See the end of this chapter for a memorandum that describes the reasons for this exemption.

- CDPR – Reclamation and SJWD will coordinate with CDPR regarding the temporary trail detour that will be required during construction. A copy of this EA/IS has been provided to CDPR.

- SHPO – Reclamation initiated SHPO consultation in February, 2009. On March 5, 2009, Reclamation received concurrence from SHPO that the project would not affect any cultural resources or historic properties. A copy of the SHPO letter of concurrence can be found at the end of this chapter.

- ITAs – Reclamation's ITA specialists determined there would be no impacts to ITAs from the project. A copy of this concurrence letter can be found at the end of this chapter.

5.2 Distribution List

This document is available to the public upon request. Copies of the draft document have been provided to USFWS and CDPR for review. A hard copy of the draft EA/IS and FONSI/MND can be found at the following libraries:

- Granite Bay Public Library, 6475 Douglas Boulevard, Granite Bay, CA 95746

- Folsom Public Library, 300 Persifer Street, Folsom, CA 95630

The draft document is also available online at SJWD's website: http://www.sjwd.org

5.3 Public Involvement

Reclamation and SJWD released the Draft EA/IS and Draft FONSI/MND for 30 days of public review and comment. A press release was issued by Reclamation to alert the public and other interested parties of the review period for the document. SJWD placed a notice in the local area newspaper notifying the public of the release of the Draft EA/IS and FONSI/MND and the comment period. A Notice of Availability of the EA/IS and Notice of Intent to Adopt an MND was filed with the State Clearinghouse (State Clearinghouse # 2009042099). Copies of the press release, newspaper add, and State Clearinghouse notice can be found in Appendix A.

5.4 Comments and Responses on the Draft EA/IS

As noted above, Reclamation and SJWD released the Draft EA/IS and Draft FONSI/MND for 30 days of public review and comment. Four comments were received during the comment period and are presented below with responses. These comments were considered prior to approval of the proposed project. Based on the comments, no new significant effects were identified and there were no substantial revisions made to the Draft EA/IS that would require recirculation according to Section 15073.5 of the CEQA guidelines. See Appendix B for copies of all comments on the Draft EA/IS.

5.4.1 Sacramento Metropolitan Air Quality Management District

Comment:

The MND Air Quality section indicates that the project's air quality impacts are less than significant according to SMAQMD thresholds. The air quality analysis was based on modeling data using an emission factor developed by the Midwest Research Institute for construction projects, and emissions factors generated from the EMFAC and OFFROAD models. Please provide us with an electronic copy of this modeling, so that we can verify its assumptions and accuracy.

We recommend that the MND include a discussion of climate change. Construction activities proposed for this project may result in significant greenhouse gas emissions. While there are currently no adopted thresholds of significance for project-related greenhouse gasses, multiple authoritative resource guides exist for addressing greenhouse gas emissions for projects subject to CEQA. The California Air Pollution Control Officers Association (CAPCOA) publication *CAPCOA CEQA & Climate Change* provides guidance on addressing project impacts on climate change through CEQA (www.capcoa.org). Additionally, the Governor's Office of planning and Research (OPR) has issued a technical advisory on this subject, entitled

CEQA and Climate Change: Addressing Climate Change through CEQA Review (www.opr.ca.gov).

If you have any questions regarding these comments, please contact Molly Wright at (916)-874-4886 or mwright@airquality.org. This project is also subject to any and all SMAQMD rules in effect at the time of construction. The attached sheet entitled *SMAQMD Rules and Regulations* Statement enumerates some of those rules for your convenience. Additional information about those and all other rules that may be applicable can be found at www.airquality.org or by calling Compliance Assistance at (916)-874-4884.

Response:

A discussion on climate change has been added to the air quality section in Chapter 3 (See Pages 3-15 and 3-17). The greenhouse gas emissions from construction of the proposed project were found to be minimal; therefore no minimization measures are necessary.

An electronic copy of the modeling completed for this project will be provided to SMAQMD for review.

5.4.2 California Department of Transportation (Caltrans)

Comment:

A Traffic Management Plan (TMP) should be prepared by the project proponent and reviewed by the Caltrans District 3 Traffic Manager. The TMP should be submitted prior to project construction and discuss the expected dates and duration of the project work schedule. It should also include appropriate strategies to mitigate construction traffic impacts to the nearby freeway interchange and mainline. All truck haul routes, points of access, and other project related travel on US 50 or other highways or freeways should be described and identified. It is recommended that the hauling activities, listed on Page 2-6 of the document, occur during non-peak period traffic hours. The Caltrans TMP Guidelines are enclosed for your use. For assistance, please contact John Holzhauser, the Caltrans District 3 Traffic Manager (DTM), at (916) 274-0505.

Response:

SJWD will consult with Caltrans prior to the start of construction to determine if a Traffic Management Plan is required.

5.4.3 United Auburn Indian Community of the Auburn Rancheria

Comment:

Thank you for requesting information regarding the above referenced subject. The United Auburn Indian Community (UAIC) is comprised of Miwok and Miadu people whose traditional homelands include portions of Placer and Nevada counties,

as well as some surrounding areas. The Tribe is concerned about development within ancestral territory that has potential to impact sites and landscapes that may be of cultural or religious significance.

We understand Pacific Legacy conducted a records search and pedestrian survey of the area of potential effect in 2008 and no pre-historic cultural resources were found. However, in the event of an inadvertent discovery of pre-historic cultural resources or human burials, the UAIC would like to be contacted immediately to provide input on the appropriate course of action.

If you have any questions, please contact Shelly McGinnis, Analytical Environmental Services at (916) 447-3479.

Response:

In the event of inadvertent discovery of pre-historic cultural resources or human burials, the UAIC will be contacted.

5.4.4 County of Sacramento

Comment:

The Sacramento County Department of Transportation has reviewed the notice of intent to adopt a negative declaration for the above referenced project. We appreciate the opportunity to review this document.

It appears that construction operations for this project will take place almost solely on City of Folsom, Placer County, and Caltrans roadways. Since this is the case, we have no specific comments at this time and will assume that the San Juan Water District will solicit comments from these jurisdictions.

Response:

Comment noted.

Endangered Species Act Section 7 Consultation

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846

In reply refer to:
81420-2009-F-0708-1

JUL 01 2009

Memorandum

To: Michael R. Finnegan, U.S. Bureau of Reclamation, Folsom, California

From: Field Supervisor, Sacramento Fish and Wildlife Office, Sacramento, California

Subject: Section 7 Formal Consultation on the Raw Water Pipeline Bypass Project, Sacramento County, California

This is in response to the U.S. Bureau of Reclamation (Reclamation) April 16, 2009, request for initiation of formal consultation with the U.S. Fish and Wildlife Service (Service) on the proposed Raw Water Pipeline Bypass Project (Proposed Action) to be constructed on Federal property at Reclamation's Central California Area Office compound adjacent to Folsom Dam in Sacramento County, California. Your request was received in our office on April 20, 2009. At issue are effects to the federally-threatened valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*; beetle). In accordance with section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act), this document represents the Service's biological opinion of the effects of the proposed project on federally-listed species. Critical habitat has been designated for the beetle but none exists in the project area; therefore, no beetle critical habitat will be adversely modified or destroyed, by the proposed project.

Although there is one occurrence of the federally-threatened California red-legged frog (*Rana aurora draytonii*) within the [California Natural Diversity Database (CNDDB), March 2009, California Department of Fish and Game (CDFG) 2009a, b] near Folsom Reservoir, the proposed project area is outside the known habitats for this species, and the species is unlikely to utilize habitats on the site. Therefore, the Service has determined that the project may affect, but is not likely to adversely affect, California red-legged frog.

This biological opinion is based on information provided in Reclamation's letter requesting consultation, the February 2009 *Raw Water Bypass Pipeline Project Biological Assessment* [Reclamation and San Juan Water District (SJWD) 2009], and the April 2009 *Raw Water Bypass Pipeline Project Draft Environmental Assessment/Initial Study and Finding of No Significant Impact/Mitigated Negative Declaration* (SJWD *et al.* 2009). A complete administrative record is on file at the Sacramento Fish and Wildlife Office.

Consultation History

April 20, 2009: The Service received a letter and Biological Assessment dated April 16, 2009, from Reclamation initiating formal section 7 consultation on the proposed Raw Water Pipeline Bypass Project near Folsom Dam, Sacramento County, California.

April 30, 2009: Matthew See (Natural Resource Specialist, Reclamation, Central California Area Office, Folsom) sent Joseph Terry (Senior Biologist, Sacramento Fish and Wildlife Office) via electronic mail a map and revised data on the number of elderberry (*Sambucus* sp.) stems that may be impacted by the Proposed Action (See *in lit.* 2009). The revised data replaces the data in Table 1 of the letter initiating formal consultation for the Proposed Action and the data in Table 3.4-2 of the February 2009 Biological Assessment. Matthew See requested since the exact alignment of the pipeline is not yet known that the Service consider in its biological opinion that all six of the elderberry shrubs within 100 feet of the proposed construction area (with diameter at ground level of greater than 1 inch) may need to be transplanted (See *in lit.* 2009).

BIOLOGICAL OPINION

Description of the Proposed Action

The SJWD, in partnership with the City of Roseville, is proposing to construct a permanent raw water bypass pipeline to ensure delivery of water from Folsom Reservoir during planned and unplanned outages of Reclamation's existing 84-inch diameter pipeline. Reclamation will be constructing the direct connections to the 84-inch pipeline, including isolation valves and flowmeters. This document does not address Reclamation's connections to the 84-inch pipeline; Reclamation has completed the applicable environmental compliance for this portion of the work. The following subsections describe the construction and operation details of the Proposed Action.

