RECLAMATION

Managing Water in the West

Supplemental Environmental Assessment/Initial Study to the Folsom Dam Safety and Flood Damage Reduction Final Environmental Impact Statement/Environmental Impact Report

Folsom, California
Mid-Pacific Region

US Army Corps of Engineers®

Bureau of Reclamation, Mid-Pacific Region
U.S. Army Corps of Engineers, Sacramento District
Central Valley Flood Protection Board
Sacramento Area Flood Control Agency

February 2008

Mission Statements

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitment to island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

Supplemental Environmental Assessment/Initial Study to the Folsom Dam Safety and Flood Damage Reduction Final Environmental Impact Statement/Environmental Impact Report

Folsom, California
Mid-Pacific Region

Prepared by:

CDM

Pacific Legacy

US Army Corps of Engineers

SAFCA

Bureau of Reclamation, Mid-Pacific Region
U.S. Army Corps of Engineers, Sacramento District
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Sacramento Area Flood Control Agency

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Acronyms and Abbreviations

ADT	average daily trips
APE	Area of Potential Effects
BMP	Best Management Practice
Bridge EIS/EIR	Folsom Bridge Draft Supplemental EIS/EIR
CARB	California Air Resources Board
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
cfs	cubic feet per second
CO	carbon dioxide
Cofferdam	JFP Auxiliary Spillway Stilling Basin Cofferdam
Corps	U.S. Army Corps of Engineers
CRHR	California Record of Historical Resources
CVFPB	Central Valley Flood Protection Board
CVP	Central Valley Project
CVRWQCB	Central Valley Regional Water Quality Control Board
CWA	Clean Water Act
cy	cubic yards
dB	decibel
dBA	A-weighted decibel scale
DPR	California Department of Parks and Recreation
DS/FDR	Dam Safety and Flood Damage Reduction
EA/IS	Environmental Assessment/Initial Study
EIS/EIR	Environmental Impact Statement/Environmental Impact Report
FLSRA	Folsom Lake State Recreation Area
Folsom Facility	Folsom Dam and Appurtenant Facilities
FONSI	Finding of No Significant Impact
ft	foot/feet
FWCAR	Fish and Wildlife Coordination Act Report
GIS	Geographic Information System
GPS	Global Positioning System
g/VMT	gallons per vehicle miles traveled
HCP	Habitat Conservation Plan
ITA	Indian Trust Asset
JFP	Joint Federal Project
kV	kilo volt
lbs	pounds
lbs/day	pounds per day
LOS	level of service
LWD	Left Wing Dam
M&I	Municipal and Industrial

MIAD	Mormon Island Auxiliary Dam
mph	miles per hour
NCCP	Natural Community Conservation Plan
ND	Negative Declaration
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NPDES	National Pollutant Discharge Elimination System
NOD	Notice of Determination
NOx	nitrogen oxides
NRHP	National Record of Historic Places
O_3	ozone
PCAPCD	Placer County Air Pollution Control District
$PM_{2.5}$	particles less than 2.5 micrometers
PM_{10}	particles of 10 micrometers or less
Reclamation	United States Department of the Interior, Bureau of Reclamation
ROD	Record of Decision
ROG	Reactive organic gases
RWD	Right Wing Dam
SAFCA	Sacramento Area Flood Control Agency
SHPO	State Historic Preservation Officer
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMUD	Sacramento Municipal Utility District
SO_2	sulfur dioxide
SOD	Safety of Dams
SSLE	Safety, Security, and Law Enforcement Program
SWPPP	Storm Water Pollution Prevention Plan
tpy	tons per year
USGS	United States Geological Survey
USFWS	United States Fish and Wildlife Service
V/C	volume to capacity
VOC	volatile organic carbon

Chapter 1
Introduction

This document is a joint Supplemental Environmental Assessment/Initial Study (EA/IS) to the Folsom Dam Safety and Flood Damage Reduction (DS/FDR) Final Environmental Impact Statement/Environmental Impact Report (EIS/EIR) (March 2007), and satisfies the requirements of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). This Supplemental EA/IS has been prepared by the U.S. Department of the Interior, Bureau of Reclamation (Reclamation), the U.S. Army Corps of Engineers (Corps), and the Corps non-Federal sponsors, the Central Valley Flood Protection Board (CVFPB)[1] and the Sacramento Area Flood Control Agency (SAFCA). Reclamation is the NEPA lead agency for this document; CVFPB is the CEQA lead agency.

Agency	***NEPA/CEQA Role***
Bureau of Reclamation	NEPA Lead Agency
U.S. Army Corps of Engineers	Cooperating Agency under NEPA
Central Valley Flood Protection Board	CEQA Lead Agency
Sacramento Area Flood Control Agency	Responsible Agency under CEQA

The purpose of this Supplemental EA/IS is to describe and analyze the effects of construction actions and refinements to the project since the completion of the Folsom DS/FDR Final EIS/EIR. The Folsom DS/FDR Project, as approved and authorized, is currently under construction. The actions proposed in this EA/IS are existing components of the authorized project currently underway and have been defined to a greater level of detail than was available at the time of the Folsom DS/FDR EIS/EIR. This document does not change the project originally described in the Joint Federal Project (JFP) Record of Decision (ROD) and Safety of Dams (SOD) ROD, but proposes refinements and clarifications to certain project actions that require further environmental analysis. The Supplemental EA/IS identifies and evaluates certain site specific actions. The results of this Supplemental EA/IS will provide the basis for determining whether a Finding of No Significant Impact (FONSI)/Negative Declaration (ND) can be issued or if additional environmental review such as an EIS/EIR is required.

The document describes the affected environment and the potential direct, indirect, and cumulative effects related to construction of refined components of the Folsom DS/FDR Project. This document also identifies measures that have been incorporated into the design of the project to minimize or avoid project-related impacts.

[1] Formerly known as the Reclamation Board of the State of California.

1.1 Purpose and Need for the Folsom DS/FDR Project

1.1.1 Project Background

The Folsom Dam and Appurtenant Facilities (Folsom Facility) consists of 4 dams (Main Concrete Dam, Mormon Island Auxiliary Dam [MIAD], Right Wing Dam [RWD], Left Wing Dam [LWD]) and 8 dikes (Dikes 1 to 8), which impound flows on the American River forming Folsom Reservoir (See Figure 1-1). The Folsom Facility was constructed between 1948 and 1956 by the Corps as a multi-purpose facility. Upon completion of dam and dike construction, ownership of the Folsom Facility was transferred to Reclamation for operation and maintenance as an integrated feature of the Central Valley Project (CVP). In addition to CVP water supply, the Folsom Facility is operated for flood control, municipal and industrial (M&I) water supply, power, fish and wildlife, recreation, and water quality benefits. The Folsom Powerplant construction, begun in 1952 and completed in 1956, was supervised by Reclamation.

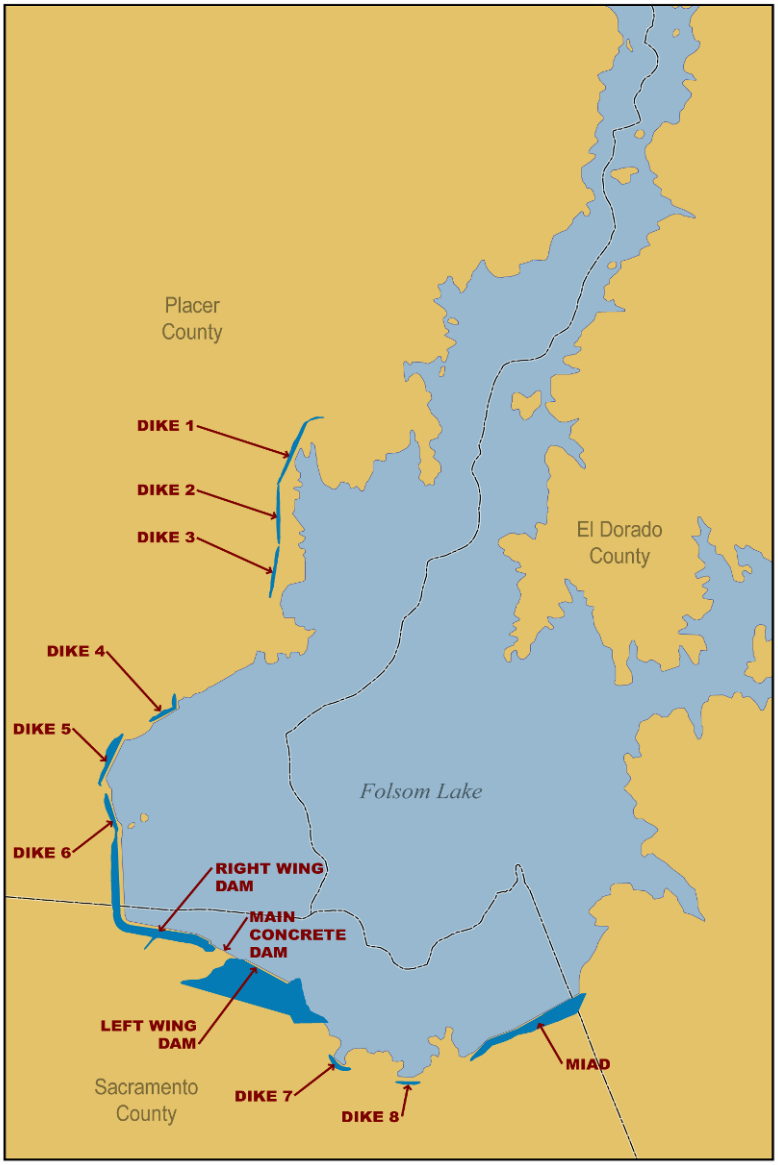

Figure 1-1
The Folsom Facility

Both Reclamation and the Corps share in the responsibility of maintaining and operating the Folsom Facility under each agency's respective dam safety regulations and guidelines, as defined by Congress. Reclamation is responsible for dam safety, operations, and maintenance at Folsom Dam. The Corps is responsible for flood damage reduction capital improvements and establishing

flood operation requirements at Folsom Reservoir, including regulations governing flood management by setting flood storage and release criteria during specified annual seasons.

As a part of their responsibilities, Reclamation and the Corps have determined that the Folsom Facility requires structural improvements to increase overall public safety above existing conditions including addressing dam safety and security issues. The improvements will enhance the facility's ability to reduce flood damages posed by hydrologic (flood), seismic (earthquake), and static (seepage) events. These events have a low probability of occurrence in a given year; however, due to the large population downstream of Folsom Dam, modifying the facilities is prudent and necessary to improve public safety above current baseline conditions.

Reclamation has identified the need for expedited action to reduce hydrologic, static, and seismic risks under its SOD Program and security issues under its Security Program. These identified risks are among the highest risks for all dams in Reclamation's inventory and the Folsom Facility is among Reclamation's highest priorities within its SOD Program. Additionally, there is a need to upgrade security infrastructure at the Folsom Facility under Reclamation's Safety, Security and Law Enforcement (SSLE) Program. Reclamation's primary interest for participating in the Folsom DS/FDR is to achieve an expedited improvement in overall public protection and the cost sharing benefits of a combined project.

The Corps, in partnership with the non-Federal sponsors, has determined that Folsom Reservoir does not have sufficient release capacity to adequately manage severe flood flows, nor do the downstream levees have sustained capacity to exceed base flood event flows of 145,000 cubic feet (ft) per second (cfs). The Corps' non-Federal sponsors have identified the need to reduce the risk of flooding in the Sacramento area. Due to the number and value of the exposed structures and the size of the potentially affected population, Sacramento has been identified as one of the most at risk communities in the nation. Consequently, there is a need to expeditiously reduce this risk through interim and permanent flood damage reduction measures. The goal of the non-Federal sponsors is to safely pass the 200-year computed design flood event, as a minimum objective for Folsom Dam Modifications and Folsom Dam Raise projects. Pursuit of this goal constitutes the non-Federal sponsors' primary interest for participating in the Folsom DS/FDR actions.

Both Reclamation and the Corps have conducted engineering studies to identify potential corrective measures for the Folsom Facility to alleviate seismic, static, and hydrologic dam safety issues, and flood management concerns. These two Federal Agencies have combined their efforts resulting in (1) a JFP for addressing Reclamation's dam safety hydrologic risk and the Corps' flood damage reduction objectives and (2) other stand-alone flood damage reduction and dam safety actions to be completed by the respective agencies in a coordinated manner. Among the

latter are separate, but related, downstream levee projects that are underway to increase flood damage reduction along the lower American River.

1.1.2 Statement of Purpose and Need for the Folsom DS/FDR Project

There is a need to expeditiously implement engineering measures for the Folsom Facility in order to reduce potential failure due to seismic, static, and hydrologic conditions. There is also a need to incrementally increase minimum flood damage reduction via flood storage capacity and/or reservoir pool release mechanisms. Furthermore, there is a need to implement security improvements at the Folsom Facility consistent with its designation as a National Critical Infrastructure Facility. The purpose of the Folsom DS/FDR is to increase overall public safety, ensure the reliability of local power and water supply, and maintain an important recreational resource by: (1) expediting corrective action to address risks identified with the structural integrity of Folsom Dam and appurtenant structures in accordance with Reclamation's Public Protection Guidelines; (2) incrementally improving the flood management capacity of the Folsom Facility to meet or exceed the 200-year recurrence level; and (3) upgrading security infrastructure at the Folsom Facility.

1.2 Purpose and Need for this Supplemental EA/IS

1.2.1 Project Background

On December 1, 2006, Reclamation, the Corps, CVFPB, and SAFCA released the Folsom DS/FDR Draft EIS/EIR for public review and comment. The Draft EIS/EIR (State Clearinghouse # 2006022091) identified five alternatives to address dam safety, security, and flood damage reduction objectives for the Folsom Facility.

The Final EIS/EIR was released to the public in March 2007 and identified Alternative 3 as the preferred alternative/proposed action. Alternative 3 includes the JFP Auxiliary Spillway, seismic improvements to the Main Concrete Dam and MIAD, static improvements to specific earthen structures (RWD, LWD, Dikes 4, 5, and 6), security upgrades, reinforcement of the five Main Concrete Dam spillway gates and replacement of the three emergency spillway gates, and a 3.5 -ft raise to all Folsom Facility structures. Section 2.2 of the Draft EIS/EIR discusses concerns regarding the Folsom Facility and measures considered to address those concerns. Table 1-1 in the Final EIS/EIR lists the components of Alternative 3, the agency responsible for each component, and the issue that each component addresses.

A ROD addressing Reclamation's Dam Safety and Security actions was signed in May 2007 by Reclamation. A joint ROD addressing the JFP Auxiliary Spillway was signed in May 2007 by Reclamation and the Corps. A Notice of Determination (NOD) and Statement of Findings were issued by the CVFPB on July 20, 2007 for the JFP Auxiliary Spillway. Table 1-1 provides a list of all project-related documents, the agencies associated with them, and the date of their release.

Table 1-1 ***Related Documents***		
Document Title	***Agency***	***Date***
Folsom DS/FDR Draft EIS/EIR (Vol. I)	Reclamation, Corps, SAFCA, CVFPB	December 2006
Folsom DS/FDR Draft EIS/EIR (Vol. II Appendices)		
Folsom DS/FDR Final EIS/EIR (Vol. III)	Reclamation, Corps, SAFCA, CVFPB	March 2007
Folsom Dam SOD and Security Upgrades Projects ROD	Reclamation	May 2007
Folsom DS/FDR JFP ROD	Reclamation & Corps	May 2007
Folsom DS/FDR JFP NOD, Statement of Findings, and Findings of Overriding Consideration	CVFPB	July 2007

Construction of the Folsom DS/FDR Project was initiated in December 2007 and the overall project is expected to be completed in phases by 2020. The actions described in this Supplemental EA/IS are part of the overall authorized projects being implemented jointly by Reclamation and the Corps and individually by Reclamation.

1.2.2 Statement of Purpose and Need for this Supplemental EA/IS

The following activities are addressed in this Supplemental EA/IS:

- Dike 5 Construction Site Access and Trail Detour; and
- JFP Auxiliary Spillway Stilling Basin Cofferdam.

The purpose and need for the Dike 5 Construction Site Access is to provide a more direct route to the Dike 4, 5, and 6 reconstruction zones to reduce conflicts with recreation traffic at Beal's Point. The purpose and need for the Trail Detour is to maintain trail connectivity between Beal's Point and Mooney Ridge during dike construction.

The purpose and need for the Cofferdam is to provide safety for construction workers during construction of the JFP Auxiliary Spillway and to allow Stilling Basin construction during water releases from Folsom Dam that would increase flows in the American River channel. Large releases from Folsom Dam may occur as part of normal operations.