Bypass Pipeline Construction

The Proposed Action includes construction of a 3,400-foot long, 72-inch diameter raw water bypass pipeline underground near Reclamation's Central California Area Office in Folsom, Sacramento County, that would extend from the existing pump station (Folsom Pumping Plant) near Folsom Dam to the Hinkle Wye. A 570-foot long, 60-inch diameter underground pipeline would also be constructed to connect the new 72-inch pipeline to two existing parallel transmission mains operated by the City of Roseville. Figure 1 below illustrates the project area and location of the existing facilities (existing 84-inch pipeline and Folsom Power Plant). Figure 2 below maps the location of the proposed pipeline, staging areas, and construction areas. The exact alignment of the proposed pipeline has yet to be determined. Therefore, as requested by Reclamation (See *in lit.* 2009), this biological opinion assumes a pipeline alignment that would result in the greatest possible impact to the beetle.

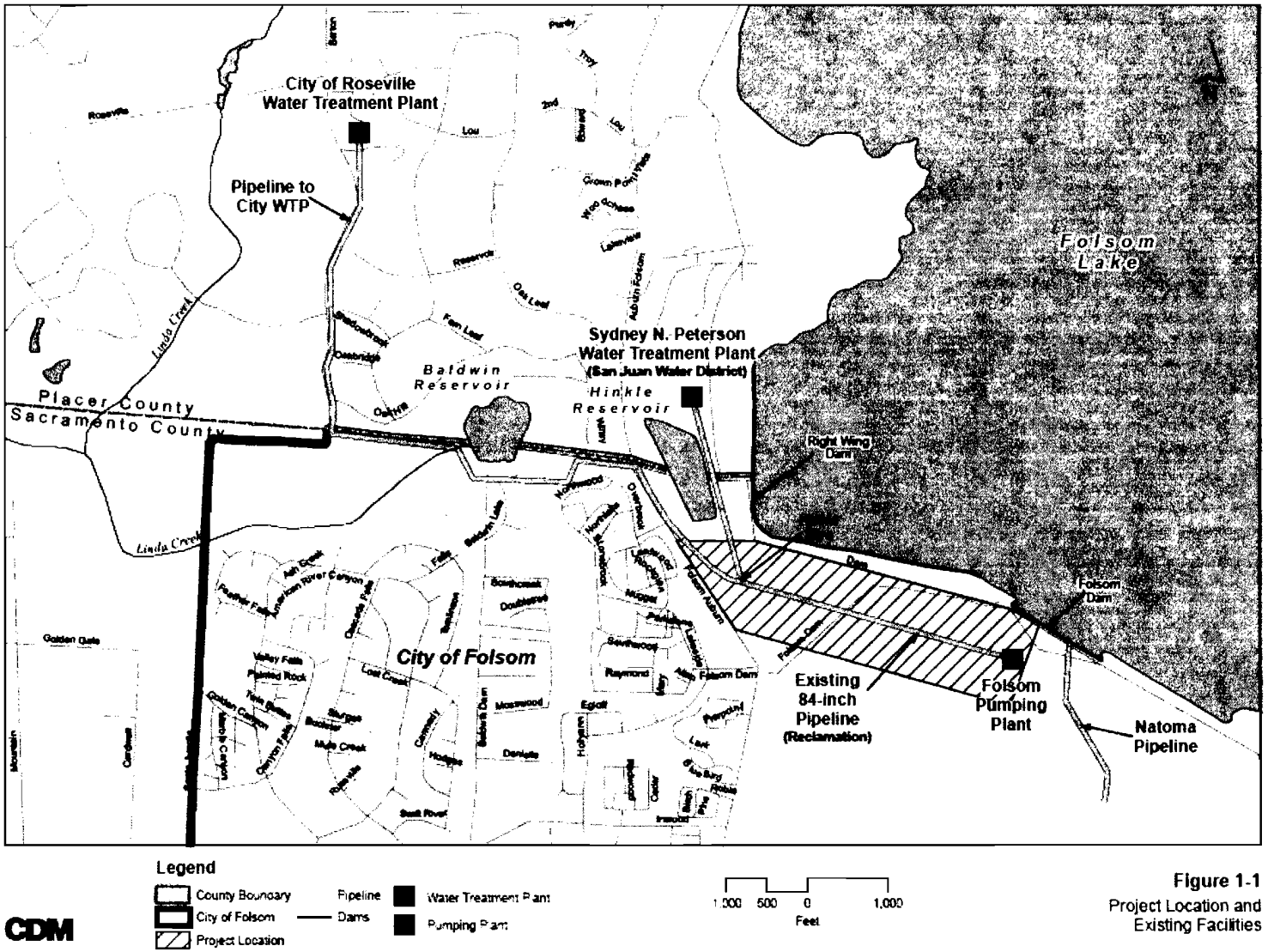


Figure 1-1
Project Location and
Existing Facilities

Figure 1. Project Location and Existing Facilities (taken from Figure 1-1 in SJWD *et al.* 2009).

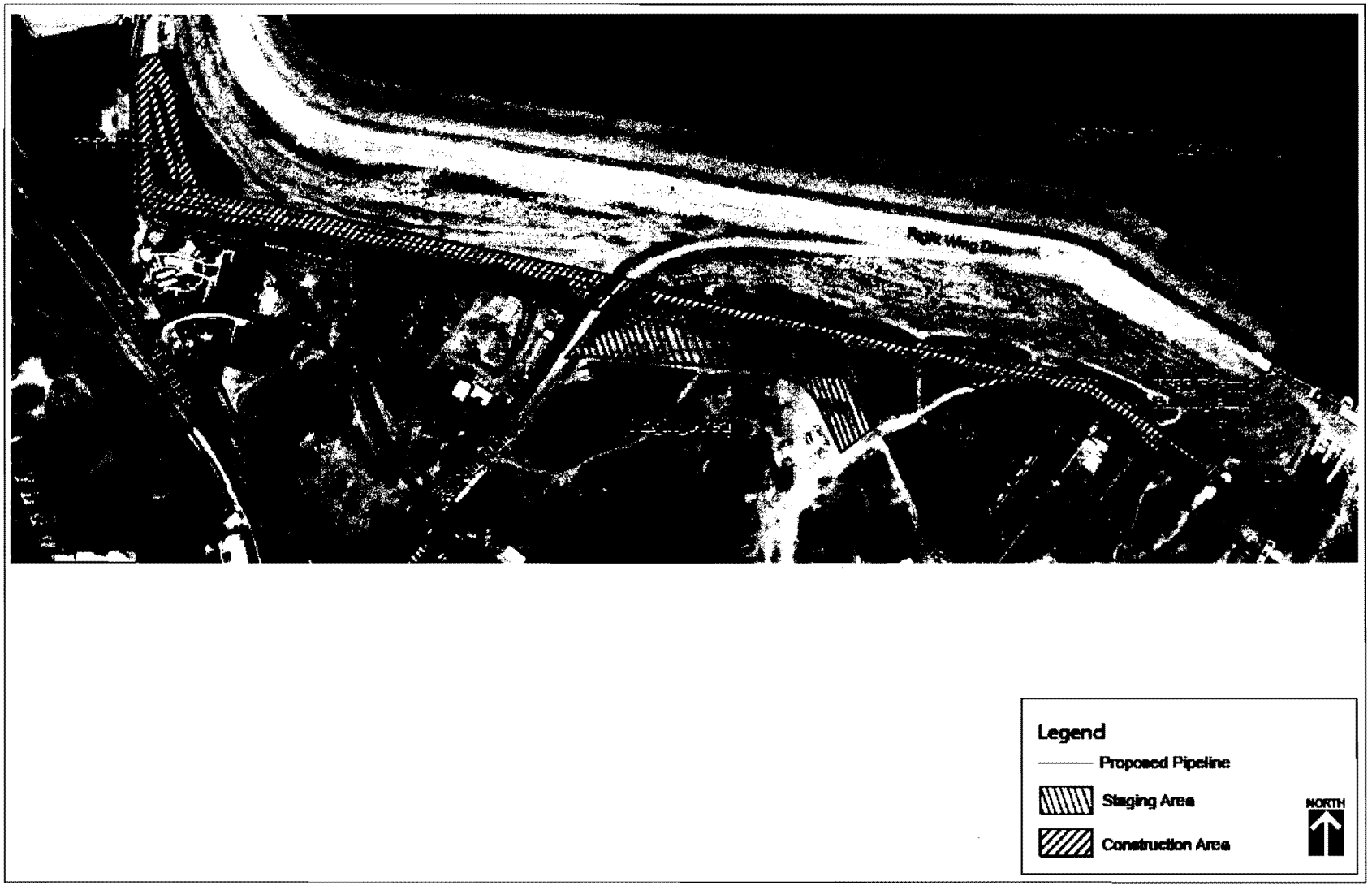


Figure 2. Proposed Raw Water Bypass Pipeline (taken from Figure 2-1 in SJWD *et al.* 2009).

The 72-inch diameter pipeline was determined to be the smallest diameter pipeline the agencies could install to minimize costs while still meeting daily water demands. The 72-inch raw water pipeline would be capable of delivering a combined 165 cubic feet per second to SJWD and the City of Roseville. The proposed pipeline would begin at the connection point to the Reclamation 84-inch gravity line on the southern side of the 84-inch line at a 72-inch butterfly valve. The 72-inch bypass pipeline would then continue west to connect with an existing SJWD 72-inch pipeline just north of the Hinkle Wye. All 3,400 linear feet of the proposed pipeline would be buried and would parallel Reclamation's existing 84-inch pipeline on the southern side. The proposed 72-inch pipeline would be constructed of welded steel pipe with a cement-mortar lining and a cement-mortar coating. One above-ground surge tower would be needed for the new bypass pipeline and would be constructed beside the existing east surge tower of the 84-inch pipeline. The new surge tower would be approximately 120 feet tall with a 12-foot diameter.

Surface water from Folsom Reservoir is delivered to the City of Roseville through Reclamation's existing 84-inch raw water pipeline and then through two existing parallel transmission mains (48-inches and 60-inches in diameter) before entering the City's water treatment plant on Barton Road. An existing 60-inch pipeline connects the 84-inch Reclamation pipeline at the Hinkle Wye to the parallel 48-inch and 60-inch pipelines. The Proposed Action would include construction of a 60-inch pipeline parallel to the existing single 60-inch pipeline to connect the new 72-inch bypass pipeline to the two existing parallel transmission mains. The proposed 60-inch pipeline would be constructed just east of the existing Hinkle Wye and would run parallel and to the south of Roseville's existing 60-inch pipeline and would end approximately 40 feet before Auburn-Folsom Road where it would connect with the two transmission mains. The proposed 60-inch pipeline would be buried and would extend approximately 570 linear feet. It would be constructed beneath the American River Bike Path and a drainage ditch. The pipeline would consist of welded steel pipe with a cement-mortar lining and a cement-mortar coating.

Approximately 20 construction workers would be required on-site each day of construction, with a total construction length estimated to be approximately 30-35 weeks. Work would begin with the clearing and removal of vegetation, followed by the staging of needed materials and equipment. A trench for both the pipelines (4,000 feet long by 10 feet wide and 10 feet deep) would be excavated using open-cut trenching with temporary shoring (stabilization) to prevent collapse of the trench walls. After the pipe is installed in the trench it would be welded together. After the final connections are made at either end of the existing 84-inch pipeline, the new pipelines would be tested. Finally, all equipment and vehicles would be removed and the disturbed areas would be re-contoured to pre-project conditions. Some dewatering may be necessary during excavation of the pipeline trench and some blasting may occur to remove rock in order to achieve the required trench depth.

A total area of up to five acres would be disturbed during construction of the Proposed Action. The disturbed area would include a construction corridor of approximately 50 feet wide by 4,000 feet long that would extend south of the existing 84-inch pipeline from the pump station to the Hinkle Wye, and along the existing Roseville pipeline near Auburn-Folsom Road. The construction corridor would provide access for construction workers and equipment during

excavation of the required trench and would provide space to stockpile materials. In addition to the construction corridor, one staging area would be required to store equipment and vehicles.

The following construction materials would be delivered to the site from off-site sources:

- Approximately 3,400 linear feet of 72-inch diameter pipe and 570 linear feet of 60-inch pipe would be transported to the construction site from the City of Tracy, California, southern California, or Portland, Oregon;
- Approximately 19 pre-cast concrete structures would be delivered to the site from the Folsom or Sacramento area.
- Approximately 12,000 cubic yards of backfill would be delivered to the site from the Folsom or Sacramento area.

Construction vehicles and equipment for the Proposed Action would include flatbed semi-trucks and trailers to transport pipe, concrete ready-mix trucks to transport backfill, and dump trucks to haul away excess excavated materials. Construction for the Proposed Action is currently anticipated to begin in the summer of 2009 and would last for approximately 30 to 35 weeks, depending on the amount of blasting required.

Bypass Pipeline Operation and Maintenance (O&M)

Once it is operating, the proposed 72-inch bypass pipeline would be capable of delivering water at a rate of 165 cubic feet per second to SJWD and the City of Roseville water treatment plants. The bypass pipeline would be of a sufficient capacity to allow an unplanned outage of 30 days at any time of the year, and would also allow for a scheduled outage from December through March (approximately 120 days) for regular maintenance.

The bypass pipeline could be operated by itself in the event of an outage on the existing 84-inch pipeline and could also be used in conjunction with the existing 84-inch pipeline to reduce headloss and consequently reduce pumping at the Folsom Pumping Plant. Operation of the proposed bypass pipeline in conjunction with the 84-inch pipeline would not result in an increase in water use; the same quantity of water currently delivered through the 84-inch pipeline would simply be conveyed through both pipelines. Daily water use would not change under the Proposed Action; existing water contracts contain maximum daily water deliveries that SJWD and the City of Roseville cannot exceed. Additionally, the SJWD and City of Roseville water treatment plants do not have the capacity to treat any additional water beyond the quantity currently contracted for. No new intake at Folsom Reservoir is needed as part of the Proposed Action; therefore, no change in the timing or quantity of water received by SJWD and the City of Roseville would occur. The SJWD and the City of Roseville would continue to receive water from Folsom Reservoir according to the provisions in their existing water contracts.

The proposed bypass pipeline would require routine maintenance, including exercising of valves, assessment of the cathodic protection system every six months, and walking the alignment up to two times each year to complete a visual inspection of the pipeline. Existing roads in the vicinity will be used for maintenance access; no new maintenance roads are proposed.

Conservation Measures

Reclamation will implement the following measures proposed in the *Conservation Guidelines for Valley Elderberry Longhorn Beetle* (Guidelines) (Service 1999). Where possible, the complete avoidance of elderberry shrubs would be enforced. Avoidance measures would include the establishment and maintenance of a 100-foot temporary construction buffer zone surrounding elderberry shrubs containing stems measuring 1.0 inch or greater in diameter at ground level. The proposed staging area and access roads contain elderberry shrubs that would be within 20 feet of project activities. These shrubs, however, are currently exposed to ongoing Reclamation O&M activities similar to the Proposed Action. The Service issued a biological opinion to Reclamation on February 9, 2005, for O&M activities at the Central California Area Office that may affect as many as five elderberry shrubs with a total of 50 stems measuring 1.0 inch or greater in diameter at ground level over a 25 year period (Service 2005). The five elderberry shrubs identified in the 2005 biological opinion for O&M activities occur near the currently proposed action area but are different from the six elderberry shrubs that may be directly impacted by the Proposed Action.

All elderberry shrubs within 20 feet of project activities will also be flagged or fenced for easy identification. Construction crews will be briefed on the need to avoid elderberry shrubs, and no vehicles will enter within the 20-foot buffer zone. Additionally, the following dust control measures will be implemented:

- Water or otherwise stabilize the soil prior to ground disturbance;
- Cover haul trucks;
- Employ speed limits on unpaved roads;
- Apply dust suppressants;
- Physically stabilize soil with vegetation, gravel, recrushed/recycled asphalt or other forms of physical stabilization;
- Reduce number of vehicle trips;
- Install one or more grizzlies, gravel pads, and/or wash down pads adjacent to the entrance of a paved public roadway to control carry-out and trackout;
- Minimize vegetation clearing; and
- Revegetate post-construction.

Elderberry shrubs that cannot be avoided would be transplanted if technically feasible. All elderberry shrubs containing stems measuring 1.0 inch or greater in diameter at ground level would be transplanted to a Service-approved conservation area or bank between November 1 and February 15.

Each elderberry shrub with stems measuring 1.0 inch or greater in diameter at ground level that is adversely affected will be compensated with elderberry seedlings or cuttings in accordance with the Guidelines. Documentation of compensation [including credit sales agreements, bills of sale, and payment receipts from the conservation bank(s)] will be provided to the Service prior to ground-breaking on the Proposed Action. Elderberry shrubs that cannot be feasibly transplanted

will be compensated at a ratio two-times the amount specified in the Guidelines. A minimum survival rate of at least 60 percent of the elderberry shrubs would be maintained throughout the monitoring period. If survival drops below this level, additional seedlings would be planted. Stock for plantings would be obtained from local sources.

Native plants associated with elderberry shrubs at the project area or similar reference sites would be planted in accordance with the Guidelines. A minimum survival rate of at least 60 percent of the associated native plants would be maintained throughout the monitoring period. If survival drops below this level, additional seedlings or cuttings would be planted. Only stock from local sources would be used, unless such stock is not available, per the Guidelines.

Action Area

The action area is defined in 50 CFR § 402.02 as, "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." The action area for the proposed project includes the pipeline bypass construction and staging areas extending from the existing pump station (Folsom Pumping Plant) near Reclamation's Central California Area Office at Folsom Dam to the Hinkle Wye and to the existing City of Roseville transmission mains. The action area also includes all elderberry shrubs within 100 feet of project construction activities that may be indirectly affected by dust or altered hydrology. The action area does not include the project water service area in the City of Roseville since the proposed pipeline bypass project would act as a redundant water supply distribution system during pipeline repairs rather than providing any additional water supply for further development.

Analytical Framework for the Jeopardy Analysis

In accordance with policy and regulation, the jeopardy analysis in this biological opinion relies on four components: (1) the *Status of the Species*, which evaluates the beetle's range-wide condition, the factors responsible for that condition, and their survival and recovery needs; (2) the *Environmental Baseline*, which evaluates the condition of the beetle in the action area, the factors responsible for that condition, and the relationship of the action area to the survival and recovery of the beetle; (3) the *Effects of the Action*, which determines the direct and indirect impacts of the proposed Federal action and the effects of any interrelated or interdependent activities on the beetle; and (4) the *Cumulative Effects*, which evaluates the effects of future, non-Federal activities in the action area on the beetle.

In accordance with policy and regulation, the jeopardy determination is made by evaluating the effects of the proposed Federal action in the context of beetle's current status, taking into account any cumulative effects, to determine if implementation of the proposed action is likely to cause an appreciable reduction in the likelihood of both the survival and recovery of the beetle in the wild.

The jeopardy analysis in this biological opinion places an emphasis on consideration of the range-wide survival and recovery needs of the beetle and the role of the action area in the survival and recovery of the beetle as the context for evaluating the significance of the effects of

the proposed Federal action, taken together with cumulative effects, for purposes of making the jeopardy determination.

Status of the Species

Listing. The beetle was listed as a threatened species under the Act on August 8, 1980 (45 FR 52803). Critical habitat for the species was designated and published in 50 CFR §17.95. Two areas along the American River in the Sacramento metropolitan area have been designated as critical habitat for the beetle. The first area designated as critical habitat for this species is along the lower American River at River Bend (formerly Goethe) and Ancil Hoffman parks (American River Parkway Zone) and the second area is at the Sacramento Zone, an area about a half mile from the American River downstream from the American River Parkway Zone. In addition, an area along Putah Creek, Solano County, and the area west of Nimbus Dam along the American River Parkway, Sacramento County, are considered essential habitat, according to *The Valley Elderberry Longhorn Beetle Recovery Plan* (Service 1984). These critical habitat areas and essential habitat areas within the American River parkway and Putah Creek support large numbers of mature elderberry shrubs with extensive evidence of use by the beetle.