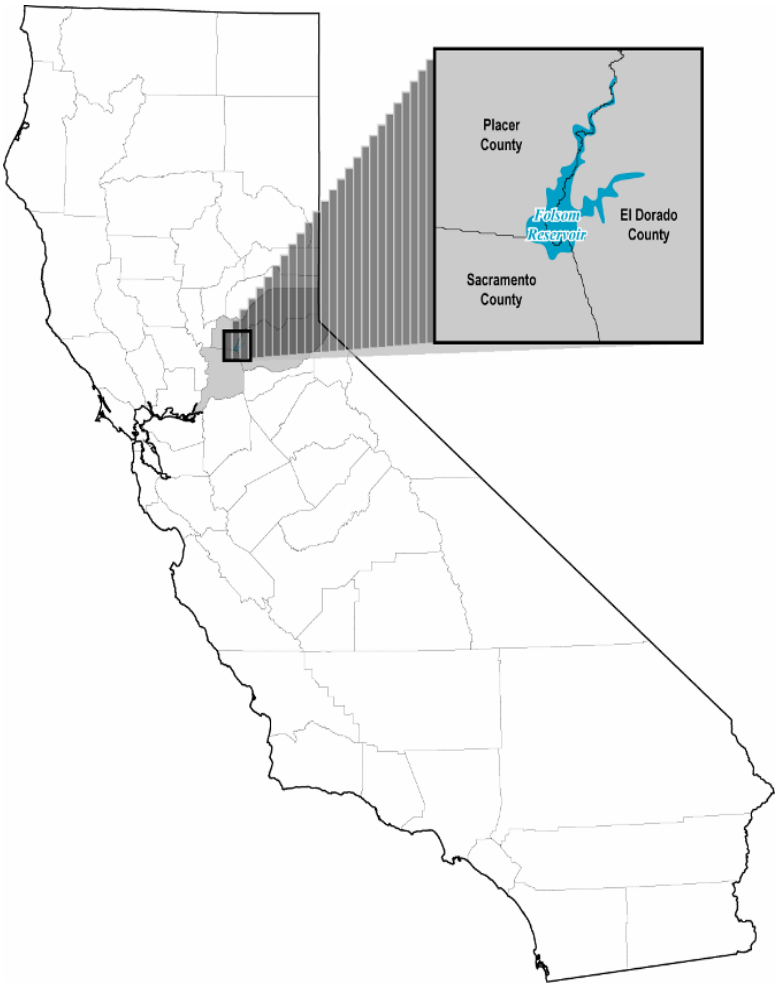

Figure 1-2
Folsom Reservoir

1.3 Location and Site Description

The location for this Supplemental EA/IS includes the area surrounding Folsom Reservoir that falls within Placer and Sacramento Counties. No actions addressed in this Supplemental EA/IS would occur in El Dorado County. The study area mainly consists of Federally-owned lands that are currently leased to and managed by the California Department of Parks and Recreation (DPR). Figure 1-2 shows the location of the Folsom Reservoir in central California.

1.4 Decisions to be Made

The results of this Supplemental EA/IS will determine whether an EIS/EIR is required or a FONSI/ND will be issued for the actions addressed.

1.5 Document Organization

The remainder of this document is organized as follows:

- **Chapter 2** – presents the Proposed Action analyzed in this Supplemental EA/IS;
- **Chapter 3** – describes changes to the project and affected environment, and analyses the effects of the Proposed Action 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
- **Appendix A –** contains the Traffic analysis.

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Chapter 2
Proposed Action

This chapter describes the No Action Alternative and the Proposed Action for this Supplemental EA/IS.

2.1 No Action Alternative

For the purposes of impact analyses, environmental documents typically compare a No Action Alternative with that of the Proposed Action. The No Action Alternative examines the future without project conditions, that is, the future if the Proposed Action is not implemented or constructed.

The RODs for the Folsom DS/FDR Project were signed in May 2007 and several of the actions defined in the RODs are well underway. Therefore, the affected environment and No Action Alternative in this EA/IS incorporate the Folsom DS/FDR Project actions described in the RODs.

2.1.1 Dike 5 Construction Site Access and Trail Detour

Under the No Action Alternative, the access to the Dike 5 construction site directly from Auburn-Folsom Road would not be constructed. Access to the dike work zones would occur from Beal's Point as described in the EIS/EIR. This would increase the interference between recreation traffic and construction traffic. Under the No Action Alternative, the trail across the top of Dikes 4, 5, and 6 would be closed for construction safety purposes. Pedestrians, equestrians, and bikers would have difficulty moving between Beal's Point and Mooney Ridge because of trail closures in the dike construction zones.

2.1.2 Cofferdam

Under the No Action Alternative, a cofferdam would not be built. Excavation of the Stilling Basin would be severely hampered by releases from Folsom Dam and significant pumping and water management would be necessary to complete the work. For safety reasons, construction workers may be unable to work on the Stilling Basin during periods of high releases and this would affect the construction schedule.

Chapter 3 provides additional discussion on the No Action Alternative relative to specific resource areas.

2.2 Proposed Action

There is only one Proposed Action Alternative, which consists of two components:

- Dike 5 Construction Site Access and Trail Detour; and
- JFP Auxiliary Spillway Stilling Basin Cofferdam.

2.2.1 Dike 5 Construction Site Access and Trail Detour

The Dike 5 Construction Site Access and Trail Detour are associated with SOD work and will be completed by Reclamation.

2.2.1.1 Dike 5 Construction Site Access

In the Folsom DS/FDR Final EIS/EIR, work at Dike 5 was scheduled to start in September 2009. Due to SOD schedule priorities, Reclamation has elected to initiate the Dike 5 work by spring 2008. The proposed schedule is to complete the Dike 5 work by March 2009. In addition, the Folsom DS/FDR Final EIS/EIR (see Section 2.4.5 on page 2-26 of the Final EIS/EIR) stated that primary access to Dike 5 would be via the Beal's Point access road. Access to Dike 5 for staging and reconstruction of the Dike 5 filters is now proposed to occur from Auburn-Folsom Road immediately west of Dike 5, thereby reducing conflicts with recreational traffic at Beal's Point.

Reclamation proposes to construct a new access road to accommodate construction equipment and trucks transporting materials to the Dike 5 work site. This would require trucks to turn into the Dike 5 construction staging area from Auburn-Folsom Road and would introduce trucks merging into traffic on the roadway. Figure 2-1 shows the Dike 5 Construction Site Access location. For the duration of the Dike 5 construction there would be approximately 27 daily morning and early afternoon construction worker trips from northbound and southbound on Auburn-Folsom Road to Beal's Point, and 27 afternoon and nighttime trips out of Beal's Point (assuming two work shifts). During peak construction activities, a period of no more than 30 days, 40 haul trucks would enter and exit Beal's Point throughout the day between 7 am and 3 pm to deliver materials. To accommodate construction traffic with local traffic, Reclamation proposes to control traffic flow using either flagmen or installation of a temporary intersection with a traffic light. Trucks entering the staging area would only approach from the south (northbound on Auburn-Folsom Road) and would turn right into the staging area. Traffic leaving the site would be controlled by a temporary traffic light or flagmen, to allow trucks to safely turn right or left onto Auburn-Folsom Road. Turn outs and merge lanes along the shoulders and median of Auburn-Folsom Road could be included in the installation to further minimize traffic congestion. Use of Auburn-Folsom Road and construction of turn outs and merge lanes would be coordinated with Placer County and would require Placer County approval.

During the time that Reclamation proposes to construct and use the Dike 5 Construction Site Access, Placer County is proposing to initiate construction of the Auburn-Folsom Road Widening Project from County Line to Woodchase Drive, approximately 0.7 miles south of the Dike 5 area. Reclamation would coordinate closely with County traffic engineers in implementing the Dike 5 traffic control measures.

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NORTH

NO SCALE

Figure 2-1
Dike 5 Construction Site Access

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Temporary Traffic Light (Signal)
Installation of the temporary intersection with traffic control lights (signals) is scheduled to occur during the spring or summer of 2008 prior to the construction on Dike 5. The proposed traffic light would be programmed to operate only when trucks and other construction vehicles need to cross oncoming traffic. The traffic light would only be in use during construction periods and would be taken out of service between work on Dike 5 and work on Dikes 4 and 6. Oncoming traffic would be alerted to the temporary signal by signs or warning lights as required by Placer County. The County may require the temporary signal to be synchronized with adjacent signals to minimize impacts to existing traffic flow.

The Dike 5 staging area would also be used for work at Dikes 4 and 6 (currently scheduled for 2013 to 2014). However, depending on Reclamation Dam Safety priorities and funding, work on these dikes may occur earlier. The traffic control light would be placed in an inactive (or stand- by) mode or removed after completion of the work on Dike 5, and would be reactivated or reinstalled for the Dike 4 and 6 work. The traffic control light would be permanently removed after work is completed on Dikes 4 and 6.

Flagmen
An alternative to the installation of the traffic control light would be the use of flagmen to control traffic. Construction signs and warning lights would be posted along Auburn-Folsom Road warning of trucks turning onto the highway. Construction and local traffic would be required to follow the instructions of the flagmen to allow safe movement of the construction traffic.

2.2.1.2 Trail Detour
Although the Folsom JFP and SOD RODs provided commitments for installation of trail detours where possible to minimize recreation impacts, details for required detours were not available at the time the RODs were signed. Currently, recreational trails traverse the tops of Dikes 4, 5, and 6. The crests of the dikes would need to be closed during dike reconstruction with trail detours routed along the downstream side of the dikes. Placement of trails on the reservoir (water) side was eliminated as an alternative because the trails would become flooded as the reservoir fills, leaving the trails inaccessible during part of the year.

To address ROD commitments, a trail detour would need to be established around the staging areas and dike construction zones to allow for continual public use of the trails during construction. Placement of the trail around the Dike 5 staging area could route the recreation trail through wetlands and oak woodland. Efforts will be made to avoid impacts to wetlands and oak trees.

To provide a trail detour in response to the aforementioned ROD commitment, Reclamation proposes to construct a single trail to accommodate pedestrian, bicycle,

and equestrian use. The trail would be approximately 5 to 6 ft wide with a maximum grade of 8 percent, and constructed of native earth material. Figure 2-2 presents the proposed Trail Detour location[1]. Because it is temporarily replacing an existing trail along the tops of the dikes, the Trail Detour would be managed by Reclamation's Recreation Management Partner until the close of construction. Only the portion of the detour that crosses through the Dike 5 area would be the responsibility of Reclamation and the Construction Contractor. This portion of the trail would intersect truck traffic entering the staging area at Dike 5. Appropriate signs and flagmen would be established where the Trail Detour crosses construction traffic to ensure public safety. After construction is complete, Reclamation would either remove the Trail Detour and re-establish the original trail or turn it over to its Recreation Management Partner for management and use.

2.2.2 JFP Auxiliary Spillway Stilling Basin Cofferdam (Cofferdam)

Although the construction of a new Stilling Basin at the toe of the JFP Auxiliary Spillway was disclosed in the Folsom DS/FDR Final EIS/EIR, the construction details of the facility were not fully known at that time. One of the required details for the Stilling Basin excavation would be a cofferdam that would allow construction of the Stilling Basin to occur "in the dry" during times when releases are being made from Folsom Dam. The construction and use of a cofferdam were not addressed in the previous EIS/EIR and therefore will be addressed in this EA/IS. The Stilling Basin and Cofferdam are part of the JFP and would be completed by Reclamation.

A cofferdam is a temporary dam or barrier used to divert water flow or to enclose an area during construction. The Cofferdam would be constructed during excavation work on the Stilling Basin. The Cofferdam would ensure that construction of the Stilling Basin could be completed in the dry and would also prevent water quality impacts from construction to the American River downstream of the Auxiliary Spillway. The Cofferdam would consist of either a wall made of reinforced concrete or a combination of a cellular Cofferdam and concrete wall. The maximum height of the Cofferdam would be approximately 55 ft. Approximately 6,700 cubic yards (cy) to 8,500 cy of concrete and 1,350,000 pounds (lbs) to 1,700,000 lbs of reinforcing bars would be required. The reinforced concrete wall would extend across the Stilling Basin excavation to high ground on each side. The wall would be designed to protect the Stilling Basin area from releases of up to 115,000 cfs from Folsom Dam. The Cofferdam would be fully or partially removed (leaving portions above and below the Stilling Basin channel) after construction of the Stilling Basin using standard demolition techniques. Measures would be implemented to prevent concrete material from entering the Stilling Basin or the river during removal of the wall. Figure 2-3 shows the proposed location of the Cofferdam for the Stilling Basin.

[1] Figure 2-2 shows the approximately location for the Trail Detour; the actual location may change in order to reduce/avoid environmental impacts.

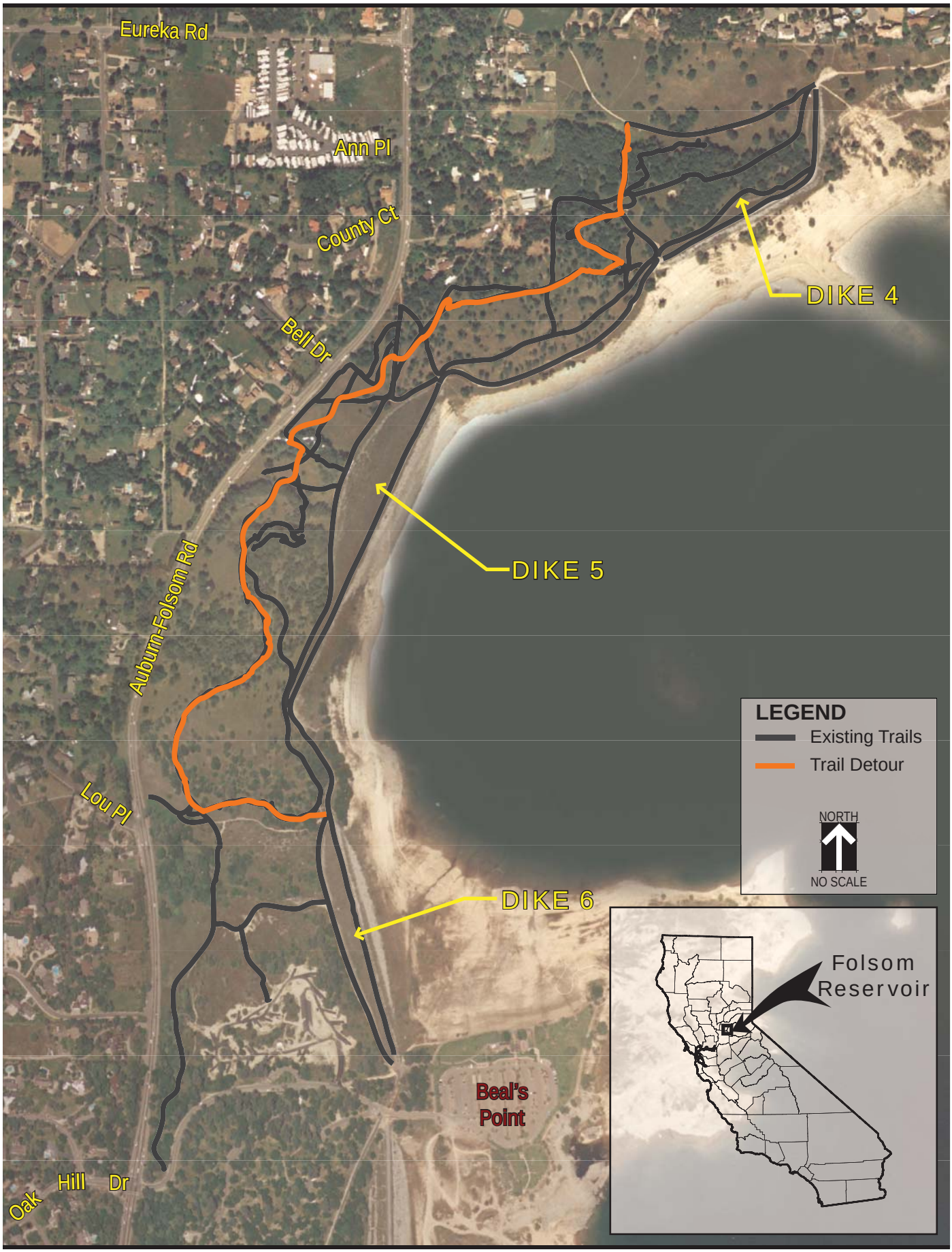

Figure 2-2
Proposed Location of Trail Detour

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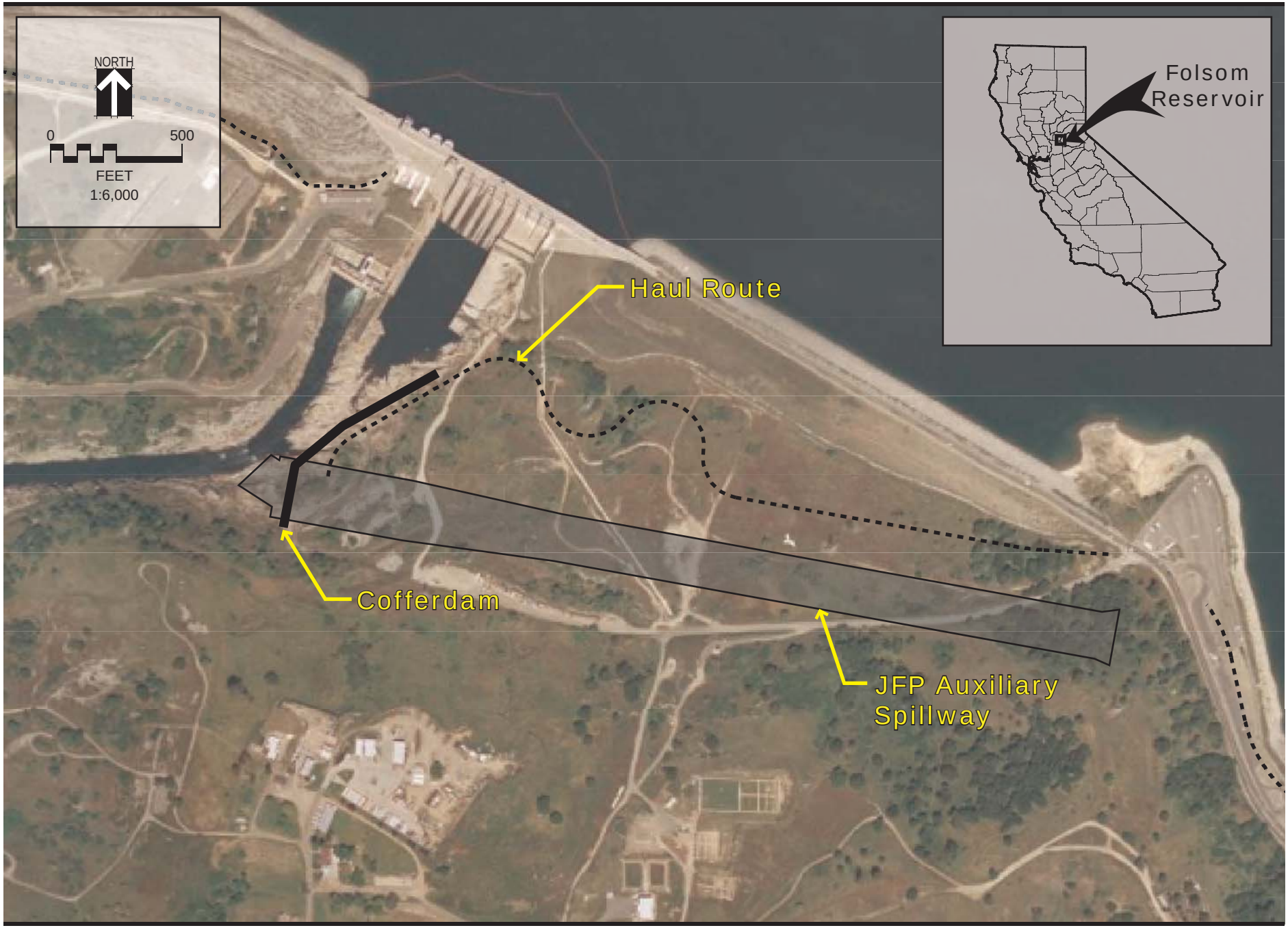

Figure 2-3
Cofferdam for Stilling Basin

CDM

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Increased discharges for any reason from the existing dam's outlet works or spillway could flood the construction site. Releases from the dam can occur during any time of the year to address flood control, water supply, and lower American River temperature requirements. Therefore, protection of site workers and equipment by the Cofferdam would be necessary until completion of the new Stilling Basin and Auxiliary Spillway.