Life History. The elderberry shrub is the sole host plant for the valley elderberry longhorn beetle. Elderberries are locally common components of the remaining riparian forest and savannah landscapes, and to a lesser extent the mixed chaparral-foothill woodlands, of the Central Valley. The occupancy rates of the beetle are reduced in non-riparian habitats (e.g., Talley *et al.* in press), indicating that riparian elderberry habitat an important habitat type for the beetle.

Use of elderberry shrubs by the beetle, a wood borer, is rarely apparent. Frequently, the only exterior evidence of the shrub's use by the beetle is an exit hole created by the larva emerging just prior to the pupal stage. Observations of elderberry shrubs along the Cosumnes River and in the Folsom Lake area indicate that larval beetles can be found in elderberry stems with no apparent exit holes; the larvae either succumb prior to constructing an exit hole or not developed sufficiently to construct one. Larvae appear to be distributed in stems which are 1.0 inch or greater in diameter at ground level and can occur living stems. *The Valley Elderberry Longhorn Beetle Recovery Plan* (Service 1984) and Barr (1991) further describe the beetle's life history.

Population Structure. The beetle is a specialist on elderberry plants, and tends to have small population sizes and occurs in low densities (Barr 1991; Collinge *et al.* 2001). It has been observed feeding upon both blue and red elderberry (Service 1984, Barr 1991) with stems greater than or equal to one inch in diameter (Barr 1991). Sightings of the beetle are rare and in most circumstances, evidence of the beetle is derived from the observation of the exit holes left when adults emerge from elderberry stems. The beetle tends to occur in areas with higher elderberry densities, but has lower exit hole densities than a closely related species, the California elderberry longhorn beetle (Collinge *et al.* 2001).

Distribution and Range. When the beetle was listed in 1980 (Service 1980), the species was known from less than ten localities along the American River, the Merced River, and Putah Creek. By the time the *Valley Elderberry Longhorn Beetle Recovery Plan* was prepared in 1984, additional occupied localities had been found along the American River and Putah Creek. As of 2005, the California Range wide distribution extends from the Sacramento River in Shasta County, southward to an area along Caliente Creek in Kern County (Barr 1991; Talley *et al.* 2006; CNDDB 2005). The CNDDB contained 190 occurrences for this species in 44 drainages throughout the Central Valley. However, the number of records should be viewed with caution as a record does not necessarily indicate a unique population. In many cases, there are multiple records within close proximity to one another within the same watershed or river. For example, 24 records are known within two miles of the American River (CNDDB 2006).

The beetle is considered a poor disperser based on the spatial distribution of occupied shrubs (Barr 1991; Collinge *et al.* 2001). Huxel and Hastings (1999) used computer simulations of colonization and extinction patterns based on differing dispersal distances, and found that the short dispersal simulations best matched the 1997 census data in terms of site occupancy. This suggests that dispersal and colonization are limited to nearby sites. At spatial scales greater than 6.2 miles, such as across drainages, beetle occupancy appears to be strongly influenced by regional extinction and colonization processes, and colonization is constrained by limited dispersal (Collinge *et al.* 2001; Huxel and Hastings 1999). Except for one occasion, drainages examined by Barr that were occupied in 1991, remained occupied in 1997 (Collinge *et al.* 2001; Huxel and Hastings 1999). The one exception was Stoney Creek, which was occupied in 1991, but not in 1997. All drainages found by Barr (1991) to be unoccupied in 1991, were also unoccupied in 1997. Collinge *et al.* (2001) further found that while the proportions of occupancy were similar, the number of sites examined containing elderberry and the density of elderberry at sites had decreased since Barr (1991), resulting in fewer occupied sites and groups. Studies suggest that the beetle is unable to re-colonize drainages where the species has been extirpated, because of its limited dispersal ability (Barr 1991; Collinge *et al.* 2001). This data suggests that drainages unoccupied by the beetle remain unoccupied.

In the northern portion of the beetle's range along the Sacramento River and 13 of its tributaries (including lands in Butte, Placer, Sacramento, Shasta, Sutter, Tehama, Yolo and Yuba counties), the beetle occurs in drainages that function as distinct, relatively isolated metapopulations (Collinge *et al.* 2001). Half of the 14 drainages in the Sacramento Valley surveyed by Barr (1991) in 1991 and again by Collinge *et al.* (2001) in 1997 remained unoccupied in both studies. The beetle experienced extirpation in two drainages and neither were recolonized. Collinge *et al.* (2001) concluded that because of dispersal limitations, unoccupied drainages were likely to remain unoccupied and those where the resident beetle population became extirpated were not likely to be recolonized. One of the implications of their results for conservation was that there is little chance that natural populations would recover following declines (Collinge *et al.* 2001).

The increase in the amount of riparian habitat through restoration and compensation efforts is valuable, but remains small in comparison to estimated historic losses of the habitat. Approximately 50,000 acres of existing riparian habitat has been protected in the Sacramento

and San Joaquin Valley since 1980. In addition, approximately 5,000 acres of habitat has been restored for the benefit of the beetle (including planting of elderberries) and another 1,600 acres of riparian habitat has been restored however, no elderberry plantings were included (Talley *et al.* 2006). An undetermined amount of additional habitat has been restored as a result of compensation for section 7 projects. Despite the efforts of a number of agencies and organizations, the 5,000 acres of restoration activities is less than 1 percent of the estimated 890,000 acres of the historic riparian habitat lost in the Central Valley. Loss of the beetle and its habitat continues, including conversion of agricultural lands, urban development and other activities that are often unreported. The ability of restoration and enhancement of conservation sites to fully compensate for adverse effects to the animal and its lost remnant natural habitat, is uncertain (Holyoak *et al.* in press).

Reasons for Decline and Threats to Survival. The beetle continues to be threatened by habitat loss and fragmentation, predation by the non-native Argentine ants (*Linepithema humile*) (Holway 1998; Huxel 2000; Huxel and Hastings 1999; Huxel *et al.* 2001; Ward 1987), and possibly other factors such as pesticide drift, non-native plant invasion, improper burning regimes, off-road vehicle use, rip-rap bank protection projects, wood cutting, and over-grazing by livestock.

Habitat Loss - Habitat destruction is one of the most significant threats to the beetle. Riparian forests, the primary habitat for the beetle, have been severely depleted throughout the Central Valley over the last two centuries as a result of expansive agricultural and urban development (Huxel *et al.* 2001; Katibah 1984; Roberts *et al.* 1977; Thompson 1961). As of 1849, the rivers and larger streams of the Central Valley were largely undisturbed. They supported continuous bands of riparian woodland four to five miles in width along some major drainages, such as the lower Sacramento River, and generally about two miles wide along the lesser streams (Thompson 1961). Most of the riverine floodplains supported riparian vegetation to about the 100-year flood line (Katibah 1984).

A large human population influx occurred after 1849, however, and much of the Central Valley riparian habitat was rapidly converted to agriculture and used as a source of wood for fuel and construction to serve a wide area (Thompson 1961). The clearing of riparian forests for fuel and construction made this land available for agriculture (Thompson 1961). Natural levees bordering the rivers, once supporting vast tracts of riparian habitat, became prime agricultural land (Thompson 1961). As agriculture expanded in the Central Valley, needs for increased water supply and flood protection spurred water development and reclamation projects. Artificial levees, river channelization, dam building, water diversion, and heavy groundwater pumping further reduced riparian habitat to small, isolated fragments (Katibah 1984). In recent decades, these riparian areas have continued to decline as a result of ongoing agricultural conversion as well and urban development and stream channelization. As of 1989, there were over 100 dams within the Central Valley drainage basin, as well as thousands of miles of water delivery canals and streambank flood control projects for irrigation, municipal and industrial water supplies, hydroelectric power, flood control, navigation, and recreation (Frayer *et al.* 1989). Riparian

forests in the Central Valley have dwindled to discontinuous strips of widths currently measurable in yards rather than miles.

Some accounts state that the Sacramento Valley supported approximately 775,000 to 800,000 acres of riparian forest as of approximately 1848, just prior to statehood (Smith 1977; Katibah 1984). No comparable estimates are available for the San Joaquin Valley. Based on early soil maps, however, more than 921,000 acres of riparian habitat are believed to have been present throughout the Central Valley under pre-settlement conditions (Huxel *et al* 2001; Katibah 1984). Another source estimates that of approximately 5,000,000 acres of wetlands in the Central Valley in the 1850s, approximately 1,600,000 acres were riparian wetlands (Warner and Hendrix 1985; Frayer *et al.* 1989).

Based on a California Department of Fish and Game riparian vegetation distribution map, by 1979, there were approximately 102,000 acres of riparian vegetation remaining in the Central Valley. This represents a decline in acreage of approximately 89 percent as of 1979 (Katibah 1984). More extreme figures were given by Frayer *et al.* (1989), who reported that woody riparian forests in the Central Valley had declined to 34,600 acres by the mid-1980s (from 65,400 acres in 1939).

An even more recent analysis, completed by The Central Valley Historic Mapping Project, observed similar decreases in the amount of riparian habitat (Geographic Information Center 2003). Loss of riparian habitat between 1900 and 1990 in the Central Valley was about 96% in the southern portion of the Valley (Kern County to Fresno County) (16,000 acres remaining), 84% in the middle Valley (Merced County to San Joaquin County) (21,000 acres remaining) and 80% in the northern Valley (Sacramento and Solano counties to Shasta County) (96,000 acres remaining). Although these studies have differing findings in terms of the number of acres lost (most likely explained by differing methodologies), they attest to a dramatic historic loss of riparian habitat in the Central Valley. Lang *et al.* (1989) observed fewer numbers of elderberry shrubs in the lower reach (i.e., Chico to Red Bluff). They attributed this difference to the loss of elderberry shrubs and riparian habitat in the southern reach of the Sacramento River as a result of extensive flood control activities such as the construction and maintenance of levees.