As indicated above, the purpose of the Cofferdam would be to prevent flooding of the haul road and excavation area during release events requiring discharge from the existing dam outlet works or existing spillway. The invert of the JFP Stilling Basin excavation would be about elevation 113 to 116 ft. The lowest elevation of the haul road would be about elevation 123 ft. The normal water surface elevation in the main river channel downstream of the existing dam outlet works and spillway during releases is about 131 ft in the vicinity of the proposed Stilling Basin. Thus, releases would put the haul road and Stilling Basin work site under water. The Cofferdam would be constructed just above the normal water line during releases from Folsom Dam. Because of ridges between the Folsom Powerplant channel and the spillway channel, normal Powerplant flows would not flood the construction site but flows from the existing spillway channel would.

The Stilling Basin and Cofferdam would be situated in a side channel separate from the deeper main channel of the American River, which receives releases from the Folsom Powerplant and existing spillway. The lowest elevation of the Cofferdam wall would be 133 ft. (Note the terrain along the axis of the proposed Cofferdam varies and not all of the Cofferdam would be in contact with river water during releases.) Typical discharges from Folsom Dam will place river water elevation at 131 ft. However, it is expected that the river elevation would contact the lower portion of the Cofferdam during 50% of the releases from Folsom Dam. For higher discharge events, tailwater is controlled by the downstream channel configuration. Therefore, the Cofferdam may slightly raise the tailwater level immediately adjacent to the Cofferdam but this effect would not be carried downstream of the project site.

Placement and design of the Cofferdam would not constrain downstream flows nor cause a measurable change in river water elevation at any flows. The Cofferdam would not change the downstream water surface elevation.

2.2.3 Folsom DS/FDR Project Schedule

As described in the EIS/EIR, the Folsom DS/FDR Project will be implemented through a series of phases and activities to address the hydrologic, static, and seismic issues. Refinements to the schedule have been made since issuance of the Final EIS/EIR. Table 2-1 presents the project schedule as of January 2008. Those portions of the project which are analyzed in this Supplemental EA/IS are highlighted in the

table. Refinements to the schedule with the potential to affect air quality and traffic and are analyzed in Chapter 3 and 4.

Table 2-1
Folsom Dam Safety and Flood Damage Reduction Schedule

Activity ID	***Folsom DS/FDR Action***	***Schedule***
1	Phase 1 JFP Auxiliary Spillway Excavation	December 2007 to March 2009
2	Right and Left Wing Dam Static Modifications	December 2007 to March 2009
3	Dike 5 Construction Site Access and Trail Detour	April 2008 to September 2008
4	Dike 5 Static Modifications	September 2008 to March 2009
5	Phase 2 JFP Auxiliary Spillway Construction	September 2009 to January 2011
6	Cofferdam Construction	September 2009 to March 2010
7	Stilling Basin Construction	March 2010 to January 2011
8	Dikes 4 and 6 Static Modifications	September 2013 to April 2014
9	Phase 3 JFP Auxiliary Spillway Construction	September 2011 to November 2014
10a	Pier Tendon Installation at Main Concrete Dam	January 2014 to March 2017
10b	Spillway Pier Wraps and Braces	August 2014 to April 2016
10c	Spillway Gate Repairs	January 2017 to August 2018
11	MIAD Seismic and Static Improvements	To be scheduled

Chapter 3
Affected Environment and Environmental Consequences

This chapter presents the NEPA analysis for the Proposed Action. The CEQA analysis, provided in the form of a CEQA Initial Study Checklist, is presented in Chapter 4.

3.1 Changes to the Affected Environment

Since the release of the Folsom DS/FDR EIS/EIR, several changes have occurred to project features that would not result in any new or greater impacts beyond those previously analyzed in the EIS/EIR. Under NEPA, changes to a proposed action with no new impacts beyond those previously disclosed, or changes that diminish impacts from a previous analysis, do not require additional analysis prior to implementation. Therefore, the changes described in Section 3.11 and 3.12 are not included as part of the Proposed Action as they do not require additional analysis.

For most resource sections, the affected environment remains similar to that described in the Folsom DS/FDR Draft EIS/EIR, with the addition of the Folsom DS/FDR Project. The Folsom DS/FDR Project, as approved and authorized in the RODs, is currently under construction and is therefore included as part of this affected environment. Changes and updates to the affected environment from that described in the previous EIS/EIR are described for each resource area, as necessary. Please refer back to the Folsom DS/FDR Draft and Final EIS/EIR and RODs for a detailed description of the authorized project's affected environment, impacts, and mitigation measures.

3.1.1 Changes and Clarifications that Reduce Impacts

Several refinements to the project description, which are described below, will result in a reduction in the overall impacts that were described in the EIS/EIR.

3.1.1.1 Borrow Area Near Mooney Ridge

The borrow area near Mooney Ridge has been reduced in size from that described in the EIS/EIR. The borrow area proposed in the EIS/EIR included an area of approximately 85 acres that would be used to supply shell material as part of the static improvements to Dikes 4, 5, and 6. Reclamation has refined the project and substantially reduced borrow needs. Reclamation now proposes to borrow materials from an area of approximately 5 acres. An additional 5 acres will be needed for equipment and vehicle staging and hauling. The impacted area has been reduced by approximately 75 acres.

3.1.2 Changes and Clarifications with No Impacts

Several changes and clarifications to the project description will not result in any new impacts beyond those already analyzed in the EIS/EIR.

3.1.2.1 JFP Auxiliary Spillway Width

The width of the JFP Auxiliary Spillway has been increased to account for a stepped spillway design that requires sloped walls. The original width of the Auxiliary Spillway was approximately 170 ft, but has been expanded to 240 ft. The increase in width would not result in any new impacts as it would still fall within the project footprint described in the EIS/EIR.

3.1.2.2 Stilling Basin Details

Although the Folsom DS/FDR EIS/EIR explained that a Stilling Basin would be necessary for the JFP Auxiliary Spillway, no design or construction details were available at the time. This section provides new information on the Stilling Basin design and construction that would not result in any additional impacts beyond those previously analyzed. The purpose of the Stilling Basin is to reduce the energy in the flow during releases from the JFP Auxiliary Spillway, in order to prevent erosion of the American River channel. The JFP Auxiliary Spillway consists of a control structure (with an invert elevation of 368 ft) that discharges flow from Folsom Reservoir into a rectangular inclined chute. The chute then transitions into a stepped parabolic drop section approximately 2,000 ft downstream of the control structure, at an elevation of approximately 325 ft. This stepped drop section is designated as the beginning of the Stilling Basin structure and its purpose is to dissipate energy, allowing for the size of the Stilling Basin to be reduced. The steps would be formed in concrete; excavation for the structure would not be stepped. Approximately 400 ft downstream, the stepped parabolic section would transition to a constant slope of about 2.5:1 (at about elevation of 236.0 ft), and would continue to the Stilling Basin, at an elevation of 113 ft. The Stilling Basin would be approximately 169 ft wide and 250 ft long. There would be an exit channel from the end sill of the Stilling Basin to the confluence with the American River. The invert of the exit channel would slope upward (at about 30:1 slope) until it meets the American River, about 370 ft downstream. The bottom width of the exit channel widens 10 ft on each side over a 10 ft distance downstream of the end sill.

Excavation for the Stilling Basin (from 2,000 ft below the Auxiliary Spillway channel to the American River) would be mostly rock excavation. The total excavation quantity for Stilling Basin excavation would be approximately 880,000 cubic yards (cy), including approximately 630,000 cy of rock excavation. The rock excavation would be supported with rock reinforcement that consists of rock bolts, fabric mesh, and shotcrete. The excavated slope would only be supported where required. The Stilling Basin structure would be constructed of reinforced concrete. A haul road would be constructed to provide access to the Stilling Basin. The footprint

of the Stilling Basin and haul road were analyzed in the EIS/EIR as they were included in the overall footprint of the JFP Auxiliary Spillway.

3.1.2.3 Jet Grouting at MIAD

The Folsom DS/FDR EIS/EIR indicated that jet grouting at MIAD would start in July 2008 following completion of test sections using this technology. Reclamation is in the process of reviewing the data collected from the test sections and has not made a decision on when jet grouting or an alternative measure will be implemented to address the stability issue with the foundation of MIAD. Additional environmental documentation will be completed for MIAD, as necessary.

3.1.2.4 RWD Access Road

Since release of the Folsom DS/FDR EIS/EIR, Reclamation has determined that the preferred access for haul trucks and construction equipment to the eastern side of the RWD would be from Folsom Dam Road. The proposed RWD access road would likely follow an existing dirt road, but would require widening to accommodate large trucks. In addition, the staging area below the RWD would be extended to accommodate more stockpiling of filter material during work on RWD. All other stockpiled material will be placed at Beal's Point in staging area referred to as CSARWDN.

Reclamation proposes to use this access point as a two-way route along the toe and crest of the RWD. As discussed in the EIS/EIR, approximately 40 haul trucks per day would use the RWD entry from Folsom Dam Road for the reconstruction of RWD. The haul trucks that would use the new RWD access road for RWD reconstruction any other effects of this action were previously addressed in the EIS/EIR. The RWD access road was not specifically identified in the Folsom DS/FDR EIS/EIR. No impacts would occur from the widening of this road as the area has already been cleared/graded for the JFP Auxiliary Spillway and construction of the New Folsom Bridge by the Corps. As part of mitigation for the Folsom DS/FDR Project, all transplantable elderberry shrubs have been removed from the area. There are no existing wetlands. The RWD access road would not introduce any new truck traffic and would have no additional impacts beyond those addressed in the EIS/EIR.

3.2 Environmental Consequences Analysis

The resource areas listed below have the potential to be affected by the Proposed Action and are discussed in Sections 3.3 through 3.15 of this NEPA analysis. Resource areas and the reasons that they are not addressed in this Chapter are discussed following the listing.

- Hydrology, Water Quality, and Groundwater
- Air Quality

- Aquatic Resources
- Terrestrial Resources
- Soils, Minerals, and Geological Resources
- Visual Resources
- Transportation and Circulation
- Noise
- Cultural Resources
- Land Use, Planning, and Zoning
- Recreation
- Public Services and Utilities
- Public Health and Safety

Based on review of the above changes and clarifications in Section 3.1.1 and 3.1.2, and the Proposed Action, the following environmental resources were determined to have no impacts and are not analyzed in this NEPA analysis. These resources are:

- **Water Supply** - No changes to reservoir operations would occur and the Proposed Action would not affect water supply.
- **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 result in any impacts that would result in population or housing changes.
- **Hydropower** - No changes to the releases made from Folsom Reservoir would occur as part of the Proposed Action and therefore there would be no impact to hydropower.
- **Indian Trust Assets (ITAs)** - No ITAs exist within or near the project site and no impacts to ITAs would occur.
- **Environmental Justice** - No minority or low income populations are present within the project area; therefore no environmental justice impacts would occur.

A cumulative analysis is presented for each resource area. The analysis considers reasonable past, present, and future projects that could occur in the area of Folsom Dam and Reservoir and could contribute to cumulative impacts. The cumulative projects considered for the analysis are listed in Table 3-1. Only the projects highlighted in Table 3-1 are analyzed in the cumulative analysis for this EA/IS. The remaining projects would not result in any cumulative impacts when considered with the Proposed Action.

Table 3-1
Cumulative Projects

No.	*Project Name*	*Description*	*Status*	*Relationship to Proposed Action*
1	New Folsom Bridge	New bridge downstream of Main Concrete Dam	In Construction	Water Quality, Air Quality, Aquatic Resources, Geology and Soils, Traffic, Noise, Visual Resources, Public Health and Safety
2	Folsom Dam Road Closure	Closure of Dam Road for public safety and security reasons	Remains Closed	Traffic
3	Lower American River Common Features Project	Levee stabilization and raising in Lower American River, Natomas Cross Canal, and elsewhere in Sacramento region	Ongoing	Downstream of Folsom Reservoir and does not affect any resources within the project area
4	Sacramento Municipal Utility District (SMUD) 230kV Transmission Line Relocation	Relocation of transmission lines and towers because of construction of New Folsom Bridge	Ongoing	Within the project footprint but does not affect any resources
5	Auburn-Folsom Road Widening	Widening of Auburn-Folsom Road near Dike 5 and 6	Anticipated Start Date: May 2008	Air Quality, Visual Resources, Traffic, Noise, Public Health and Safety
6	L.L. Anderson Dam Improvements	Widen the spillway of French Meadows Reservoir	Unknown	Would occur upstream of Folsom Reservoir and does not affect any resources
7	Long-Term Reoperation of Folsom Dam and Reservoir	Interim operation agreement with SAFCA expires	2018	Operational change analyses; no construction impacts
8	Future Redundant Water Supply Intake and Pipeline for Roseville, Folsom, and San Juan Water District	A new 84-inch-diameter inlet water pipe connected to the proposed Auxiliary Spillway side approach channel.	Proponents have decided not to pursue this project	None

3.3 Hydrology, Water Quality, and Groundwater

This section presents the affected environment and environmental consequences for hydrology, water quality, and groundwater.

3.3.1 Affected Environment

Snowmelt and precipitation from the upper American River Watershed discharges water into Folsom Reservoir. 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 Central Valley Regional Water Quality Control Board (CVRWQCB) for Folsom Reservoir and Lake Natoma: 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 and Lake Natoma is generally acceptable to meet the beneficial uses currently designated for these waterbodies.

Folsom Reservoir is located at the eastern edge of the Sacramento Valley Groundwater Basin, in the North American and South American subbasins. The area surrounding Folsom Reservoir primarily consists of bedrock formations of the Sierra Nevada foothill complex. Although groundwater is not a major resource in the vicinity of Folsom Reservoir, small amounts of groundwater are typically found in granitic fissures and cracks. Because fractured aquifer systems are typically low yielding, surface water sources are primarily used for drinking water or irrigation water sources rather than wells.

For the Phase 1 construction contract currently underway, Reclamation has obtained the Clean Water Act (CWA) Section 404 dredge and fill permit from the Corps for the wetlands and waters of the U.S. affected by the authorized Folsom DS/FDR Project. Reclamation has also obtained CWA Section 401 water quality certification from the CVRWQCB. Reclamation's Construction Contractor has filed a Notice of Intent with the CVRWQCB as part of the National Pollutant Discharge Elimination System (NPDES) permit. The Construction Contractor has developed a Storm Water Pollution Prevention Plan (SWPPP) to prevent water quality impacts associated with storm water runoff from the construction site. Best management practices (BMPs) have been implemented at the construction site in accordance with the SWPPP.

3.3.2 Environmental Consequences

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

3.3.2.1 No Action Alternative

Dike 5 Construction Site Access and Trail Detour

There would be no change to the affected environment.

Cofferdam

Without the use of a cofferdam, construction of the Stilling Basin could contribute to water quality impacts. During construction of the Stilling Basin, construction materials, storm water runoff, and groundwater encountered during excavation could be discharged directly into the American River channel.

3.3.2.2 Proposed Action

Dike 5 Construction Site Access and Trail Detour

Construction of the Dike 5 access could result in some minor storm water runoff impacts. The Construction Contractor would obtain an NPDES Permit and implement a SWPPP to prevent any water quality impacts associated with storm water runoff. A drainage ditch runs parallel to Auburn-Folsom Road where the turn in and turn out lanes and access road would be constructed. A culvert would be installed to maintain storm water drainage.

No adverse impacts to hydrology, water quality, or groundwater would result from the Dike 5 Construction Site Access and Trail Detour.

Cofferdam

During excavation activities involving the Stilling Basin, groundwater could be encountered. This water may have elevated levels of certain constituents which would cause it to exceed applicable surface water quality objectives and regulations. Reclamation and the Construction Contractor would test the water and obtain appropriate dewatering permits from the CVRWQCB before discharging it to any surface waters. This would reduce the potential for water quality impacts from dewatering during construction.