Habitat Fragmentation - Destruction of riparian habitat in central California has resulted not only in a significant acreage loss, but also has resulted in beetle habitat fragmentation. Fahrig (1997) states that habitat fragmentation is only important for habitats that have suffered greater than 80 percent loss. Riparian habitat in the Central Valley, which has experienced greater than 90 percent loss by most estimates, would meet this criterion as habitat vulnerable to effects of fragmentation. Existing data suggests that beetle populations, specifically, are affected by habitat fragmentation. Barr (1991) found that small, isolated habitat remnants were less likely to be occupied by beetles than larger patches, indicating that beetle subpopulations are extirpated from small habitat fragments. Barr (1991) and Collinge *et al.* (2001) consistently found beetle exit holes occurring in clumps of elderberry bushes rather than isolated bushes, suggesting that isolated shrubs do not typically provide long-term viable habitat for this species.

Habitat fragmentation can be an important factor contributing to species declines because: (1) it divides a large population into two or more small populations that become more vulnerable to direct loss, inbreeding depression, genetic drift, and other problems associated with small populations; (2) it limits a species' potential for dispersal and colonization; and (3) it makes habitat more vulnerable to outside influences by increasing the edge:interior ratio (Primack 1998).

Small, isolated subpopulations are susceptible to extirpation from random demographic, environmental, and/or genetic events (Shaffer 1981; Lande 1988; Primack 1998). While a large area may support a single large population, the smaller subpopulations that result from habitat fragmentation may not be large enough to persist over a long time period. As a population becomes smaller, it tends to lose genetic variability through genetic drift, leading to inbreeding depression and a lack of adaptive flexibility. Smaller populations also become more vulnerable to random fluctuations in reproductive and mortality rates, and are more likely to be extirpated by random environmental factors. When a sub-population becomes extinct, habitat fragmentation reduces the chance of recolonization from any remaining populations. The effect of habitat fragmentation likely is exacerbated by the poor dispersal abilities of the beetle (Collinge *et al* 2001; Talley 2005).

Habitat fragmentation not only isolates small populations, but also increases the interface between habitat and urban or agricultural land, increasing negative edge effects such as the invasion of non-native species (Huxel *et al.* 2001; Huxel 2000) and pesticide contamination (Barr 1991). Several edge effect-related factors may be related to the decline of the beetle.

Predation - The invasive Argentine ant (*Linepithema humile*) is a potential threat to the beetle (Huxel 2000). This ant is both an aggressive competitor and predator on native fauna that is spreading throughout riparian habitats in California and displacing assemblages of native arthropods (Ward 1987; Human and Gordon 1997; Holway 1998). The Argentine ant requires moisture and it may thrive in riparian or irrigated areas. A negative association between the presence of the ant and beetle exit holes was observed along Putah Creek in 1997 (Huxel 2000). This aggressive ant could interfere with adult mating or feeding behavior, or prey on eggs and larvae (e.g., Way *et al.* 1992). Surveys along Putah Creek found beetle presence where Argentine ants were not present or had recently colonized, but the beetle was absent from otherwise suitable sites where Argentine ants had become well-established (Huxel, in prep.). Between 1998 and 2002, the number of sites infested by the Argentine ant increased by 3 along Putah Creek and the American River (30 sites total were examined) (Huxel 2000; Holyoak and Talley 2001). The Argentine ant has been expanding its range throughout California since its introduction around 1907, especially in riparian woodlands associated with perennial streams (Holway 1998; Ward 1987). Huxel (in prep.) concluded that, given the potential for Argentine ants to spread with the aid of human activities such as movement of plant nursery stock and agricultural products, this species may come to infest most drainages in the Central Valley along the valley floor, where the beetle is found.

The beetle is also likely preyed upon by insectivorous birds, lizards, and European earwigs (*Forficularia auricularia*) (Klasson *et al.* 2005). These three predators move freely up and down elderberry stems searching for food. The European earwig is a scavenger and omnivore that was often found feeding on tethered mealworm (*Tenebrio monitor*) larvae. The earwig may be common in riparian areas and it may lay its eggs in dead elderberry shrubs. The earwig, like the Argentine ant, requires moisture and is often found in large numbers in riparian and urban areas. Earwig presence and densities tended to be highest in mitigation sites likely because of the irrigation, although this needs to be statistically tested (Klasson *et al.* 2005).

Pesticide Drift - Direct spraying with pesticides and related pesticide drift is a potentially harmful factor for the beetle. A wide range of such spraying is done to control mosquitoes, crop diseases, and undesirable plants and insects. Although there have been no studies specifically focusing on the direct and indirect effects of pesticides on the beetle, evidence suggests that the species may be adversely affected by some pesticide applications. Commonly used pesticides within the range of the beetle include insecticides, most of which are broad-spectrum and likely toxic to the beetle; herbicides, which may harm or kill its host elderberry plants; and broad-spectrum pesticides toxic to many forms of life. The greatest pesticide use occurs in the San Joaquin Valley. Four counties in this region had the highest use: Fresno, Kern, Tulare, and San Joaquin (CDPR 2006). The peak timing of application depends on the chemical agent and other factors including the activity period of the targeted pest insects; the use of the agents may coincide with the most vulnerable period of beetle adult activity, egg-laying and initial larval exposure on the outside of elderberry stems (Talley *et al.* 2006). The California Department of Pesticide Regulation (CDPR) in 1997 listed 239 pesticide active ingredients applied in proximity to locations of beetle (same square mile per Marovich and Kishaba 1997 cited in Talley *et al.* 2006). Pesticide active ingredients sold in California have averaged on the order of 600 million pounds per year since about 1998 (CDPR 2006).

Pesticide use reported to the CDPR is only a fraction of the pesticides sold in California each year. About two-thirds of the active ingredients sold in a given year are not subject to use reporting, including home-use pesticide products. Recent studies of major rivers and streams documented that 96 percent of all fish, 100 percent of all surface water samples and 33 percent of major aquifers contained one or more pesticides at detectable levels (Gilliom 1999). Pesticides were identified as one of the 15 leading causes of impairment for streams included on the Clean Water Act section 303(d) lists of impaired waters. Because the beetle occurs primarily in riparian habitat, the contamination of rivers and streams likely has affects on this species and its habitat. Given the amount and scope of pesticide use, along with unreported household and other uses, and the proximity of agriculture to riparian vegetation in the Central Valley, it appears likely that pesticides are affecting the beetle and its elderberry habitat.

Invasive Plant Species - Invasive exotic plant species may significantly alter the habitat of the beetle. Without adequate eradication and control measures these non-native species may eliminate elderberry shrubs and other native plants. Pest plants of major importance in Central Valley riparian systems include black locust (*Robinia pseudoacacia*), giant reed (*Arundo donax*), red sesbania (*Sesbania punicea*), Himalayan blackberry (*Rubus armeniacus*), tree of heaven

(*Ailanthus altissima*), Spanish broom (*Spartium junceum*), Russian olive (*Eleagnus angustifolia*), edible fig (*Ficus carica*), and Chinese tallowtree (*Sapium sebiferum*). Non-woody invasives such as ripgut brome (*Bromus diandrus*), foxtail barley (*Hordeum murinum*), *Lolium multiflorum*, and starthistle/knapweed (*Centaurea* spp.) also may impair elderberry germination or establishment, or elevate the risk of fire. Invasive plant control efforts often are limited by funding, labor, coordination with landowners, and the resilience and spread of their target plants. No rangewide assessment has been completed on the overall degree of impact of invasive plants on the beetle and its habitat. However, there are a number of local efforts to control invasive riparian plant species. For example, the American River Parkway has invasive species removal efforts by Sacramento Weed Warriors (a community stewardship project associated with the California Native Plant Society) and others, and the Cosumnes River Preserve has a group of volunteers who regularly remove exotics and restore native habitats (Talley *et al.* 2006).

Other Threats - Several other factors may threaten the beetle including fire, flooding, and over-grazing by livestock. The condition of elderberry shrubs can be adversely affected by fire, which is often common at the urban-wildland interface. Brush fires initially have a negative effect on shrub condition and, therefore, beetle larvae through direct burning and stem die-off. A year after fire, however, surviving elderberry resprout and display rapid stem growth (Crane 1989). Fires often scarify the hard elderberry seed coat leading to germination of seedlings the following season (Crane 1989). Frequent or repeated fire, however, may kill remaining shoots, root crowns and seeds, causing elderberry to be eliminated from an area for many years since recruitment by seeds is patchy and generally slow (Crane 1989). Elderberry shrubs appeared suitable for the beetle two to six years after burning, but were often uninhabited, with the presence of old, burned exit holes suggesting pre-burn occupancy and post-burn vacancy (Talley *et al.* 2006.). The post-fire lag in occupancy is likely the result of the limited movements of the beetle. Beetle occupancy occurred six to seven years post burn and, as in the alluvial plain of the American River Parkway, is about the same within the post-burn compared with unburned areas (Talley *et al.* in press). No quantitative studies of the net effects of fire on the beetle have been undertaken (e.g., examining beetle and elderberry through time after burns or in areas with varying burn frequencies and magnitude).

The beetle can tolerate flooding of its riparian habitat. The animal has higher occupancy rates in riparian than non-riparian habitats, and associations between the beetle and proximity to rivers were either not observed or there was a weak positive correlation with nearness to the river (Halstead and Oldham 1990; Talley 2005; Talley *et al.* in press). These findings illustrate that the beetle is not likely harmed by flooding and that higher habitat quality may be associated with rivers. In addition, if elderberry, a facultative riparian shrub, can withstand flooding, then the beetle likely will survive these events. Most floods occur during winter or early spring when the beetle is in its early life history stages, so that the effects of floods are even less likely to affect the beetle. If the shrub is exposed to prolong flooding (i.e. anoxia) and becomes severely stressed, then the beetle may be affected. The duration and magnitude of flooding at which elderberry stresses is uncertain and the levels of stress that affect the beetle is also unknown. Elderberry shrubs have adaptations that plants use to persist with flooding such as lenticels and aerenchyma, demonstrating that it is probably at least somewhat flood tolerant. Finally, if an

area is flooded too frequently so that elderberry cannot survive then no beetles would be able to inhabit the area (Talley 2005).

Another potential factor in the beetle's decline is the effects of inappropriate levels of livestock grazing, which can result in destruction of entire elderberry plants and inhibition of elderberry regeneration. Cattle, sheep and goats readily forage on new elderberry growth, and goats will consume even decadent growth. Well-manicured stands of elderberries, such as occurs due to livestock grazing, have generally been shown to have a relative absence of beetles (Service 1984). The effects on the beetle of both grazing and exotic plant invasions are likely significantly exacerbated by the problem of habitat fragmentation of elderberries. Such fragmentation increases the edge:interior ratio of habitat patches, thereby facilitating the adverse effects of these outside influences.

Environmental Baseline

There are six known records of the beetle within about 5.5 miles of the proposed project action area (CNDDB occurrence numbers 1, 83, 85, 169, 170, and 191; CDFG 2009a, b). The closest recorded sighting is about 1.2 miles northwest of the project action area when surveys of 20 elderberry shrubs in 1991 and 1992 found eight shrubs with beetle exit holes (CNDDB occurrence number 169; CDFG 2009a, b). A beetle mitigation area with 27 transplanted elderberry shrubs (10 with evidence of beetle exit holes) is reported at Prairie Oaks about 3.0 miles south of the action area (CNDDB occurrence number 191). Evidence of beetles has also been reported about 5 miles southwest of the project action area at Nimbus Flats along Lake Natoma and further downstream along the American River (CNDDB occurrence number 1). Evidence of beetles has also been reported at Miners Ravine, Placer County, about 4.4 miles north of the project action area (CNDDB occurrence number 85) and along the northeast shore of Folsom Lake in El Dorado County about 5.5 miles northeast of the action area (CNDDB occurrence number 83) (CDFG 2009a, b).

The Service has issued several biological opinions to Reclamation for effects to the beetle near the currently proposed action area near Reclamation's Central California Area Office adjacent to Folsom Dam (Service 1995, 2005, 2007, 2008, and 2009). Reclamation's Central California Area Office completed an Elderberry Survey report (1998) including the currently proposed project action area in an effort to fulfill a requirement outlined by the 1995 Biological Opinion for the Interim Water Contract Renewals (Service 1995). This biological opinion required Reclamation to synthesize existing information, and gather new information on the distribution and potential habitat of federally listed, proposed, and candidate species. In addition, the biological opinion required Reclamation to distribute guidance on construction and maintenance methods (levees, canals, roads, etc.) in a manner most beneficial for listed, proposed, and candidate species. Results of the survey, which only covered the Folsom Unit, indicated that there were 141 elderberry shrubs, 56 of which contained evidence of beetle exit holes. Subsequent surveys indicated that there are well over 1,291 elderberry shrubs in the vicinity of the Folsom area within the Central California Area Office jurisdiction (B. Deason, pers. comm.

on January 10, 2004, cited in Service 2005). Elderberry shrubs in the Folsom area offer connectivity to the lower American River population of the valley elderberry longhorn beetle.

On February 9, 2005, the Service issued a biological opinion for O&M activities occurring on Reclamation lands at the Central California Area Office (Service 2005). The biological opinion authorized the incidental take of "all beetles inhabiting as many as, but no more than, five (5) elderberry shrubs, each with at least one stem measuring 1.0 inch or greater in diameter at ground level, or as many as 50 elderberry stems measuring 1.0 or greater in diameter at ground level due to routine maintenance activities in the next 25 years" (Service 2005). The five elderberry shrubs identified in the 2005 biological opinion for O&M activities occur near the currently proposed action area but are different from the six elderberry shrubs that may be affected by the currently Proposed Action.

On January 27, 2009, the Service issued a biological opinion for the Central California Area Office Building Replacement Project (Service 2009). Biologists from CDM Consulting and the Service conducted surveys for the presence of the beetles, exit holes, and elderberry shrubs in the building replacement project area on October 22, 2008. Results of the surveys indicated that construction activities for the building replacement project could directly and indirectly affect a total of 32 elderberry shrubs with at least one stem greater than or equal to 1-inch in diameter at ground level. The Service authorized the incidental take of all beetles inhabiting as many as 10 elderberry shrubs with stems one inch or greater in diameter at ground level (Service 2009).

On August 20, 2008, a protocol-level survey of elderberry shrubs was conducted in the project action area for the currently Proposed Action. During the survey, the number of elderberry shrubs in the project area, their stem diameters, and the presence and number of exit holes formed by the valley elderberry longhorn beetle as they exit the branch were determined. Based on the elderberry survey, six elderberry shrubs containing stems measuring 1.0 inch or greater in diameter at ground level were identified within 100 feet of the proposed project construction activities (SJWD *et al.* 2009, See *in lit.* 2009). All of the elderberry shrubs are in non-riparian habitat. None of the elderberry shrubs had evidence of beetle exit holes. The locations of the six elderberry shrubs within 100 feet of proposed construction activities are illustrated in Figure 3 below (shrub # 1, 2, 3, 6, 11, and 13). The number and size of the stems of the six elderberry shrubs are shown in Table 1 below. There are a total of 13 elderberry stems within 100 feet of proposed construction activities that have a diameter at ground level of greater than 1 inch. Of those 13 stems, 11 stems have a diameter at ground level of between 1 – 3 inches, and 2 stems have a diameter at ground level of between 3 – 5 inches.

The Service believes that the beetle is reasonably certain to occur within the project area because of the biology and ecology of the animal, the presence of suitable habitat, and the recent observations of beetle exit holes within elderberry shrubs located within the same watershed and near the proposed project. Therefore, the project site has the potential to have valley elderberry longhorn beetles.

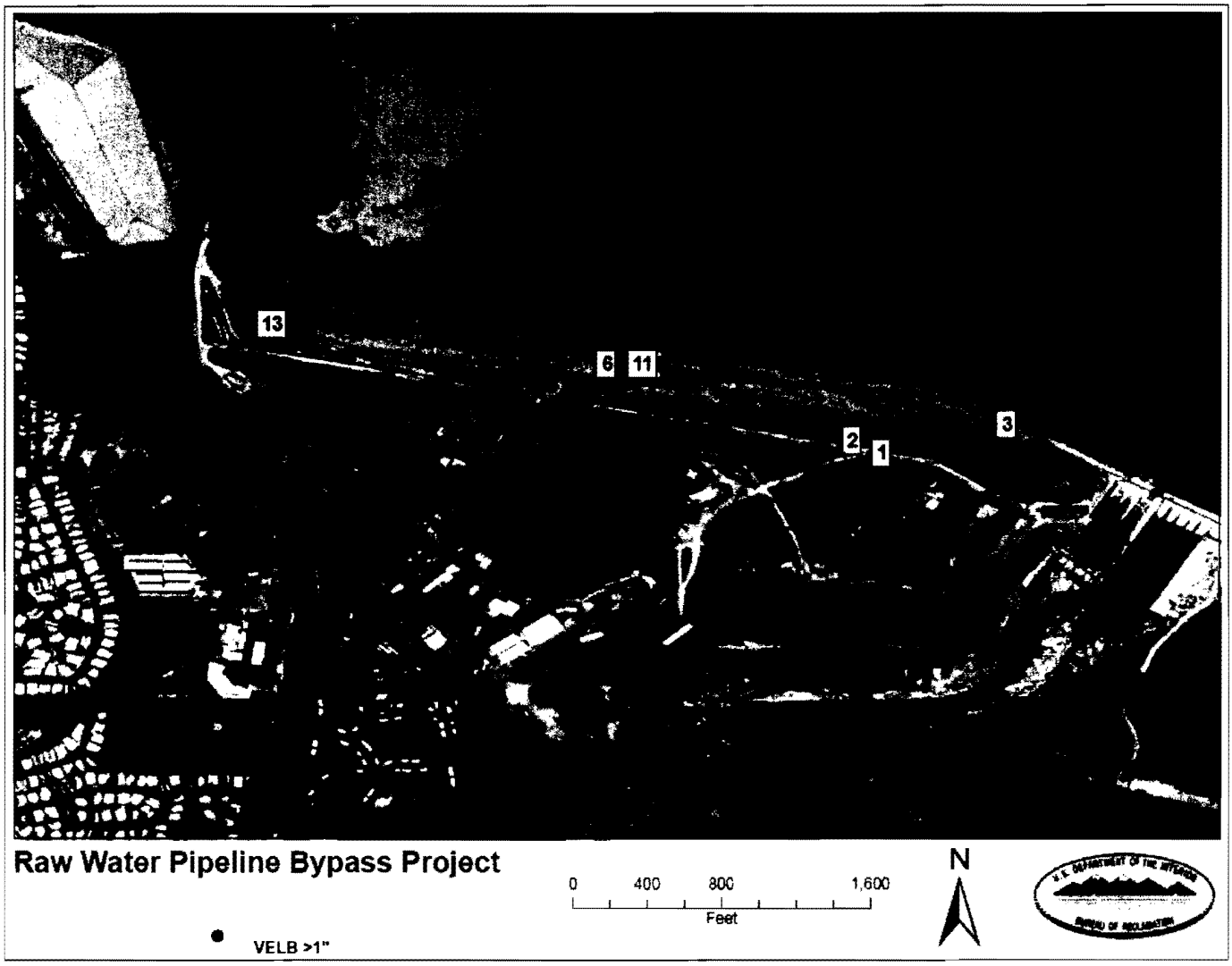


Figure 3. Raw Water Pipeline Bypass Project, Elderberry Shrubs (with a maximum stem diameter of greater than 1 inch at ground level) within 100 feet of Proposed Construction Areas (from SJWD *et al.* 2009).