Construction of the Cofferdam would temporarily confine the existing floodway channel along the construction site. Hydrological modeling of the water flow and elevation changes has identified no substantial upstream or downstream hydrological effects. The lowest elevation of the Cofferdam wall would be 133 ft. (Note the terrain along the axis of the proposed Cofferdam varies and not all of the Cofferdam would be in contact with river water during releases.) Typical discharges from Folsom Dam would place river water elevation at 131 ft. However, it is expected river elevation during 50% of the releases from Folsom Dam would contact the lower portion of the Cofferdam. For higher discharge events, tailwater is controlled by the downstream channel configuration. Therefore, the Cofferdam may slightly raise the tailwater level immediately adjacent to the Cofferdam but this effect would not be carried downstream of the project site.

Placement of a Cofferdam as either a concrete wall or cellular type would be designed as to not constrain downstream flows such as to cause a measurable change in river water elevation at any flow rate. The Cofferdam would not change the downstream water surface elevation.

3.3.3 Cumulative Effects

The Cofferdam and the New Folsom Bridge Project would be built in the same vicinity and have the potential for water quality impacts as a result of construction activities. Each project is required to obtain an NPDES permit and implement a

SWPPP. With implementation of a SWPPP and appropriate BMPs, the Proposed Action would be unlikely to contribute to cumulative water quality impacts.

3.4 Air Quality

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

3.4.1 Affected Environment

The Sacramento area is classified as a non-attainment area for the ozone (O_3) and particulate matter less than 10 microns in diameter (PM_{10}) California Ambient Air Quality Standards. Other criteria pollutants addressed below include volatile organic compounds (VOC), nitrogen oxides ($NO_{x)}$, carbon monoxide (CO), sulfur dioxide ($SO_{2)}$, and particulate matter less than 2.5 microns in diameter ($PM_{2.5}$)

The affected environment for air quality remains similar to that described in the Folsom DS/FDR EIS/EIR with a few exceptions. The schedule for the Dike 5 construction has been shifted ahead of that originally proposed so that all construction will occur during 2008 and 2009. Furthermore, jet grouting at MIAD is not expected to occur in the 2008 and 2009 timeframe because Reclamation is in the process of reviewing test data. Emissions from jet grouting at MIAD have therefore been removed from the environmental analysis. Construction at LWD, RWD, and the Auxiliary Spillway has commenced and Reclamation's Construction Contractor, has paid the appropriate emission mitigation fees to the Sacramento Metropolitan Air Quality management District (SMAQMD).

3.4.2 Environmental Consequences

This section presents the environmental consequences of the Proposed Action and the No Action Alternative. The emissions values presented as part of this air quality analysis are only estimates. The actual values will not be known until the Construction Contractor is onsite and has determined the exact equipment to be used.

3.4.2.1 No Action

Dike 5 Construction Site Access and Trail Detour

There would be no change to the affected environment.

Cofferdam

There would be no change to the affected environment.

3.4.2.2 Proposed Action

Dike 5 Construction Site Access and Trail Detour

In the Folsom DS/FDR Final EIS/EIR, work at Dike 5 was scheduled to start in September 2009. Due to SOD schedule priorities, Reclamation has elected to initiate the Dike 5 work by September 2008, continuing into 2009. The air quality impacts

related to construction at Dike 5 were already addressed in the Final EIS/EIR; the only action related to the Supplemental EA/IS is the date adjustment.

Emissions estimates for Dike 5 construction equipment and haul trucks are summarized in Table 3-2. Both daily and project-level emissions (i.e., tons per year) are less than the Placer County Air Pollution Control District (PCAPCD) and General Conformity thresholds in 2008 and 2009.

Table 3-2
Summary of Emissions at Dike 5

	Pollutant				
Year	***NOx***	***ROG[1]***	***CO***	***PM_{10}***	***$PM_{2.5}$***
	Pounds per Day				
2008	64.66	7.28	29.40	2.90	2.67
2009	60.95	6.96	27.90	2.76	2.51
Thresholds	***82***	***82***	***550***	***82***	***n/a***
	Tons per Year				
2008	1.46	0.16	0.66	0.065	0.060
2009	1.38	0.16	0.63	0.062	0.057
Thresholds	***50***	***50***	***100***	***100***	***n/a***

[1] Reactive organic gases

As is shown in Table 3-2, emissions are less than the PCAPCD thresholds for Dike 5 construction, and therefore no substantial air quality impacts would occur.

Combined emissions from Dike 5 and other Folsom DS/FDR actions scheduled for 2008 and 2009 were reviewed to evaluate compliance with General Conformity. Table 3-3 summarizes total emissions from the project.

Table 3-3
Summary of Total Emissions for 2008 and 2009

	Emissions (tpy)		***General Conformity***
Pollutant	**2008**	**2009**	***Threshold (tpy)***
NOx	43.9	27.5	50
CO	41.5	17.0	100
PM_{10}	54.8	55.1	100

As is demonstrated in Table 3-3, emissions would be less than the applicable General Conformity thresholds and therefore no adverse air quality impacts are expected. Overall, the change in schedule for the Dike 5 work is not expected to result in any substantial air quality impacts.

Construction for the Trail Detour would have minimal impacts to air quality given the limited types of construction equipment required and the short time-frame required to grade and surface the trail route.

Cofferdam

The construction of the Cofferdam would require more trucks than originally assessed in the Folsom DS/FDR EIS/EIR to bring required materials to the site. It is expected that 40 trucks per day would be hauling material from local sites over a 45-day period in 2009. Of these trucks, 30 would be hauling concrete and the remaining 10 would be hauling steel.

Emission Calculation Methodology

The haul truck engine emissions estimates were calculated using EMFAC2002 emission factors for heavy-duty diesel trucks in the Sacramento Valley Air Basin and estimates of total vehicle miles traveled per day. The emission factors used in this analysis are presented in Table 3-4. The average speed for off-site hauling was assumed to be 30 miles per hour (mph).

Table 3-4
Heavy-Duty Diesel Truck Emission Factors for Sacramento Valley (30 mph)

Pollutant	*Emission Factor (g/VMT)*
VOC/ROG	0.676
CO	2.506
NOx	11.147
PM_{10} Total[(1)]	0.343
SO_2	0.021
$PM_{2.5}$ Total[(1)]	0.285

[(1)] PM_{10} and $PM_{2.5}$ totals include engine exhaust, tire wear, and brake wear.
g/VMT = gallons per vehicle miles traveled

Re-entrained road dust from haul truck travel was estimated for paved and unpaved roads. Paved road dust was estimated using emission factors developed by the Midwest Research Institute (MRI 1996), presented in Table 3-5. The emission factor of 0.81 gallons per vehicle mile traveled (g/VMT) for average conditions was used in the analysis.

Table 3-5
Paved Road Re-entrained Dust PM_{10} Emission Factors (g/VMT)

Road Condition	*Average Daily Trips (ADT)*		
	High	*Low*	*Average*
Average conditions	0.37	1.3	0.81
Worst-case conditions	0.64	3.9	2.1

Source: (Midwest Research Institute 1996).

Consistent with the original analysis, concrete and steel would be transported from local sites with a maximum roundtrip distance of 50 miles. Both exhaust emissions and re-entrained dust from paved roads were calculated for the hauling trucks above.

Emission Inventories

Construction impacts were estimated following the methodology described above. Table 3-6 provides a summary of peak daily and annual emission rates for VOC, NO_x, CO, SO_2, PM_{10}, and $PM_{2.5}$. In cases where emission factors were only provided for PM_{10}, appropriate California Air Resources Board (CARB) PM size profiles were used to estimate $PM_{2.5}$ emissions. Emissions are provided from the Cofferdam's contribution only, as well as for the overall project.

Table 3-6
Uncontrolled Construction Emission Inventories

Pollutant	*Cofferdam Emissions*
Peak Daily Emissions in lbs/day	
VOC	4.7
NOx	76.9
CO	17.5
SO_2	<1
PM_{10}	8.8
$PM_{2.5}$	3.1
Peak Annual Emissions in tons/year	
VOC	<1
NOx	2
CO	<1
SO_2	<1
PM_{10}	<1
$PM_{2.5}$	<1

NOx has a short-term (construction) significance threshold of 85 pounds per day. Under the General Conformity Rule, NOx and VOC each have a 50 tons per year (tpy) de minimis threshold, PM_{10} has a 100 tpy de minimis threshold, and CO has a 100 tpy de minimis threshold. The emission estimates provided in Table 3-6 indicates the uncontrolled NOx emissions would not exceed the SMAQMD's daily emission rates, nor would uncontrolled NOx, PM_{10}, and CO emissions exceed the General Conformity de minimis thresholds.

Based on this analysis, construction of the Cofferdam itself would not cause an adverse impact that exceeds applicable thresholds. Since the peak annual emissions only represent a modest emissions increase, the General Conformity thresholds would not be exceeded when added to the other Folsom DS/FDR actions planned for 2008 and 2009. Although emissions at the Cofferdam would not exceed SMAQMD's daily thresholds, when combined with other Folsom DS/FDR actions happening concurrently, daily emissions would be considered substantial. The Cofferdam work would be operated in compliance with minimization measures described below and any necessary fees to the SMAQMD's mitigation fund would be paid. The minimization measures described below would adequately address the air quality impacts associated with the Cofferdam.

3.4.3 Minimization Measures

Reclamation and the Construction Contractor will submit a plan for approval by SMAQMD, demonstrating that the heavy-duty off-road vehicles will achieve a project-wide fleet average 20 percent NOx reduction and 45 percent particulate reduction. The plan will also have to include an inventory of all off-road construction equipment equal to or greater than 50 horsepower that will be used an aggregate of 40 or more hours during any portion of the project. Reclamation and the Construction Contractor will also have to demonstrate conformity with NOx thresholds, apply fugitive dust control on roadways, processing plants, and concrete batch plants and obtain power for construction facilities from the electric utility grid rather than diesel-driven generators and pumps. The Construction Contractor will be encouraged to seek additional control measures as part of emissions offsets.

The above analysis estimates that project-wide emissions from the Cofferdam and ongoing operations related to the overall Folsom DS/FDR would exceed 85 pounds per day. Such operational impacts were previously addressed in the Folsom DS/FDR EIS/EIR and, as described therein, a mitigation fee will be paid to SMAQMD's mitigation fund for any excess emissions. Emissions from the Cofferdam will be offset with the appropriate payment of this mitigation fee.

3.4.4 Cumulative Effects

Although construction of the Cofferdam would lead to air quality impacts, these impacts would be reduced by minimization measures discussed above. The New Folsom Bridge Project would also have the potential to impact air quality. Although the projects are occurring concurrently, both will employ minimization measures to reduce emissions to below the threshold levels. The Auburn-Folsom Road Widening Project has the potential to impact air quality and could occur concurrently with construction at Dike 5. Both projects will apply minimization measures as needed to reduce emissions below the appropriate threshold levels. Since all of the projects will minimize emissions as needed and required, the Proposed Action is not expected to contribute to cumulatively considerable air quality impacts.

3.5 Aquatic Resources

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

3.5.1 Affected Environment

Native and introduced fishes are present in the Folsom Reservoir area. Native fishes occur primarily as a result of their continued existence in tributaries of Folsom Reservoir and Lake Natoma. Two native species are planted in Folsom Reservoir for fishing, rainbow trout and Chinook salmon. The populations of most other species are currently self-supporting. Introduced fishes are more commonly found in the

reservoirs than are native fishes. Most of these fishes were introduced into the State as game fish or as forage fish to support game fish populations.

The lower American River has been designated as Critical Habitat for spring-run Chinook salmon, and steelhead. Anadromous fish, such as Chinook salmon and steelhead can access about 23 miles of the lower American River downstream of Nimbus Dam but do not ascend the river beyond Nimbus Dam.

No vernal pools have been identified within the Dike 5 area, the Trail Detour area, or the Cofferdam area.

3.5.2 Environmental Consequences

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

3.5.2.1 No Action Alternative

Dike 5 Construction Site Access and Trail Detour

There would be no changes to the affected environment.

Cofferdam

Aquatic habitat occurs downstream of the Stilling Basin. Without construction of the Cofferdam, water quality impacts on aquatic resources could occur during work on the Stilling Basin. Construction materials, storm water runoff, and groundwater encountered during excavation activities could be released into the American River channel and could adversely affect aquatic habitats.

3.5.2.2 Proposed Action

Dike 5 Construction Site Access and Trail Detour

No aquatic resources are expected to be impacted by the construction of the Dike 5 Construction Site Access or the Trail Detour.

Cofferdam

Aquatic habitat occurs downstream of the Stilling Basin and Cofferdam construction area. This habitat may be affected by construction activities including increased erosion and sedimentation or dewatering of the Stilling Basin. The current NPDES permit and SWPPP in place for the Folsom DS/FDR Project covers the area where the Stilling Basin would be constructed. This permit requires the implementation of BMPs to reduce or eliminate the potential for storm water runoff and erosion from the construction site. Any groundwater encountered during construction would be tested to ensure no adverse water quality impacts would occur before it is discharged to any surface water. The Cofferdam would be unlikely to create any substantial adverse effects to aquatic habitat with the proper implementation of BMPs described in the SWPPP and with testing of groundwater before it is discharged to surface water to ensure there are no contaminants.

As described in Section 3.3 above, construction of the Cofferdam would temporarily confine the existing floodway channel along the construction site. Hydrological modeling of the water flow and elevation changes has identified no substantial upstream or downstream hydrological effects. The Cofferdam may slightly raise the tailwater level immediately adjacent to the Cofferdam but this effect would not be carried downstream of the project site. Placement of a Cofferdam would be designed as to not constrain downstream flows such as to cause a measurable change in river water elevation at any flow rate. The Cofferdam would not change the downstream water surface elevation.

3.5.3 Cumulative Effects

The implementation of the Proposed Action could lead to cumulative impacts when considered with projects in the same area. The Folsom Bridge Project could be under construction at the same time as the Cofferdam and could have some impacts to aquatic resources. However, these impacts have been disclosed in environmental documents and all impacts would be mitigated to the greatest extent possible. With proper implementation of BMPs as part of the SWPPP, the Cofferdam would not contribute to any cumulatively considerable impacts on aquatic resources.

3.6 Terrestrial Resources

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

3.6.1 Affected Environment

The project area is dominated by aquatic habitat within Folsom Reservoir, but stands of native vegetation occupy much of the area adjacent to the shoreline. This area supports seven major terrestrial vegetation types that are typical of the foothills of California's Central Valley. These types include: interior live oak woodland, blue oak woodland and savanna, annual grassland, chaparral, cottonwood-willow riparian, freshwater marsh, and seasonal wetland. Examples of wildlife associated with these habitat types include woodpeckers (*Picoides nuttallii*), northern flickers (*Colaptes auratus*), whitebreasted nuthatches (*Sitta carolinensis*), oak titmice (*Baeolophus inornatus*), western gray squirrels (*Sciurus griseus*), raccoons (*Procyon lotor*), hoary bat (*Lasiurus cinereus*), pallid bat (*Antrozous pallidus*),California quail, (*Callipepla californica*), wild turkeys (*Meleagris gallopavo*), northern flickers, western scrub-jays (*Aphelocoma californica*), ruby-crowned kinglets (*Regulus calendula*), bushtits (*Psaltriparus minimus*), warbling vireos (*Vireo gilvus*), Hutton's vireos (*Vireo huttoni*), Wilson's warblers (*Wilsonia pusilla*), American robins (*Turdus migratorius*), Bullock's orioles (*Icterus bullockii*), house finches (*Carpodacus mexicanus*), spotted towhees, gopher snakes, common kingsnakes (*Lampropeltis getula*), bobcats, gray foxes, striped skunks (*Mephitis mephitis*), mule deer, and a variety of rodents.

Based on known occurrences and quality of existing habitat, a total of 27 special-status terrestrial wildlife species have the potential to occur in the project area. These species include one invertebrate, three amphibians, three reptiles, sixteen birds and four mammals. Additionally, a total of five special-status plant species have potential to occur in the project area. Please see the Folsom DS/FDR Draft EIS/EIR for a complete description of terrestrial vegetation and wildlife within the project area.

3.6.2 Environmental Consequences

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

3.6.2.1 No Action Alternative

Dike 5 Construction Site Access and Trail Detour

There would be no changes to the affected environment.

Cofferdam

There would be no changes to the affected environment.

3.6.2.2 Proposed Action

The majority of the Proposed Action would occur within the existing footprint of the Folsom DS/FDR Project currently under construction. Most terrestrial resources within this area would already be substantially disturbed or disrupted by construction of other aspects of the Folsom DS/FDR Project. For instance, the Cofferdam would be constructed within the footprint of the JFP Auxiliary Spillway. Impacts from construction of the Auxiliary Spillway are described and mitigated for in the Folsom DS/FDR EIS/EIR. The analysis below accounts for any impacts not described in the EIS/EIR.

Section 7 consultation under the Endangered Species Act (ESA) was completed for Folsom DS/FDR Project effects to the federally listed valley elderberry longhorn beetle and vernal pool crustaceans on April 5, 2007 and amended on December 5, 2007 and January 31, 2008. As required by the U.S. Fish and Wildlife Service (USFWS) Biological Opinion dated April 5, 2007, all elderberry shrubs from Dike 4 down to the RWD have been removed within the Folsom DS/FDR Project area. Therefore the Proposed Action would have no effect on valley elderberry longhorn beetles.

The USFWS Biological Opinion dated April 5, 2007, determined that the Folsom DS/FDR Project may adversely affect vernal pool fairy shrimp and vernal pool tadpole shrimp. No suitable habitat (i.e. vernal pools) occurs within the affected environment of this EA/IS, therefore the Proposed Action would have no effect on vernal pool fairy shrimp and vernal pool tadpole shrimp.

The USFWS Biological Opinion dated April 5, 2007, had determined that though other federally listed species, such as the El Dorado bedstraw, Layne's Butterweed, California red-legged frog, and giant garter snake, may occur in Sacramento and/or Placer Counties, the project area is outside the known habitats for these species, and, therefore, the USFWS has determined that the project may affect but is not likely to adversely affect these species. Although the Proposed Action would affect an area outside the original DS/FDR footprint analyzed in the Biological Opinion, the Proposed Action would occur in similar habitat that is directly adjacent to the habitat of the original footprint and therefore it is assumed that no adverse effect on other federally listed species, including the El Dorado bedstraw, Layne's butterweed, California red-legged frog, and giant garter snake would occur.

Dike 5 Construction Site Access and Trail Detour
The Dike 5 staging area impacts were already disclosed in the EIS/EIR. The Dike 5 Construction Site Access would not result in any changes to impacts from those already disclosed in the EIS/EIR because construction would occur within the same footprint.

Oak woodlands and annual grasslands are present within the Dike 5 Construction Site Access and Trail Detour construction areas and may be affected by activities including vegetation trimming and cut and fill to widen the trail. Oak woodland and annual grassland provide resting, nesting, and forage habitat for a variety of wildlife. The Trail Detour would be rerouted to avoid the removal of trees and other vegetation but may require some trimming of vegetation to obtain the proper width. The Trail Detour would be constructed along existing dirt trails as much as possible to reduce vegetation and wildlife impacts. The Trail Detour would not be paved, but would be created mainly using native materials found onsite. Impacts to terrestrial resources are expected to be minimal.

Although wetland habitats, such as seasonal wetlands and swales, are present within the Trail Detour construction area, the trail would be rerouted to avoid such areas or spans would be constructed to cross over them. Overall, the Trail Detour is not expected to require removal, filling, or hydrological disruption of seasonal wetlands and swales.

Cofferdam
Because the RWD, LWD, JFP Auxiliary Spillway, and haul road to MAID areas have already been cleared of vegetation, no terrestrial resources are expected to be impacted by the construction of the Cofferdam.

3.6.3 Cumulative Effects

The Proposed Action would lead to a minimal amount of impacts on terrestrial resources from construction of the Trail Detour. No other cumulative projects would

occur in the area of the Trail Detour; therefore, there would be no cumulative effects to terrestrial resources.

3.7 Soils, Minerals, and Geological Resources

This section presents the affected environment and environmental consequences for soils, minerals, and geological resources.

3.7.1 Affected Environment

Reclamation's Construction Contractor is currently in the process of clearing the Phase 1 area to prepare for construction. As described above under Hydrology, Water Quality, and Groundwater, a SWPPP has been implemented to control erosion and prevent storm water runoff.

No seismic issues or unstable soils occur in the area of the Proposed Action. The potential for landslides is low because of relatively thin soils. Although the Bear Mountain fault occurs north 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.

3.7.2 Environmental Consequences

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

3.7.2.1 No Action Alternative

Dike 5 Construction Site Access and Trail Detour

There would be no changes to the affected environment.

Cofferdam

There would be no changes to the affected environment.

3.7.2.2 Proposed Action

Dike 5 Construction Site Access and Trail Detour

Construction of the new access road and turning lanes at Dike 5 would be unlikely to result in any soil erosion or loss of topsoil as the lanes and road would be paved. Construction vehicles and equipment entering and exiting the Dike 5 area could cause some soil erosion and dust if they move off the road. The proper implementation of the SWPPP would help to reduce the impacts from erosion. In addition, vehicles and equipment would be maintained in designated areas to reduce the erosion potential.

The Trail Detour would require some cut and fill to provide appropriate slopes. A small quantity of topsoil would likely be removed and placed elsewhere onsite. The Trail Detour would be covered with native materials which would reduce the potential for soil erosion. In addition, the Trail Detour would improve the outslope

and alignment of some existing trails and thereby reduce erosion. Also by providing one well defined well built trail that a variety of recreational users may use, erosion on adjacent rudimentary trails would be reduced. Geology and soils impacts from the Trail Detour construction are expected to be minimal.

Cofferdam
Construction of the Stilling Basin and Cofferdam would occur in an area that consists mainly of decomposed granite and would be unlikely to contribute to soil erosion with proper implementation of BMPs as outlined in the SWPPP.

3.7.3 Cumulative Effects

The Proposed Action would not be expected to lead to cumulative impacts. The only other project in the area, the New Folsom Bridge Project, has analyzed impacts to soils and geological resources in an environmental document and has developed measures to reduce these impacts. Both the Proposed Action and the New Folsom Bridge Project are required to implement SWPPPs which contain BMPs to reduce soil erosion and storm water runoff. Adherence to the SWPPP measures combined with diligent coordination between both projects would prevent cumulative impacts.

3.8 Visual Resources

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

3.8.1 Affected Environment

The proposed location for the Trail Detour is the downstream side of Dikes 4, 5, and 6. The area contains views of grasslands, oak woodlands, and wetlands. Several unimproved recreation trails are visible in the area. The downstream side of Dike 5 contains mostly grasslands that continue to Auburn-Folsom Road. Existing trails cross through the proposed staging area at Dike 5. Auburn-Folsom Road is visible from the trails on the downstream side of Dike 5.

The area around the JFP Auxiliary Spillway and Stilling Basin is currently under construction. The area has been cleared and excavation activities are expected to commence in early 2008. The New Folsom Bridge is also under construction in this area and has cleared a large portion of land below RWD. Construction equipment and vehicles are visible throughout the week.

3.8.2 Environmental Consequences

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

3.8.2.1 No Action Alternative

Dike 5 Construction Site Access and Trail Detour

There would be no changes to the affected environment.

Cofferdam

There would be no changes to the affected environment.

3.8.2.2 Proposed Action

Dike 5 Construction Site Access and Trail Detour

Construction of a traffic light and turning lanes on Auburn-Folsom Road would affect views of the area from several homes across the street and may be visible from recreation users on the trails. The traffic light and/or flagmen and turning lanes, as well as construction vehicles, would be visible at certain times of the day. There may also be flashing lights to the north and south of the new traffic light to warn drivers of stopped traffic. These impacts would only be temporary. The light would be constructed prior to work on Dike 5 and when Dike 5 work is complete, the light would be placed in an inactive (or stand- by) mode or removed until Dike 4 and 6 work begins. When construction is complete at all of the dikes, the traffic light and/or flagmen would be removed. The turn lanes would also be removed and the road would be restored to pre-construction conditions. In the event that the Placer County commences construction of the Road Widening Project in the Dike 5 area, the agencies would coordinate to determine how the road would be restored.

The Trail Detour could require the trimming of some trees and vegetation and would create a 5-to 6-ft wide trail composed of native materials. Portions of the trail would be constructed along an existing unimproved trail. Reclamation would avoid removing trees by re-routing the trail around them. Up to three construction vehicles would be required to construct the trail, which could take up to six months. The area cleared for the Trail Detour would be visible to users on the Pioneer Express Trail and other existing trails in the area. Construction of the Trail Detour and the trimming of vegetation would have a minimal affect to the visual quality of the area.

The existing trail on top of Dikes 4, 5, and 6 has views of Folsom Reservoir and the shoreline. The Trail Detour would not have views of the reservoir because of its location on the downstream side of the dikes. The Trail Detour would instead provide views of wetlands, grasslands, and oak woodland. Because the Trail Detour would be temporary and would still provide views of natural landscapes, no substantial adverse effects are expected to visual resources.

Cofferdam

Construction of the Cofferdam is not expected to substantially degrade the existing visual character of the area. The area would already be substantially changed due to construction of the JFP Auxiliary Spillway and Stilling Basin. The Cofferdam would be constructed to ensure the Stilling Basin area remains dry during construction and

would be partially or fully removed after construction is complete. The area of the JFP Auxiliary Spillway is not open to the public and would only be partially visible from traffic on the New Folsom Bridge being constructed by the Corps. The construction of the Cofferdam would not alter scenic vistas or views from scenic highways. Because it would be constructed in a disturbed area that is not open to the public, and it would be fully or partially removed after construction, this is not expected to adversely affect visual resources.

3.8.3 Cumulative Effects

It is unlikely that any substantial cumulative effects would occur to visual resources. The area of the Cofferdam is in close proximity to the New Folsom Bridge but is not open to the public and is generally not visible from any of the recreation areas or trails. The area would already be disturbed for construction of the JFP Auxiliary Spillway and the New Folsom Bridge and is not expected to contribute to a cumulative impact to visual resources.

The Dike 5 area could be altered by construction of a temporary intersection and by construction traffic entering the site. At the same time, Placer County would be constructing the Auburn-Folsom Road Widening Project. This project is expected to be working south of the Dike 5 area but would have temporary visual impacts related to construction equipment and vehicles. The Proposed Action and the Placer County Road Widening Project would have construction-related visual impacts on Auburn-Folsom Road but these would be temporary. Additionally, Phase 1 of the Road Widening Project would occur south of the Proposed Action. Overall, the Proposed Action would not contribute to any substantial cumulative visual impacts.

3.9 Transportation and Circulation

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

3.9.1 Affected Environment

3.9.1.1 Area of Analysis

The roadways within the study area of the Supplemental EA/IS are within Sacramento County, Placer County, and the city of Folsom. Each of these jurisdictions has adopted standards regarding the desired performance level for traffic conditions on the circulation system within its jurisdiction. A measure called "Level of Service" (LOS) is used to characterize traffic conditions. 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. A more detailed explanation of LOS and how it is determined is provided in Section 3.9.3.1 of the DS/FDR EIS/EIR.

These LOS thresholds, reflected at the local jurisdiction level through the County and City General Plans, define the minimum levels of acceptable traffic conditions within the respective jurisdictions, typically LOS C or, in more urbanized areas, LOS D. Related to those LOS thresholds are additional thresholds used to determine where a change in traffic conditions, such as that associated with additional traffic from a new development project, would result in a substantial impact to the local roadway system. Should a substantial impact be identified, the formulation of minimization measures for that impact is warranted. Table 3-7 presents the local and regional LOS standards and associated thresholds used in this impact analysis.

Table 3-7
Local and Regional LOS Standards and Significance Thresholds

Regulatory Agency	***Standards***	***Significance Thresholds***
Sacramento County	Rural collectors: LOS D Urban area roads: LOS E	*Roadways/Signalized Intersections: A project is considered to have a significant effect if it would:* • result in a roadway or a signalized intersection operating at an acceptable LOS to deteriorate to an unacceptable LOS; or • increase the volume to capacity (V/C) ratio by more than 0.05 at a roadway or at a signalized intersection that is operating at an unacceptable LOS without the project. *Unsignalized Intersections: A project is considered to have a significant effect if it would:* • result in an unsignalized intersection movement/approach operating at an acceptable LOS to deteriorate to an unacceptable LOS, and also cause the intersection to meet a traffic signal warrant; or • for an unsignalized intersection that meets a signal warrant, increase the delay by more than 5 seconds at a movement/approach that is operating at an unacceptable LOS without the project. *Freeway Ramps: A project is considered to have a significant effect if it would:* • result in a facility operating at an acceptable LOS to deteriorate to an unacceptable LOS, according to the LOS threshold defined by Caltrans. *Freeway Segments: A project is considered to have a significant effect if it would:* • result in a facility operating at an acceptable LOS to deteriorate to an unacceptable LOS, according to the LOS threshold defined in the Caltrans Route Concept Report for that facility. *Residential Streets: A project is considered to have a significant effect if it would:* • result in a residential street operating at an acceptable LOS to deteriorate to an unacceptable LOS; or • increase the V/C ratio by more than 0.05 at a residential street that is operating at an unacceptable LOS without the project. *Bicycle and Pedestrian Facilities: A project is considered to have a significant effect if it would:* • eliminate or adversely affect an existing bikeway or pedestrian facility in a way that would discourage its use; • interfere with the implementation of a planned bikeway as shown in the Bicycle Master Plan, or be in conflict with the Pedestrian Master Plan; or • result in unsafe conditions for bicyclists or pedestrians, including unsafe bicycle/pedestrian, bicycle/motor vehicle, or pedestrian/motor vehicle conflict. *Safety: A project is considered to have a significant effect if it would:* • substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

Table 3-7
Local and Regional LOS Standards and Significance Thresholds

Regulatory Agency	***Standards***	***Significance 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 project 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, then the Folsom DS/FDR must implement mitigation measures 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 (Brinkman 2006).

The following describes the existing characteristics of the roadways and intersections located within the traffic analysis study area. Existing traffic volume data for the subject roadways were collected from a variety of sources. Recent EIS/EIR filings, City and County Transportation Divisions, and General Plan documents were researched to collect as much existing traffic volume data as possible. The primary source of traffic data information is the Folsom Bridge Draft Supplemental EIS/EIR (Bridge EIS/EIR) dated May 2006.

<u>Auburn-Folsom Road from Oak Leaf Way/Oak Hill Drive to Eureka Road:</u>

Auburn-Folsom Road is described in detail in Section 3.9 of the Folsom DS/FDR Draft EIS/EIR. This segment of Auburn-Folsom Road is 1 lane in each direction and the speed limit is 50 miles per hour. The terrain in this area is generally rolling, with several curves, both horizontal and vertical. At some locations, sight distance is very limited. It is surrounded by open space, recreational use, and residential use. The intersections at Oak Hill Drive and Eureka Road are both signalized. The proposed access road would be between these two signalized intersections. There are no other signalized intersections between these two intersections; however there are

additional non-signalized intersections, primarily at minor residential streets and private driveways.

Existing traffic volumes for this roadway segment and the corresponding LOS and volume to capacity ratio (V/C) are identified in Section 3.9 of the Folsom DS/FDR Draft EIS/EIR. Traffic counts performed in 2004 for the New Bridge EIS/EIR found the Average Daily Total of vehicles (ADT) on the segment to be 26,500, and the LOS to be F[1]. As described in the Folsom DS/EIR, a growth factor was applied to the 2004 data to determine the ADTs and LOS ratings in later years, as well as the V/C. A V/C value less than 1.0 indicates that the ADT is less than the capacity, where a V/C value greater than 1.0 indicates that the roadway volume is greater than the roadway capacity. For 2008, the ADT was projected to be 31,669 with an LOS F rating, and a V/C value of 1.69[2]. In 2009 the projected ADT was 32,473, with LOS F and V/C 1.74[3]. These projections include the traffic impacts of the Folsom DS/FDR as identified in the EIS/EIR, and are therefore considered the existing conditions on this roadway segment.

Auburn-Folsom Road at Beal's Point/Oak Hill Drive

On Auburn-Folsom Road in the northbound direction, there is an exclusive left turn lane and one through lane. In the southbound approach there is 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 consists of a single general use lane. There are no bicycle lanes or sidewalks. The intersection was analyzed in the Folsom Bridge Draft Supplemental EIS/EIR and identified to have LOS B in the AM peak (7:00 AM-9:00 AM) and LOS C in the PM peak (4:00 PM-6:00 PM) (See Table 3-5 in the Folsom Bridge Draft Supplemental EIS/EIR). The turning count movements are also included in Figure 3-5 of the Folsom Bridge EIS/EIR.

Hauling Route from Tiechert Prairie City Borrow (White Rock/ Scott Road) to the LWD.

As described in the Folsom DS/FDR EIS/EIR, aggregate materials for work in the vicinity of the JFP Auxiliary Spillway would come from the Tiechert Prairie City Borrow site on Scott Road, south of Highway 50/White Rock Road. This haul route would go north on Scott Road to White Rock Road, back to Scott Road, and then north on East Bidwell Street. It continues north on Oak Avenue Parkway, east on Blue Ravine Road, and then west on East Natoma Street until the beginning of Reclamation's private haul road. The characteristics of these roads are described in

[1] Traffic counts conducted in 2004 by Fehr and Peers and published in the Folsom Bridge Supplemental EIS/EIR May 2006 (Corps 2006).
[2] Modeled in the Folsom DS/FDR EIS/EIR.
[3] Modeled in the Folsom DS/FDR EIS/EIR.

section 3.9 of the Folsom DS/FDR EIS/EIR. For this analysis, the without project ADT values on these roads is considered to be the ADTs determined in the EIS/EIR for the proposed DS/FDR project; these values are repeated in Table 3-9 below.

3.9.2 Environmental Consequences

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

3.9.2.1 No Action Alternative

Dike 5 Construction Access and Trail Detour

Under the No Action Alternative, there would be no change from the affected environment. As described in the EIS/EIR, access to the Dike 5 construction site would occur through Beal's Point. For the duration of the Dike 5 construction, this would add 27 daily morning and early afternoon construction worker trips from northbound and southbound on Auburn-Folsom Road to Beal's Point, and 27 afternoon and nighttime trips out of Beal's Point (assuming two work shifts). During peak construction activities, a period of no more than 30 days, 40 haul trucks would enter and exit Beal's Point throughout the day between 7 am and 3 pm to deliver materials.

Under the No Action Alternative, construction traffic could adversely impact recreational traffic. The entrance to Beal's Point can become heavily trafficked during peak recreation seasons, and adding slow moving trucks could cause back ups to the intersection with Auburn-Folsom Road.

Cofferdam

There would be no change to the affected environment.