Table 1. Elderberry Stem Size and Compensation

Shrub ID	Location	Maximum Stem Diameter at Ground Level (in.)	Exit Holes (Yes/No)	Elderberry Seedling Ratio	Associated Native Plant Ratio	Number of Stems Observed	Required Elderberry Plantings	Required Associated Native Plant Plantings
1	Non-riparian	1 – 3 in.	No	1:1	1:1	3	3	3
1	Non-riparian	3 – 5 in.	No	2:1	1:1	1	2	2
2	Non-riparian	1 – 3 in.	No	1:1	1:1	1	1	1
2	Non-riparian	3 – 5 in.	No	2:1	1:1	1	2	2
3	Non-riparian	1 – 3 in.	No	1:1	1:1	3	3	3
6	Non-riparian	1 – 3 in.	No	1:1	1:1	1	1	1
11	Non-riparian	1 – 3 in.	No	1:1	1:1	1	1	1
13	Non-riparian	1 – 3 in.	No	1:1	1:1	2	2	2
Total Replacement Plantings							**15**	**15**
Credit Calculation: (15 + 15)/10 = 3 Credits or 0.124 acre								

Source: The data in the table was provided to Joseph Terry (Senior Biologist, Sacramento Fish and Wildlife Office) via electronic mail from Matthew See (Natural Resources Specialist, U.S. Bureau of Reclamation, Folsom, California) received on April 30, 2009 (See *in lit.* 2009), and replaces the data in Table 3.4-2 of the February 2009 Biological Assessment (SJWD *et al.* 2009) and Table 1 of the April 16, 2009, letter initiating formal consultation for the project.

Effects of the Proposed Action

The exact alignment of the proposed pipeline has yet to be determined. Thus, the project has the potential to directly affect as few as one or as many as six elderberry shrubs (Figure 3 and Table 1 above). At least one elderberry shrub (shrub #13) is within the currently proposed pipeline alignment and would likely have to be transplanted. Up to five additional elderberry shrubs (shrub # 1, 2, 3, 6, and 11) may need to be transplanted depending on the location of the proposed pipeline alignment (See *in lit.* 2009). Since the exact alignment of the proposed pipeline is not yet known, this biological opinion assumes the greatest possible impact of the project with direct effects to all six elderberry shrubs (shrub # 1, 2, 3, 6, 11, and 13) containing a total of 13 stems with a diameter at ground level greater than 1 inch (Table 1). Any of the six elderberry shrubs that are not directly affected by the project would likely be indirectly affected.

Effects to the beetle may occur if elderberry shrubs are disturbed during construction of the proposed pipeline or its maintenance during operation. Direct contact with elderberry shrubs as well as indirect effects from dust created during construction could harm the elderberry shrubs and cause adverse effects to individual beetles, pupae, or larvae as well as loss of habitat. Implementation of dust-control measures (described in the "Conservation Measures" section above) will minimize the indirect effects of construction activities near elderberry shrubs. Construction and staging areas will be revegetated post-construction.

Reclamation will implement other measures proposed in the Guidelines (Service 1999) to avoid and minimize the effects of the project on the beetle. Where possible, the complete avoidance of elderberry shrubs would be enforced. Avoidance measures would include the establishment and maintenance of a 100-foot temporary construction buffer zone surrounding elderberry shrubs containing stems measuring 1.0 inch or greater in diameter at ground level. All elderberry shrubs within 20 feet of project activities will also be flagged or fenced for easy identification. Construction crews will be briefed on the need to avoid elderberry shrubs, and no vehicles will enter within the 20-foot buffer zone.

The proposed staging area and access roads contain as few as one or as many as six elderberry shrubs that would be within 20 feet of project activities and, thus, cannot be avoided. Elderberry shrubs that cannot be avoided would be transplanted if technically feasible. Table 1 above lists the elderberry shrub stem counts and sizes for shrubs that may need to be transplanted. Effects to the beetle may occur with the transplantation of elderberry shrubs. Loss of an elderberry shrub or even a stem can result in direct mortality of beetles or affect beetle breeding and feeding because adult beetles rely solely on elderberry flowers for food and must lay their eggs on elderberry stems to successfully reproduce. This action will adversely affect the valley elderberry longhorn beetle. Any beetle larvae occupying these plants are likely to be killed when the plants are removed.

Proposed avoidance and minimization measures should minimize adverse effects resulting from elderberry stem trimming or elderberry transplantation. All elderberry shrubs containing stems measuring 1.0 inch or greater in diameter at ground level would be transplanted to a Service-

approved conservation area or bank between November 1 and February 15. Each elderberry shrub with stems measuring 1.0 inch or greater in diameter at ground level that is adversely affected will be compensated with elderberry seedlings or cuttings (Table 1) in accordance with the Guidelines (Service 1999).

Cumulative Effects

Continued human population growth in the Central Valley, in general, and the Sacramento area, in particular, is expected to drive further development of agriculture, cities, industry, transportation, and water resources in the foreseeable future. Some of these future activities will not be subject to Federal jurisdiction (and thus are considered to enter into cumulative effects), and are likely to result in loss of riparian and other habitats where elderberry shrubs and the beetle occur.

Many of activities affecting the beetle involve impacts to elderberry shrubs located within riparian ecosystems adjoining or within jurisdictional wetlands. These projects will be evaluated via formal consultation between the Service and the U.S. Army Corps of Engineers via the Federal nexus provided by section 404 of the Clean Water Act.

A number of projects have no need to discharge dredged or fill material into waters of the United States. These projects, for which no section 404 permit is required, may lack a Federal nexus and thus, move forward absent formal consultation. These projects pose a significant threat to the recovery of the beetle, particularly when they result in the removal of elderberry savannah ecosystems. These foothill/upland landscapes often consist of mixed stands of elderberry shrubs and oak (*Quercus* spp.) trees which are interspersed with open grasslands in a savannah-like arrangement. Elderberry shrubs in these savannah systems often achieve great size, due perhaps to the lack of light competition from broadleaf trees and/or entanglement with California grape (*Vitus californica*) and/or Himalayan blackberry (*Rubus discolor*) vines, as often occurs in riparian communities. Elderberry savannah communities are important in that they represent a large portion of the diverse habitat in which elderberry shrubs occur and because urban sprawl threatens a significant acreage of these systems. This loss of habitat negatively affects the environmental baseline and is difficult to quantify.

Conclusion

After reviewing the current status of the beetle, the environmental baseline for the project area, the effects of proposed project, and the cumulative effects, it is the Service's biological opinion that the project, as proposed, is not likely to jeopardize the continued existence of the beetle,

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage

in any such conduct. Harass is defined by the Service as an intentional or negligent act or omission which creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding or sheltering. Harm is defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by impairing behavioral patterns including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking incidental to and not intended as part of the agency project is not considered to be prohibited taking under the Act, provided that such taking is in compliance with this Incidental Take Statement.

The measures described below are nondiscretionary for listed species in this opinion and must be implemented by Reclamation in order for the exemption in section 7(o)(2) to apply. Reclamation has a continuing duty to regulate the activity that is covered by this incidental take statement. If the Federal agency (1) fails to adhere to the terms and conditions of the incidental take statement, and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

Amount or Extent of Take

Upon implementation of the following reasonable and prudent measures the following levels of incidental take of the beetle will be exempted from prohibitions of take under section 9 of the Act.

Valley Elderberry Longhorn Beetle

The Service expects that incidental take of the beetle will be difficult to detect or quantify. The cryptic nature of these species and their relatively small body size make the finding of an injured or dead specimen unlikely. The species occurs in habitats that make them difficult to detect. Due to the difficulty in quantifying the number of beetles that will be taken as a result of the proposed project, the Service is quantifying take incidental to the project as death, injury, harassment, and harm of all beetles inhabiting or otherwise utilizing the 6 elderberry shrubs with stems one inch or greater in diameter at ground level, as described in this biological opinion, the Biological Assessment for the project, and recent communication (See *in lit.* 2009).

Effect of the Take

The Service has determined that this level of anticipated take is not likely to result in jeopardy to the beetle.

Reasonable and Prudent Measures

The following reasonable and prudent measures are necessary and appropriate to minimize the effect of the proposed Raw Water Pipeline Bypass Project, as described, on the beetle:

1. Effects from project construction to individual beetles, and of the loss and degradation of the species' habitat shall be minimized.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, Reclamation must ensure that the proposed project complies with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are nondiscretionary.