3.9.2.2 Proposed Action

Dike 5 Construction Access and Trail Detour

The access road to Dike 5 could either be implemented with the control of a temporary traffic signal or a flagman. Both of these options are analyzed below. There are two potential locations for the temporary intersection on Auburn-Folsom Road: a four-way intersection at existing Bell Drive or a three-way intersection slightly further south of Bell Drive. Reclamation and their Construction Contractor, in coordination with Placer County, would ensure the intersection is located in a way that does not result in a traffic hazard or pose a safety risk to the flagman or approaching vehicles. All safety precautions would be taken to alert drivers to the new temporary intersection when it is in use.

Dike 5 Construction Site Access with Signalized Intersection

The Proposed Action includes the addition of an access road to the Dike 5 construction site from Auburn-Folsom Road. The access road could either be constructed off Auburn-Folsom Road across from Bell Drive, creating a four-way

intersection, or it could be constructed further south of Bell Drive, creating a three-way signalized intersection. Either intersection could be controlled by a temporary traffic signal which would be installed prior to construction in September 2008 and would be blacked out or removed at the conclusion of construction in March 2009. The signal would be set back in operation for construction at Dikes 4 and 6, estimated to occur in 2013 to 2014, during which time the same access road to Dike 5 would be used. This Proposed Action would allow access to Dike 5 for staging and construction to occur from Auburn-Folsom Road immediately west of Dike 5, thereby reducing conflicts with recreational traffic at Beal's Point.

To accommodate construction traffic under this alternative, the installation of a temporary intersection with a traffic signal was evaluated. The signal would provide red (stop) indications on Auburn-Folsom Road only for construction-related traffic leaving the construction site, or traffic exiting Bell Drive, in the case of the four-way intersection. Construction related heavy truck traffic entering the site would do so via a dedicated deceleration lane from the northbound lane only of Auburn-Folsom Road to further minimize traffic congestion. No heavy truck traffic would be allowed to enter the site via a left turn from the north. Traffic leaving the site would be controlled by the signal, and would be able to turn right or left onto Auburn-Folsom Road. Use of Auburn-Folsom Road and construction of turn outs and merge lanes would be coordinated with Placer County and would require an encroachment permit. Oncoming traffic would be alerted to the temporary signal by signs or warning lights as required by Placer County. Electronic variable message boards would be activated at least two weeks prior to installation of the temporary signal, notifying travelers of planned modifications to the traffic pattern.

During peak construction at Dike 5, it is anticipated that up to 27 site workers and 40 haul vehicles per day would enter and exit the Dike 5 staging location. Peak activities would be expected to last less than 30 days. As noted in the Folsom DS/FDR Draft EIS/EIR, two work shifts are assumed to be operated during construction of Dike 5; 5am to 2pm, and 2pm to 11pm, with material and equipment hauling activity occurring during the hours of 7am to 3pm.

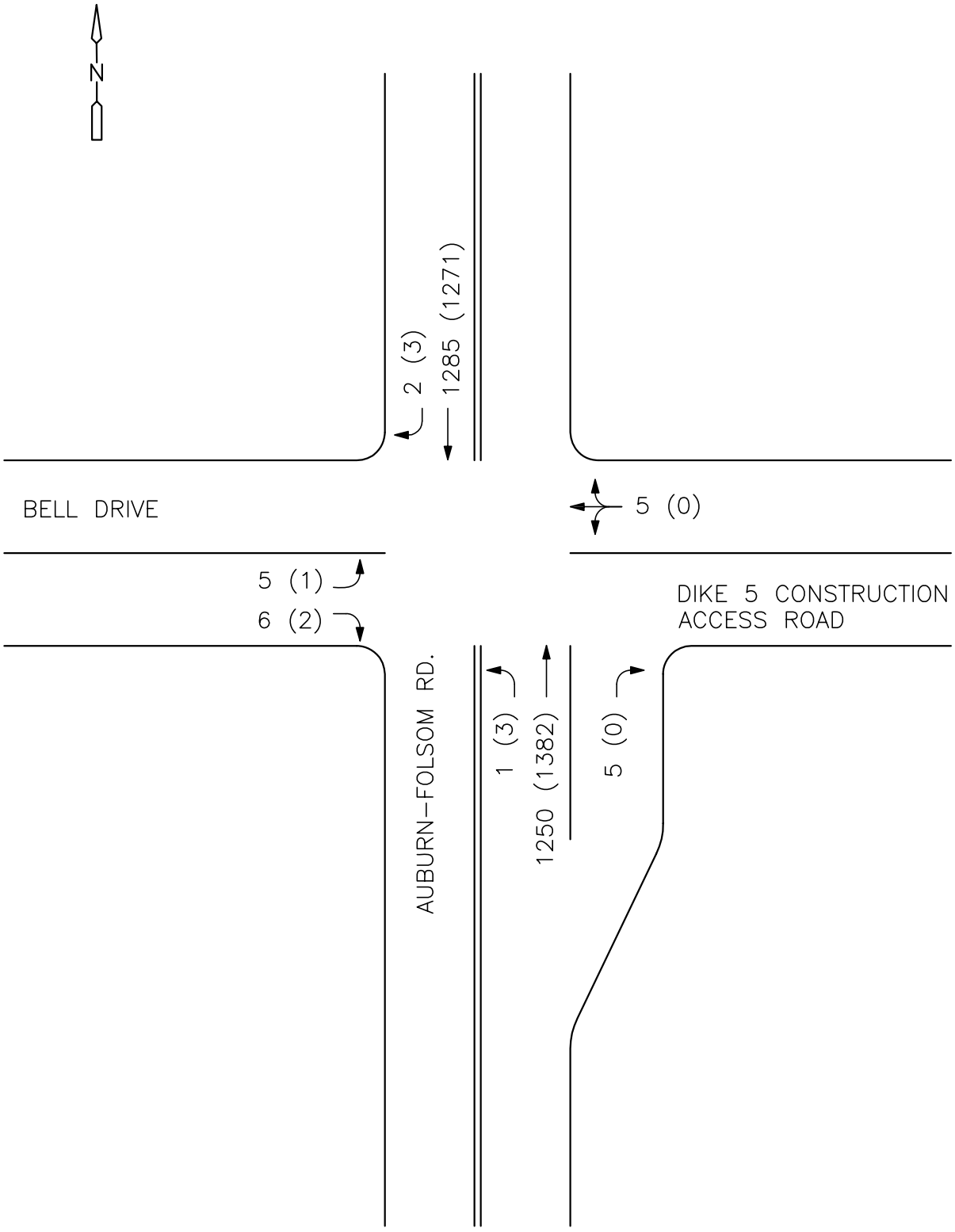
The proposed intersections were analyzed using Synchro 7 software and are based on the concepts and procedures in the Highway Capacity Manual (Transportation Research Board 2000). The analysis is based on AM and PM peak hour volumes obtained from 2004 counts provided by Fehr & Peers Transportation Consultants with a growth factor of 3% applied annually (calculations in Appendix A). With the hours noted above, the AM peak is only affected by material and equipment hauling, and the PM peak is unaffected by Dike 5 construction traffic.

The results of the analysis of the four-way intersection at Bell Drive identify the intersection to operate at LOS A in the AM peak (7:00 AM-9:00 AM) and LOS A in the PM peak (4:00 PM-6:00 PM) (See analysis in Appendix A). Further, the analysis

indicates queue lengths of 599 ft for northbound traffic and 700 ft for southbound traffic on Auburn-Folsom Road during the AM peak hour. Queue lengths during the PM peak hour are calculated to be 1,402 ft in the northbound direction and 550 ft for the southbound direction, assuming no outbound construction traffic from the Dike 5 site occurs during that time. These delays reflect the minimal traffic flow exiting and entering Bell Drive which will still occur by local residents. There would be no substantial adverse construction-related impacts to transportation and circulation as a result of this added intersection. The turning count movements are included in Figure 3-1 and 3-2 of this EA/IS. The capacity analysis reports are included in Appendix A.

The results of the analysis of a three-way intersection south of Bell Drive identify the intersection to operate at LOS A in the AM peak (7:00 AM-9:00 AM) and LOS A in the PM peak (4:00 PM-6:00 PM) (See analysis in Appendix A). Further, the analysis indicates queue lengths of 618 ft for northbound traffic, and 724 ft for southbound traffic during the AM peak hour. Queue lengths during the PM peak hour are calculated to be 0 ft in the northbound and southbound directions, assuming no outbound traffic occurs during that time. There would be no substantial adverse construction-related impacts to transportation and circulation as a result of this added intersection. The turning movement counts are included in figure 3-3 and figure 3-4 of this EA/IS. The capacity analysis reports are included in Appendix A.

The two potential locations for a signalized intersection of the Dike 5 Construction Access Road and Auburn-Folsom Road would result in minimal impacts to the Level of Service rating; however, the locations of the proposed intersections might have different safety concerns for motorists. The location of the 3-way intersection south of Bell Drive might give approaching drivers somewhat more sight distance, which could potentially increase the safety of the new intersection. Reclamation and Reclamation’s Construction Contractor would be required to work with Placer County to address safety concerns of the proposed intersection.



PEAK HOUR TURNING MOVEMENT VOLUMES (4 LEGGED INTERSECTION)	DATE 02/04/2008	SHEET NO.	LOCATION	ADDENDUM NO.	FIGURE NO.
CDM Camp Dresser & McKee Inc.					3-1

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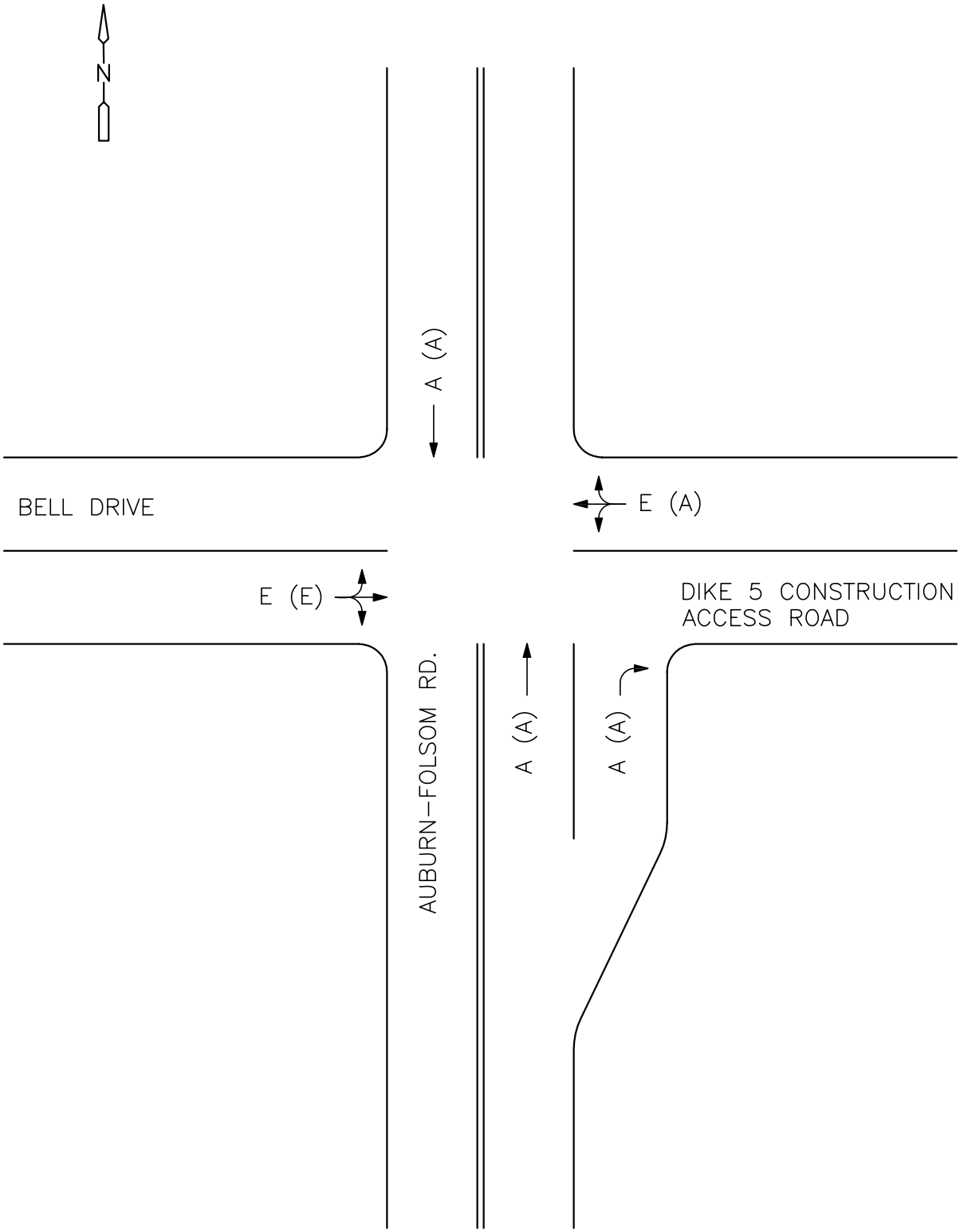

AM (PM)

PEAK HOUR LEVELS OF SERVICE (4 LEGGED INTERSECTION)	DATE 02/20/2008	SHEET NO.	LOCATION	ADDENDUM NO.	FIGURE NO.
CDM Camp Dresser & McKee Inc.					3-2

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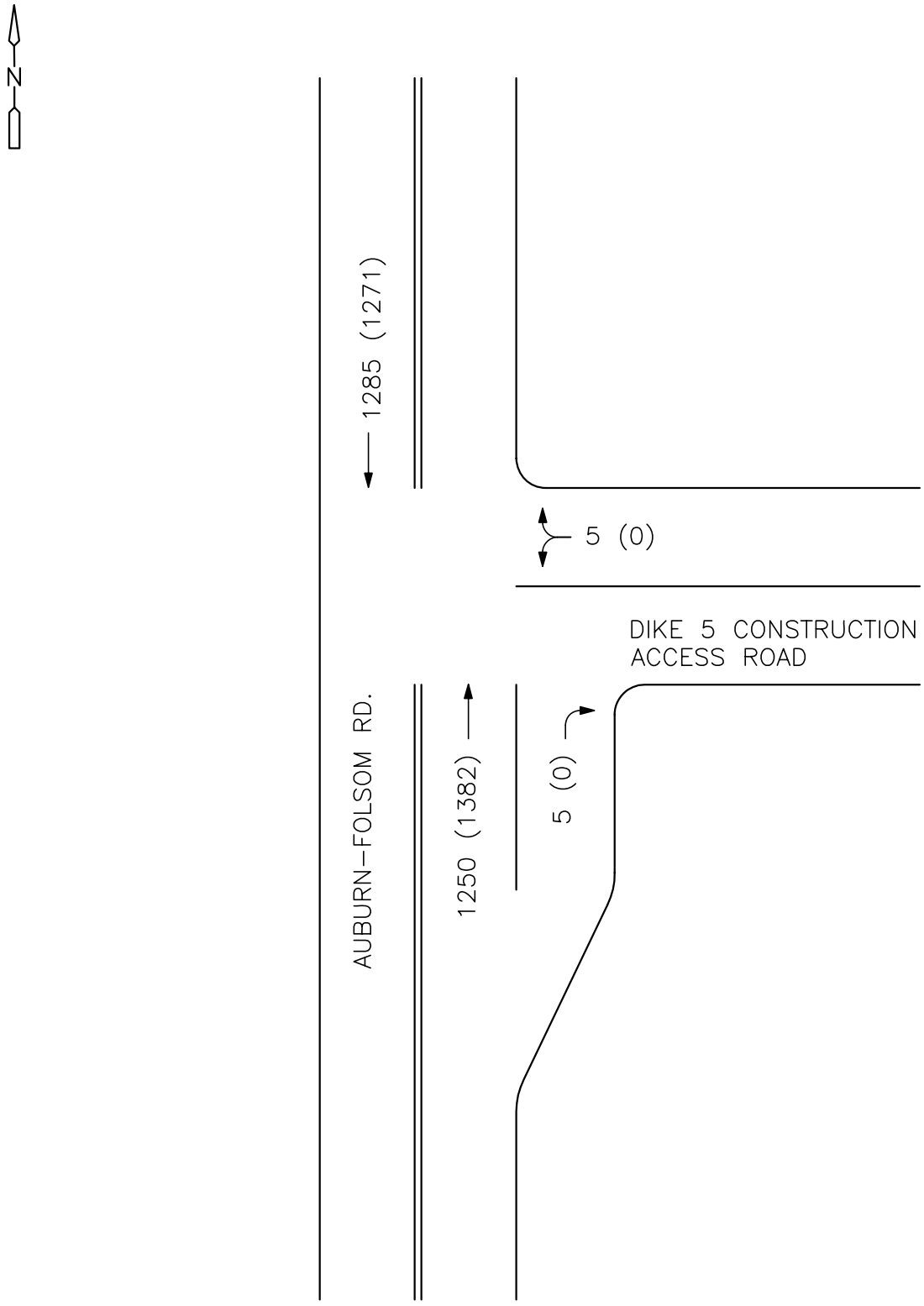

AM (PM)

PEAK HOUR TURNING MOVEMENT VOLUMES (3 LEGGED INTERSECTION)	DATE 02/04/2008	SHEET NO.	LOCATION	ADDENDUM NO.	FIGURE NO.
CDM Camp Dresser & McKee Inc.					3–3