1. The following terms and conditions implement reasonable and prudent measure one (1):

   a) Reclamation shall implement the project as proposed in their April 2009 letter and Biological Assessment for the project, and this biological opinion. Reclamation shall minimize the potential for incidental take of the beetle resulting from the project related activities by implementing of the conservation measures as described in the projects' Biological Assessment and the project description of this biological opinion.

   b) Reclamation shall include a copy of this biological opinion within its solicitations for construction of the project, making the prime contractor responsible for implementing all requirements and obligations included in this biological opinion and to educate and inform all other contractors involved in the project as to the requirements of this biological opinion. A copy of the solicitations containing the biological opinion will be provided to Daniel Russell, Division Chief, Endangered Species Program (Central Valley) at the Service's Sacramento Fish and Wildlife Office.

   c) The procedures outlined in the Service's *Conservation Guidelines for the Valley Elderberry Longhorn Beetle* dated July 9, 1999, shall be followed for all actions related to the proposed project unless otherwise stated below.

   d) A biological monitor will be present on site when work will encroach on the 100-foot elderberry buffer. The monitor will immediately notify the appropriate personnel and the contractor will be directed to stop work. The monitor shall contact the Service immediately to determine what corrective measures need to be taken.

   e) Reclamation shall ensure that the elderberry and associated native plant seedlings are established on no less than 0.124 acres and 3.0 credits at a Service-approved conservation bank.

   f) Reclamation shall ensure that elderberry shrub transplantation is completed between November 1, 2009, and February 15, 2010, during the shrubs dormant stage. If shrub transplantation is not completed during the period, Reclamation will re-initiate consultation with the Service.

g) If requested, Reclamation or their representative shall allow access to the project site by the Service to assess the effects of the project on the beetle.

h) Elderberry shrubs remaining in place will be fenced with high visibility fencing prior to construction. In areas where the typical 20-foot buffer from the dripline of the elderberry shrub is encroached on, the fencing will be placed as far from the elderberry shrub's dripline as construction activities will allowed by this opinion.

i) Should the project affect a lesser or a greater amount of stems than discussed in this biological opinion, then Reclamation will reinitiate consultation with the Service.

j) The applicant shall comply with the reporting requirements outlined below.

Reporting Requirements

A post-construction compliance report prepared by the monitoring biologists shall be prepared and forwarded to the Service within 60 calendar days of the completion of construction activity including phased construction activities. This report shall detail (i) dates that construction occurred; (ii) pertinent information concerning the success of the Project in meeting compensation and other conservation measures; (iii) an explanation of failure to meet such measures, if any; (iv) known project effects on federally listed species, if any; (v) occurrences of incidental take of federally listed species, if any; and (vi) other pertinent information.

The Service shall be notified immediately by facsimile or telephone and in writing within one (1) working day of any unanticipated take of any beetle and if the take or suspected take of listed wildlife species not authorized in this opinion. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal, and any other pertinent information. The Service contact persons are the Chief of the Endangered Species Program, at (916) 414-6600 and the Resident Agent-in-Charge of the Service's Law Enforcement Division at (916) 414-6660.

Any dead or injured beetles must be relinquished to the Service. Any killed species that have been taken shall be properly preserved in accordance with the techniques recommended by the Entomology Department of the California Academy of Sciences. Information concerning how the animal was taken, length of the interval between death and preservation, and any other relevant information should be written on 100% rag content paper with permanent ink and included in the container with the specimen. Preserved specimens shall be delivered to the Service's Division of Law Enforcement at 2800 Cottage Way, Room W-2928, Sacramento, California 95825-1846, phone (916) 414-6660.
Proof of environmental training and fulfillment of compensation requirements shall be delivered to Daniel Russell, Division Chief, Endangered Species Program, Sacramento Fish and Wildlife Office, 2800 Cottage Way, Room W-2605, Sacramento, California 95825-1846, phone (916) 414-6600.

Reporting requirements for the beetle are found in the "Monitoring" section of the Guidelines for this species. The reports shall be combined, where applicable, with the reporting requirements for other species and the experimental conservation measures, where appropriate.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities that can be implemented to further the purposes of the Act, such as preservation of endangered species habitat, implementation of recovery actions, or development of information and databases.

1. Reclamation should work with the Service to address significant, unavoidable environmental impacts to federally-listed species approved by local agencies.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

REINITIATION NOTICE

This concludes formal consultation on the proposed Raw Water Pipeline Bypass Project. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals that the agency action may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

If you have any questions regarding this biological opinion please contact Joseph Terry at (916) 414-6600 or Jana Milliken, Sacramento Valley Branch Chief, at (916) 414-6645.

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State Historical Preservation Office Concurrence

STATE OF CALIFORNIA – THE RESOURCES AGENCY
ARNOLD SCHWARZENEGGER, *Governor*

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
P.O. BOX 942896
SACRAMENTO, CA 94296-0001
(916) 653-6624 Fax: (916) 653-9824
calshpo@ohp.parks.ca.gov
www.ohp.parks.ca.gov

March 5, 2009

In Reply Refer To: BUR090224L

Michael A. Chotkowski
Acting Regional Environmental Officer
United States Department of the Interior
Bureau of Reclamation
Mid-Pacific Regional Office
2800 Cottage Way
Sacramento, CA 95825-1898

Re: San Juan Water District Raw Water Pipeline Bypass Project, Folsom Dam, Sacramento County, California (Project No. 09-CCAO-043)

Dear Mr. Chotkowski:

Thank you for seeking my consultation regarding the proposed San Juan Water District (SJWD) Raw Water Pipeline Bypass Project at Folsom Dam in Sacramento County. Pursuant to 36 CFR Part 800 (as amended 8-05-04) regulations implementing Section 106 of the National Historic Preservation Act (NHPA), the Bureau of Reclamation (BUR) is the lead federal agency for this project and is seeking my comments regarding the effects that the subject project will have on historic properties. The project is the proposed installation of a new 84-inch diameter pipeline that will connect to the existing SJWS pipeline that comes out of Folsom Dam. The existing pipeline will be excavated at the location of the proposed connection, a new butterfly valve will be installed, and a new above-ground pipeline approximately 0.65 miles in length will be installed from the new connection along the base of the right wing dam to the pipeline terminus at Auburn-Folsom Road. The pipeline will be supported by five-foot wide by 10-foot tall concrete piers placed at approximate intervals of 50-feet.

The BUR has determined that the Area of Potential Effects (APE) for this undertaking consists of an area approximately 10 meters in width along the entire 0.65-mile length of the new pipeline route. Project staging will be at the Western Area Power Administration (WAPA) switchyard in an existing staging and lay-down location. In addition to your letter of February 19, 2009 and attachments, you have submitted the following document in support of this undertaking:

- *Archaeological Study for the San Juan Water District 84-inch Raw Water Pipeline, Alternatives 1 and 2, Folsom, Sacramento County, California* (Kari Jones, Pacific Legacy, Inc.: Undated [survey completed on October 9, 2008]).

The BUR has concluded that while no archaeological historic properties were identified within the APE, the project is within the viewshed of Folsom Dam, which has been determined to be eligible for the National Register of Historic Places (NRHP) under criterion A. The BUR has determined that the minor visual effect of this project will not alter the characteristics of Folsom Dam that qualified it for eligibility for the NRHP, and has concluded that a finding of No Adverse Effect is appropriate pursuant to 36 CFR Part 800.5(b).

After reviewing your letter and supporting documentation, I have no objection to your finding of No Adverse Effect. Be advised that under certain circumstances, such as unanticipated discovery or a change in project description, the BUR may have additional future responsibilities for this undertaking under 36 CFR Part 800. Thank you for seeking my comments and for considering historic properties in planning your project. If you require further information, please contact William Soule, Associate State Archeologist, at phone 916-654-4614 or email wsoule@parks.ca.gov.

Sincerely,

Susan K Stratton for

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

Indian Trust Assets Concurrence

From: Patricia Rivera
To: See, Matthew
Date: 4/15/2009 9:43:22 AM
Subject: Re: ITA Concurrence: CCAO Raw Water Bypass Pipeline - CCAO-FONSI-09-4

Matt,

I reviewed the proposed action approve the San Juan Water District in partnership with the City of Roseville's proposal to construct a permanent 72-inch diameter raw water bypass pipeline (Bypass Pipeline) to ensure delivery of CVP water from Folsom Reservoir during planned and unplanned outages of Reclamation's existing 84-inch diameter pipeline. The Bypass Pipeline will be constructed parallel to the existing 84-inch pipeline that follows along the toe of Right Wing Dam from the Pumping Plant to the Hinkle Wye. A 60-inch pipeline will then be constructed from the Hinkle Wye to Folsom-Auburn Road and will connect to an existing pipeline. The Bypass Pipeline will be approximately 3400-feet in length.

The proposed action does not affect Indian Trust Assets. The nearest ITA is Auburn Rancheria, which is approximately 12 miles NW of the project location.

Patricia

>>> Matthew See 4/15/2009 8:59 AM >>>
Patricia,
Please see attached maps and EA for your review and concurrence on the Raw Water Bypass Pipeline Project.

Thanks, Matt

Matthew See
Natural Resource Specialist
Bureau of Reclamation
Central California Area Office
7794 Folsom Dam Road
Folsom, CA 95630
PHONE (916) 989-7198
FAX 916-989-7208

Chapter 6
List of Preparers

Table 6-1. List of Preparers

Keith Durkin San Juan Water District Assistant General Manager 28 years of experience in planning, design, and construction management	**Ed Kriz** City of Roseville 14 years of experience with the City of Roseville water system design, operation, and management
Elizabeth Vasquez Bureau of Reclamation Natural Resource Specialist 8 years of natural resources experience	**Matthew See** Bureau of Reclamation 3 years of natural resources experience
Patricia Reed CDM Environmental Scientist 8 years of experience in environmental planning and biological sciences	**Henry Boucher** CDM Associate 30 years of experience as environmental engineer and planner with expertise in, impact assessment, planning, transportation, land use development
Jennifer Jones CDM Environmental Scientist 15 years of experience in environmental planning and biological sciences	**Gwen Pelletier** CDM Environmental Scientist 8 years of experience working on air quality projects
Alexandra Kleyman CDM Environmental Planner 2 years experience in environmental planning and biological sciences	**Stacy Porter** CDM Environmental Planner 4 years of experience in environmental planning and water resources projects
Chris Park CDM Environmental Scientist 3 years of experience in environmental planning and water resources projects	**Kari Jones** Pacific Legacy Archaeologist 10 years of experience in cultural resources
John Holson Pacific Legacy Senior Archaeologist 30 years of experience in cultural resources management	

Table 6-2. List of Contributors

Araceli Czarez Kennedy/Jenks Consultants	**Fred Neil** Kennedy/Jenks Consultants
Stephanie Rickabaugh U.S. Fish and Wildlife Service	**James Bowland** Kennedy/Jenks Consultants

Chapter 7
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