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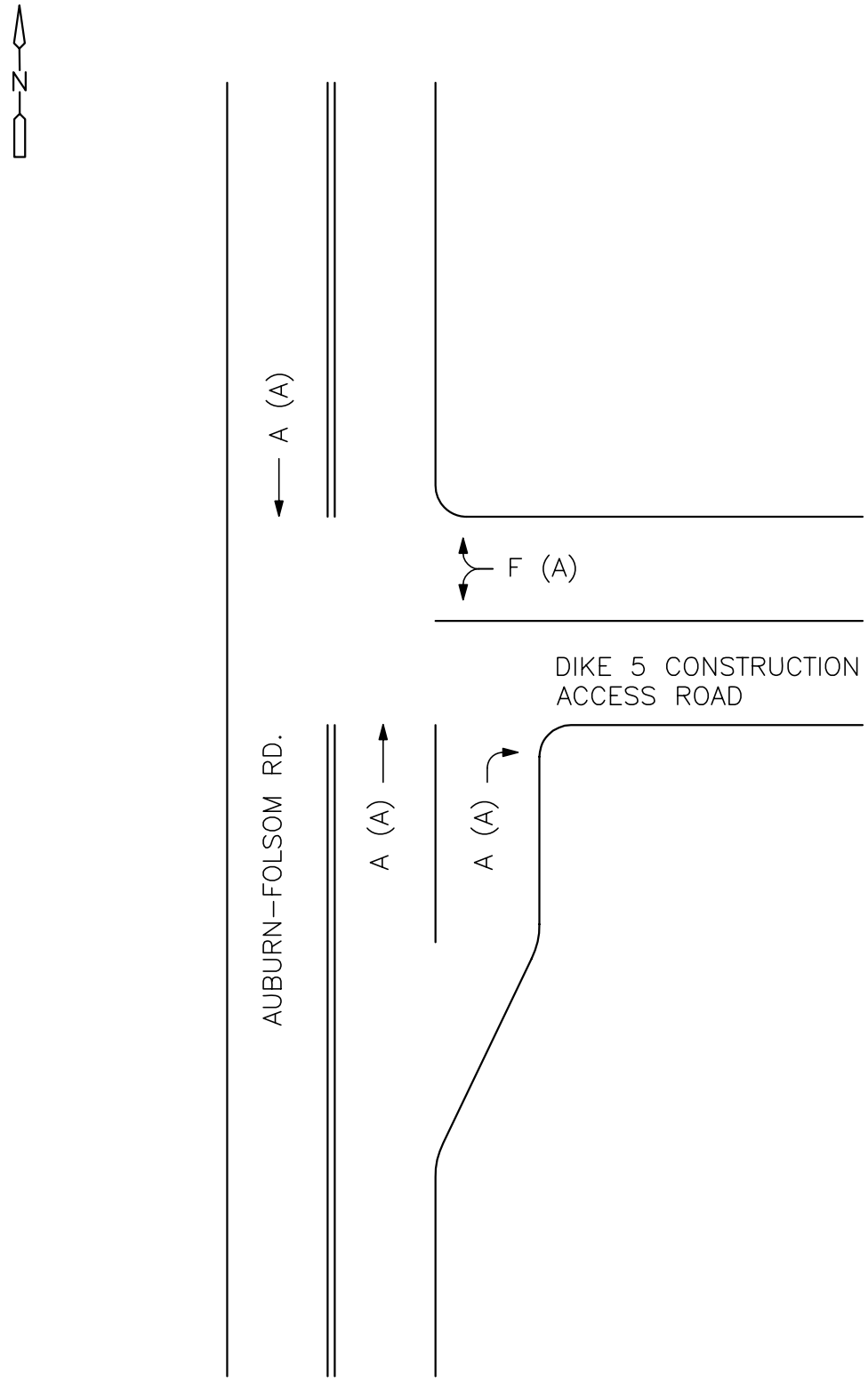

PEAK HOUR LEVELS OF SERVICE (3 LEGGED INTERSECTION)	DATE 02/04/2008	SHEET NO.	LOCATION	ADDENDUM NO.	FIGURE NO.
CDM Camp Dresser & McKee Inc.					3–4

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Dike 5 Construction Access with Flagman

The Proposed Action could include the addition of an access road to the Dike 5 construction site, with a flagman at the intersection of the access road and Auburn-Folsom Road. Construction signs would be posted along Auburn-Folsom Road warning that trucks would be turning onto the highway. Construction and local traffic would be required to follow the instructions of the flagman to allow safe movement of the construction traffic.

Flagmen are generally posted at the intersection of such a proposed entrance, or in advance of the intersection, with one flagman per lane. As with use of a signal, flagmen would only stop traffic on the Auburn-Folsom Road to allow construction-related traffic to leave the construction site. Construction workers would be able to leave and enter the site without the presence of a flagman and utilize middle and right-hand turn out lanes as well as breaks in traffic created by coordinated traffic lights to the north. However, the 40 large haul trucks used during peak construction would require more time to accelerate and decelerate, therefore a flagman would be required from 7AM - 3PM to allow trucks to safely enter and exit the Dike 5 staging area using the access road.

Flagmen would be equipped with high-visibility apparel, and employ Stop/Slow paddles to control traffic. In most situations where flagmen are used, work zone speed reductions are utilized to slow traffic for the safety of the flagmen and vehicular traffic. The speed limit on the Auburn-Folsom Road is currently posted for 50 mph. Construction zone traffic speeds, with flagmen, would need to be lowered to approximately 35 mph. This could slow down traffic and would require the implementation of minimization measures in Section 3.9.3 to reduce impacts.

The Trail Detour is not expected to have any traffic impacts because it would occur on Federal property and would not affect any existing roads.

Cofferdam

The construction of the Cofferdam would require additional material hauling truck trips. During a peak construction period of approximately 45 days, there would be 40 haul trucks entering and exiting the site each day. Trucks would enter the site via the haul route described in the affected environment section above, and as described in the EIS/EIR for East Project Features. Existing traffic volumes for these roads are those calculated for 2009 for the Folsom Dam Project (in table 3.9-88 of the EIS/EIR). An analysis of the additional impact from Cofferdam construction materials is presented below in Table 3-8. The methodology used to determine the impact of the additional Cofferdam construction traffic is the same as that described in the EIS/EIR.

Table 3-8
Cofferdam Traffic Impacts

	*2009 Without Cofferdam**			*2009 With Cofferdam*				
Roadway	***ADT***	***LOS***	***V/C***	***ADT***	***LOS***	***V/C***	***% ADT Increase***	***LOS F V/C Increase***
Scott Road South of White Rock	1,872	A/B		1,912	A/B		2.14	
White Rock Road	9,759	E		9,799	E		0.41	
Scott Road North of White Rock	6,718	D		6,758	D		0.6	
East Bidwell Street	42,071	F	1.12	42,111	F	1.13	0.1	0.01
Oak Avenue Parkway	23,572	C		23,612	C		0.17	
Blue Ravine Road	20,834	D		20,874	D		0.19	
East Natoma Street (Folsom Dam Road to Green Valley Road)	29,465	F	1.0195	29,505	F	1.02	0.14	0

*These values include construction traffic from the Stilling Basin, which would not be constructed until after the completion of the Cofferdam and therefore would not contribute to impacts from construction on the identified roads. Therefore, overall impacts from construction haul trucks could be somewhat less than those calculated.

The above analysis confirms that the Proposed Action would not deteriorate the LOS on any of the roads that would be used by haul trucks. In addition, increases to daily traffic volumes are all less than two percent (with the exception of Scott Road south of White Rock Road; however, this road is rural and lightly used, and would continue to operate at LOS A/B.) In those instances where the road is at LOS F, the volume to capacity (V/C) ratio would not increase more than 0.05%, which is below the threshold of significance. Based on the analysis, and the fact that traffic impacts from the Cofferdam would be temporary, impacts to transportation and circulation from construction of the Cofferdam would be minimal.

3.9.3 Minimization Measures

Minimization measures will include close coordination with Placer County to reduce potential cumulative impacts from the Auburn-Folsom Road Widening Project (see below). In addition, local emergency services will be notified of the temporary traffic light in order prevent unexpected delays in emergency services. The light will be designed to ensure it does not impede emergency vehicles. Appropriate signs will be installed to alert drivers to the new intersection. If flagmen are implemented, heavy truck deliveries to Dike 5 would be restricted to off-peak hours to reduce traffic impacts from slower speeds. If a temporary traffic signal is implemented, the lights at Eureka Road and Fuller Drive would be coordinated to allow appropriate gaps in Auburn-Folsom Road traffic such that construction trucks would have sufficient time to turn in and out of the access road. All measures will be coordinated with Placer County.

3.9.4 Cumulative Effects

The Placer County Road Widening Project on Auburn-Folsom Road would likely overlap with the Proposed Action. However, the portion of the road that Placer County is planning on upgrading in 2008 and 2009 is the South Phase, from County Line to Woodchase Drive, approximately 0.7 miles south of the proposed intersection. The Middle Phase of the project would occur in the area around Dike 5 but the schedule for that construction is currently unknown. Any impacts from this project would not directly overlap with the Proposed Action, and minimization measures applied to each project would prevent cumulative impacts. Reclamation will coordinate with Placer County to reduce any cumulative traffic impacts and will design the intersection to maintain the flow of traffic. With coordination and proper design, the Dike 5 Construction Site Access would not contribute to a substantial cumulative impact on traffic.

Both the Cofferdam and the New Folsom Bridge Project would be constructed in the same vicinity. Traffic required for construction of the Cofferdam would be temporary and would use designated truck routes. Because of the short duration, the Proposed Action is not expected to contribute to any substantial cumulative traffic impacts. If the New Folsom Bridge is completed before work on the Cofferdam begins, the New Folsom Bridge would help to alleviate traffic congestion in the area and further reduce the potential for cumulative impacts.

3.10 Noise

This section presents the affected environment and environmental consequences for noise. The Proposed Action would not result in a permanent source of noise. Therefore, no permanent noise impacts would occur. However, construction noise would be generated and related potential noise impacts have been evaluated in this section.

3.10.1 Affected Environment

The Folsom Reservoir area is a very unique land use and noise setting. The southern portion of the site is more of an urban locale with constant noise generated from the Folsom Prison shooting range and traffic along busy arterial roadways. The area of analysis transitions to a more rural character heading to the north and east of the site where there is less human activity. Therefore, background noise levels are higher at the southern portion of Folsom Reservoir and trend lower as one heads north and east. In addition, there are seasonal variations with the reservoir being an active site for recreational boating and jet and water skis activities during the summer, which tends to increase background noise levels. During the winter months, human and recreational activity is less; therefore, background noise levels tend to be lower.

There are many factors that affect one’s perception of noise. These factors include pitch, loudness and the character of the noise. 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 following terms are typically used in analyzing noise:

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

- L_{max}: The maximum A-weighted sound level during the measurement period.

- L_{dn}: Day-night average level. A 24-hour average L_{eq}, with the addition of 10 dBA to the sound level during the hours of 10:00 p.m. to 7:00 a.m. to account for greater noise sensitivity of people at night.

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

It is widely accepted that most human sound perception can barely detect a change in sound level of 3 dBA (California Department of Transportation 1998).

The existing noise conditions in the area, including the regulatory framework, were characterized in detail in the Folsom DS/FDR EIS/EIR. In general, the major source of noise in the project area is motor vehicle traffic on Auburn-Folsom Road. Additional noise sources include local construction activities and noise from boating and other recreation activities, primarily in the summer.

Currently, with the initiation of the Folsom DS/FDR Project, Reclamation is implementing a Noise Control Plan with mitigation measures accepted in the RODs and NOD.

3.10.2 Environmental Consequences

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

3.10.2.1 No Action Alternative

Dike 5 Construction Site Access and Trail Detour

Without the Dike 5 Construction Site Access, noise impacts from construction traffic would still occur, but they would occur at the Beal's Point entrance rather than at Dike 5. Without the Trail Detour, the noise levels on the downstream side of the dikes would not change from the affected environment.

Cofferdam
There would be no change to the affected environment.

3.10.2.2 Proposed Action
None of the activities under the Proposed Action would have appreciable impacts to noise levels. Any minimal noise impacts are discussed below.

Dike 5 Construction Site Access and Trail Detour
Potential sources of noise impacts from the proposed Dike 5 Construction Site Access include both onsite construction noise sources and transportation-related noise sources from construction workers, visitors and deliveries. Onsite dike construction noise and area-wide construction traffic noise were evaluated in the Folsom DS/FDR EIS/EIR. This assessment evaluates only the transportation-related noise associated with use of the new proposed construction access road to Dike 5 from Auburn-Folsom Road.

Transportation-related noise sources would consist of trucks hauling materials to Dike 5 via the new construction access road and construction worker, visitor and delivery vehicles. According to the traffic analysis, the volume of traffic generated by these sources would be very low in relation to existing traffic volumes on Auburn-Folsom Road. Because it takes a doubling of traffic to increase noise levels by 3 dBA[4], the threshold of detectability, the noise generated by this short-term, relatively low volume of traffic would increase noise levels in the project area by considerably less than 3 dBA, and, therefore, would have imperceptible noise impacts. In future years, the Dike 5 construction staging area is proposed to be used for Dike 4 and 6 construction also. Noise impacts from this future construction-related use of the Dike 5 site access road are anticipated to be imperceptible, similar to that of the Dike 5 construction.

If the onsite dike construction noise analyzed in the Folsom DS/FDR EIS/EIR is considered in conjunction with the increases from transportation related noise sources, the overall increase in noise levels would still be minimal. As described in the SOD and JFP RODs, the Folsom DS/FDR agencies would:

- Incorporate the appropriate level of sound attenuation on equipment or near facilities that will attenuate sound at sensitive receptors to comply with local noise ordinances. Maintain equipment to comply with noise standards (e.g., exhaust mufflers, acoustically attenuating shields, shrouds, or enclosures).

- Enclose above-ground conveyor systems in acoustically-treated enclosures, if necessary;

[4] Source: (California Department of Transportation 1998).

- Line or cover hoppers, conveyor transfer points, storage bins and chutes with sound-deadening material; and

- Schedule truck loading, unloading, and hauling operations so as to reduce nighttime noise impacts to comply with local noise ordinances.

The Proposed Action would also incorporate the measures above, when appropriate. Overall, the Folsom DS/FDR construction activities and the traffic related noise from the Proposed Action would be unlikely to contribute to a substantial increase in noise.

The Trail Detour alignment parallels Auburn-Folsom Road, a major thorough fare with heavy vehicular and truck traffic. Any noise produced during the brief construction period would be masked by the ambient noise levels and not apparent to residences across the road. No substantial adverse noise impacts are anticipated during construction of the Dike 5 Construction Site Access and Trail Detour.

Cofferdam
Although construction and demolition of the Cofferdam would produce some noise, it would be in a location remote from sensitive receptors. Additionally, this noise would be masked by other noise from construction of the authorized project. The Auxiliary Spillway would likely be excavated at the same time the Cofferdam would be constructed. Because of the remote location and the other construction activities that would be producing noise, no substantial noise impact is predicted with construction of the Cofferdam.

3.10.3 Cumulative Effects

The Folsom DS/FDR EIS/EIR evaluated the potential cumulative noise impacts from nearby projects (such as the Folsom Bridge Project) anticipated to be occurring at the same time and found that, with the proposed inclusion of mitigation measures, the combined impact of concurrent projects is expected to be minimal. The Auburn-Folsom Road Widening Project may be under construction in the area of Dike 5 at the same time as the Proposed Action. Construction noise from the Road Widening Project was evaluated in the Auburn-Folsom Road Widening EA/EIR and the anticipated noise impact was found to be minimal with the implementation of recommended mitigation measures. Since the proposed Dike 5 Construction Access Road does not add construction traffic to the cumulative noise impact evaluation but simply moves the location of one of the construction access roads that was previously evaluated, the cumulative noise impact of the Dike 5 construction access road and any concurrent construction on Auburn-Folsom Road is anticipated to be minimal.

In addition, noise impacts from construction of the Trail Detour would be minor and temporary, and to some degree buffered by surrounding vegetation. For these reasons

noise from the construction of the Trail Detour would not likely have a cumulative impact when considered with the noise that would be produced during the Auburn-Folsom Road Widening Project.

The construction of the Cofferdam would overlap with nearby construction for the Folsom Bridge Project. However, both the Cofferdam and Folsom Bridge Project are located away from sensitive noise receptors, and the minimal, temporary impacts from this noise, would not likely contribute to cumulative impacts.

3.11 Cultural Resources

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

3.11.1 Affected Environment

The affected environment for cultural resources is included herein by reference to the Folsom DS/FDR EIS/EIR. Portions of the Dike 5 Construction Site Access and Trail Detour were previously surveyed for cultural resources as part of the Folsom Dam DS/FDR EIS/EIR (Bartoy et al. 2007: 19-28).Two historic resources are recorded within current Dike 5 Trail Detour Area of Potential Effects (APE) (Bartoy et al. 2007). The recorded portion of CA-SAC-945H is a concrete intake and above-ground pipe support for a “Siphon” connected to the Rose Springs Ditch (Welch 2005a; Bartoy et al 2006a; Jones and Schrader 2007a). This portion of the resource was evaluated as part of the Folsom Dam DS/FDR EIS/EIR and found to be ineligible for listing on the National Register of Historic Places (NRHP). CA-SAC-944H is an unidentified concrete feature and associated trash scatter (Welch 2005b; Bartoy et al. 2006b; Jones and Schrader 2007b) that was also found ineligible for listing on the NRHP as part of the Folsom Dam DS/FDR EIS/EIR (Bartoy et al. 2007). The California State Historic Preservation Officer (SHPO) concurred with these determinations by letter dated November 2, 2007.

The Cofferdam Area was previously surveyed as part of the Folsom Bridge Project (Corps 2004). Survey and archival research identified no resources in the Cofferdam or in the Dike 5 Construction Site Access APE (Bartoy et al. 2007: Table 2; Corps 2006: 3-4).

In February of 2008, an archaeological survey was conducted for unsurveyed portions of the Dike 5 Trail Detour (Jones 2008). Using a Geographic Information Systems (GIS) shapefile of the Dike 5 Trail Detour provided by the Bureau of Reclamation (Reclamation) and the on-the-ground flagging, Pacific Legacy archaeologists navigated the trail corridor and completed a full pedestrian survey of the Dike 5 Trail Detour APE and a 30 meter buffer on either side of the marked trail centerline. Eight historic cultural resources were noted. Two of these, CA-SAC-944H and CA-SAC-945H, had been previously recorded, as mentioned above. The remaining six resources include four earthen trenches, one non-linear depression, and

an unnamed u-shaped ditch. The named Rose Springs Ditch and associated features were also noted and were recorded as a continuation of CA-SAC-945H. As a result of this survey, six newly discovered resources were recorded.

3.11.2 Environmental Consequences

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

3.11.2.1 No Action Alternative

Dike 5 Construction Site Access and Trail Detour

There would be no change to the affected environment.

Cofferdam

There would be no change to the affected environment.

3.11.2.2 Proposed Action

Dike 5 Construction Site Access and Trail Detour

No cultural resources are located within the Dike 5 Construction Site Access area. Within and adjacent to the Trail Detour, six previously undiscovered cultural resources were recorded during the survey and two known resources, CA-SAC-944H and CA-SAC-945H, were revisited and site records updated. The Trail Detour APE would be approximately 5 to 6 ft wide and constructed of Native Material. The archaeological survey width for the Trail Detour is substantially wider, 30 meters on either side of the trail centerline.

CA-SAC-944H is a board-molded concrete feature and associated historic debris scatter within the Dike 5 Trail Detour APE. It was previously recorded as part of the Folsom Dam DS/FDR EIS/EIR and found ineligible for listing on the NRHP (Bartoy et al. 2007). No further management consideration is required.

CA-SAC-945H (PL-1828-02) comprises a portion of the Rose Springs Ditch and associated siphon structure. The siphon portion of the resource was identified previously and was found to be ineligible for listing on the NRHP as part of the Folsom Dam DS/FDR EIS/EIR investigations (Bartoy et al. 2007). The current survey identified additional segments of the ditch, a concrete intake at the beginning of the ditch, an embankment to the west, and a small auxiliary ditch to the west of the main ditch channel. These structures were given the temporary field number PL-1828-02. The Folsom CA 7.5' United States Geological Survey (USGS) map indicates that PL-1828-02 and the previously recorded CA-SAC-945H are contiguous portions of the Rose Springs Ditch. Reclamation now believes that this entire segment of the Rose Springs Ditch is not eligible for inclusion in the NRHP. Reclamation will consult with SHPO to seek their concurrence in compliance with the 36 Code of Federal Regulations (CFR) Part 800 regulations that implement section 106 of the National Historic Preservation Act (NHPA).

PL-1828-01 consists of two historic earth trenches spaced approximately 50 feet apart. The southwestern trench measures 16 feet long, 9 feet wide and 3 feet deep. The northeastern trench measures 9 feet long, 5 feet wide and 2.5 feet deep. Both trenches are located within the survey buffer approximately 3.5 meters (11 ft) east of the marked Trail 5 Detour APE centerline and can be avoided by the Proposed Action.

PL-1828-03 is a historic earthen trench with rock and earth berms to either side. It measures approximately 55 feet long, 1-2 feet wide and 1 foot deep. Several small mounds of excavated dirt are also located around the trench. The resource is located within the survey buffer approximately 15 meters (49 ft) south of the Dike 5 Trail Detour APE centerline and can be avoided by the proposed project.

PL-1828-04 is a historic earthen trench with a berm on its western edge. The trench is ephemeral and difficult to detect without noting the berm/push-pile. It is oriented generally north -south and is 31 feet long, 3 feet wide, and 1-1.5 feet deep. It is entirely of earthen construction and few rocks were noted in the vicinity. The trench is located within the survey buffer approximately 30 meters (98 ft) southeast of the Dike 5 Trail Detour APE centerline and can be avoided by the proposed project.

PL-1828-05 is a historic earthen trench that is partially rock-lined with medium sized (2-12 inch) granitic boulders. There is a single berm on the south side of the trench. It is oriented generally east-west and measures approximately 20 feet long, 2 feet wide and 1 foot deep or less. Ground inspection of the ditch indicates that it is directly adjacent to (approximately 3 ft west of) the Dike 5 Trail Detour centerline. Data collected with the Trimble Geo XT, when compared to the shapefiles provided by Reclamation, indicate that the ditch crosses the Dike 5 Trail Detour centerline and extends less than half a meter (1.5 ft) to the east of the trail. It then continues approximately 5 meters (18 ft) west, according to Global Positioning System (GPS) data. Reclamation believes that this is not eligible for inclusion in the NRHP. Reclamation will consult with SHPO to seek their concurrence in compliance with the 36 CFR Part 800 regulations that implement section 106 of the NHPA.

PL-1828-06 is a historic u-shaped ditch that is rock-lined in parts. It measures from 2-4 feet wide and 1-2 feet deep. It meanders across a downhill slope on an approximate northwest-southeast orientation for approximately 360 feet. The ditch terminates at its southeast end at the base of slope. Upslope, its termination is difficult to detect as it becomes more ephemeral to the north and west. The ditch crosses the Dike 5 Trail Detour APE. The ditch would be affected by the current Trail Detour location. Reclamation believes that this is not eligible for inclusion in the NRHP. Reclamation will consult with SHPO to seek their concurrence in compliance with the 36 CFR Part 800 regulations that implement section 106 of the NHPA.

PL-1828-07 is an isolated historic earthen depression. It is bowl-shaped, approximately 6 feet in diameter at the top and 3-4 feet deep with a grassy bottom. Pushed earth is visible on its margins. The depression is located 8 meters (26 ft) west of the Dike 5 Trail Detour APE centerline and can be avoided by the proposed project.

The project areas associated with the Dike 5 Construction Site Access and Trail Detour have been subject to cultural resources survey and inventory. The cultural resources identified would either be avoided by shifting the Trail Detour, or they have been considered ineligible for listing by Reclamation. Reclamation will consult with SHPO to seek their concurrence in compliance with the 36 CFR Part 800 regulations that implement section 106 of the NHPA. No minimization measures would be required for the Dike 5 Construction Site Access and Trail Detour.

Cofferdam

The Cofferdam APE was previously surveyed as part of the Folsom Bridge Project (Corps 2004). Survey and archival research identified no historic properties in the Cofferdam APE (Corps 2006: 3-4).

3.11.3 Cumulative Effects

The proposed Dike 5 Construction Site Access, Trail Detour and Cofferdam would not result in cumulative effects as no historic properties were found to be within the APE.

3.12 Land Use, Planning, and Zoning

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

3.12.1 Affected Environment

The entire area around Folsom Reservoir is owned by Reclamation and leased to DPR. Reclamation and DPR are currently developing the Folsom Lake State Recreation Area (FLSRA) General Plan and Resource Management Plan Update. The portion of Auburn-Folsom Road in the affected area is under the jurisdiction of Placer County.

3.12.2 Environmental Consequences

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

3.12.2.1 No Action Alternative

Dike 5 Construction Site Access and Trail Detour

There would be no change from existing conditions.

Cofferdam
There would be no change from existing conditions.

3.12.2.2 Proposed Action
Dike 5 Construction Site Access and Trail Detour
Auburn-Folsom Road along Dike 5 is owned and maintained by Placer County. Construction of a traffic light and turning lanes would require an encroachment permit from Placer County. Reclamation and their Construction Contractor would obtain the appropriate permit and would adhere to conditions stipulated in the permit. The traffic light and turning lanes would be constructed to meet Placer County design and safety standards. Auburn-Folsom Road would be restored to pre-construction conditions after work on the dikes is complete. This would not change any land use or zoning.

Reclamation would coordinate with DPR to ensure the location of the Trail Detour would be consistent with the FLSRA General Plan and Resource Management Plan.

Cofferdam
The Cofferdam would not result in any impacts to land use, planning, and zoning.

3.12.3 Cumulative Effects
Placer County is planning on widening Auburn-Folsom Road beginning in 2008, around the same time as construction is scheduled to begin on Dike 5. The Dike 5 work would take place north of Phase 1 of the Road Widening Project and is therefore not expected to lead to any cumulative impacts to land use, planning, or zoning.

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

3.13.1 Affected Environment
The FLSRA is one of the most popular recreation sites within California in the DPR system. The FLSRA area consists of Folsom Reservoir, including marinas, boat launching facilities, whitewater rafting facilities, and terrestrial facilities, including campgrounds, day use facilities, other facilities (i.e., Folsom Dam, the California State University Sacramento Aquatic Center at Nimbus Flat), and numerous multi-purpose trails. Throughout the year, permitted special events are held at various locations in the FLSRA. Events include bass fishing tournaments, yacht races, mountain bike races, triathlons, mountain bike triathlons, adventure races, running races, and summer camps.

Although FLSRA does not track the annual number of trail users, overall annual park usage has averaged approximately 2 million visitors over the past 10 years (Griffith 2008). All trails in the FLSRA, including those on Dikes 4, 5, and 6, are used extensively throughout the seasons. Existing trails on Dikes 4, 5, and 6 accommodate pedestrian, bicycle, and equestrian users (Griffith 2007). Trails on the downstream side of the dikes include the Pioneer Express Trail and other unimproved multi-use trails. No recreation facilities exist in the area below Folsom Dam as this area is not open to the public.

3.13.2 Environmental Consequences

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

3.13.2.1 No Action Alternative

Dike 5 Construction Site Access and Trail Detour

Under the No Action Alternative, a trail detour would not be constructed. The trails on the tops of the dikes would be closed to the public while construction occurs to upgrade the filter and shell material of the dikes. Some trail users would not be able to navigate around Dikes 4, 5, and 6 because the existing trails are unimproved and do not accommodate all types of trail users. Some trail users may decide to make their own trails or use trails not designated for their type of recreation. This could lead to environmental impacts and could cause conflicts on existing trails.

Cofferdam

There would be no change to the affected environment.

3.13.2.2 Proposed Action

Dike 5 Construction Site Access and Trail Detour

The Dike 5 Construction Site Access could affect recreation because large construction vehicles and equipment would be operating and would make it difficult for trail users to move between Beal's Point and Mooney Ridge. The Trail Detour described below and the associated safety measures that would be implemented would help maintain recreation when the Dike 5 Construction Site Access is in use.

A Trail Detour would be established around the staging areas and construction zones of Dikes 4, 5, and 6 to keep a continuous stretch of trail available to recreation users throughout construction. Reclamation's Recreation Management Partner would be responsible for managing the Trail Detour with the exception of the portion that crosses through the Dike 5 area. The proposed location for the Trail Detour is shown on Figure 2-2 in Chapter 2. The temporary Trail Detour would connect a series of existing unimproved trails, which would be cleared, and widened to serve combined pedestrian, bicycle, and equestrian use around Dikes 4, 5, and 6. Throughout construction, this Trail Detour would be the only access for travel between Beal's Point and Mooney Ridge. During construction at each dike, which is planned in a

phased manner, the crest-top trails and trails along the toes will be closed to accommodate construction work and vehicle access. The trails on top of the dikes would be re-opened to the public after construction is complete. Existing trails along the downstream sides of Dikes 4 and 6 outside the construction zones will remain open throughout construction, but they are unimproved and are not suitable for all types of recreation users. The Trail Detour would not impact any other existing recreation facilities. Because this would allow a continuous stretch of trail to remain open to all users during construction, the Trail Detour is expected to help maintain recreation throughout construction.

The Trail Detour would intersect truck traffic entering the staging area at Dike 5. Trail users could be concerned about impacts to their recreational experience from potential safety issues. Reclamation and their Construction Contractor would:

- Post signs to identify the Trail Detour and any trails closed during construction;
- Erect fences and post signs in construction zones to keep the public out of any dangerous areas; and
- Use flag men to help recreation users cross the Dike 5 area and avoid construction traffic.

With implementation of the safety measures described above, recreation impacts from the Dike 5 Construction Site Access would be minimal. Trail Detour would help maintain recreation throughout construction and would provide a safe way to navigate between Beal's Point and Mooney Ridge.

Cofferdam
There would be no recreation impacts from construction of the Cofferdam.

3.13.3 Cumulative Effects

Although a trail detour was required for construction of the New Folsom Bridge, it is not in the same vicinity as the Trail Detour for the Proposed Action. The Auburn-Folsom Road Widening Project would not affect any trails. No cumulative effects would occur from the Proposed Action as no additional projects would affect recreation downstream of Dikes 4, 5, and 6.

3.14 Public Services and Utilities

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

3.14.1 Affected Environment

Although Reclamation owns the land, the FLSRA is currently leased to and managed by DPR. All recreation within FLSRA, including the trails, are managed and maintained by DPR.

3.14.2 Environmental Consequences

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

3.14.2.1 No Action Alternative

Dike 5 Construction Site Access and Trail Detour

There would be no change to the affected environment.

Cofferdam

There would be no change to the affected environment.

3.14.2.2 Proposed Action

Dike 5 Construction Site Access and Trail Detour

A temporary traffic light at Dike 5 would require electricity to operate. This is not expected to have any impacts to existing electricity users and would require a minimal amount of electricity to operate. The traffic light would only be temporary and would be removed after construction of the dikes is complete.

Operation of a temporary traffic light on Auburn-Folsom Road at Dike 5 would mean that fire, police, and other emergency vehicles would have a new light to circumnavigate during emergencies. Reclamation and the Construction Contractor would notify the appropriate authorities of the temporary traffic light and would design the light to ensure it does not impede any emergency vehicles.

The Trail Detour would create an improved recreation trail at FLSRA. Reclamation's Recreation Management Partner would manage and maintain the Trail Detour until the close of construction, with the exception of the portion that crosses over the Dike 5 access road and staging area. The Trail Detour would temporarily replace an existing trail that would be closed during construction and is not expected to require any new public services or staff at FLSRA. The Trail Detour would not affect any existing public utilities.

Cofferdam

Construction of the Cofferdam would not affect any existing utilities or public services.

3.14.3 Cumulative Effects

The only cumulative project within the vicinity of the Dike 5 area that could have utility and public services impacts would be the Auburn-Folsom Road Widening

Project. This project is not expected to impact FLSRA services or any existing utilities. The Proposed Action, in consideration with the Auburn-Folsom Road Widening Project, would be unlikely to contribute to any cumulative effects to public services and utilities.

3.15 Public Health and Safety

This section presents the affected environment and environmental consequences for public health and safety.

3.15.1 Affected Environment

Reclamation's Construction Contractor has developed and implemented appropriate Worker Health and Safety Plans and Hazardous Materials Management Plans for Phase 1 activities of the Folsom DS/FDR Project. Reclamation has posted signs throughout the FLSRA to provide the public with information and updates on the project under construction.

3.15.2 Environmental Consequences

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

3.15.2.1 No Action Alternative

Dike 5 Construction Site Access and Trail Detour

Under the No Action Alternative, the Trail Detour would not be constructed. Recreation users would be left to their own devices to navigate around Dikes 4, 5, and 6 during construction. Without a Trail Detour, it is expected that some recreation users would try to cross through construction zones. Large construction equipment and vehicles would be operating within these construction zones and could pose a threat to public health and safety. Trail users seeking to navigate around the Dike 5 construction and staging area could also choose to use the shoulder of Auburn-Folsom Road, which would increase the chance for vehicle-related injuries or accidents.

Cofferdam

There would be no change to the affected environment.

3.15.2.2 Proposed Action

Dike 5 Construction Site Access and Trail Detour

Truck traffic turning off Auburn-Folsom Road into Dike 5 would cross over a portion of the proposed Trail Detour. As discussed in Section 3.13, this could pose a safety risk to trail users. The measures described above for recreation, including posting of signs, construction of fences, and the use of flagmen, would maintain public safety.

The use of flagmen on Auburn-Folsom Road to direct traffic into the Dike 5 area could pose a safety risk to the flagmen and approaching vehicles. Traffic along Auburn-Folsom Road travels at high speeds and the proposed flagmen would be positioned on a potentially blind curve. Reclamation and the Construction Contractor would follow all safety standards and use flagmen with appropriate safety training. Signs would be posted to alert drivers and to construction traffic and flagmen up ahead. Lower speed limits would be enforced, as necessary, to slow down vehicles before they approach the flagmen. Flashing lights may be installed for additional visual warnings. Implementation of these measures and the use of trained flagmen would reduce the safety risks to the flagmen and vehicles using Auburn-Folsom Road.

During construction for the Dike 5 access, materials for paving asphalt would be temporarily handled on-site. The small quantity required to pave the turning lanes and haul road is unlikely to require storage for more than several days. No permanent hazardous materials would be stored on-site.

Work on the Trail Detour would occur in an area with grasslands and other vegetation with a fire threat is considered moderate to high. Private residences and other buildings are present across Auburn-Folsom Road and in the Mooney Ridge and Granite Bay area directly adjacent to Folsom Reservoir. The operation of construction vehicles in the dry vegetation could ignite fires and could pose a safety risk to existing residences. Appropriate fire suppression tools would be kept on-site during the dry months when the fire risk is high. The construction vehicles would be kept on existing dirt trails or in areas without vegetation to reduce the risk of fires. These measures would adequately address the fire hazard during construction.

Cofferdam

The purpose of the Cofferdam is to keep the Stilling Basin area dry from American River flows (ie releases from Folsom Reservoir) and to protect the workers during construction of the Stilling Basin. This would allow work to continue year-round and would ensure worker safety during releases from Folsom Dam. This would be beneficial for worker health and safety.

Construction of the Cofferdam for the Stilling Basin could require the temporary use, storage, and transport of hazardous materials for vehicles and equipment. This is unlikely to pose a threat to the public because there are no residences in the vicinity and no recreation is allowed in the area. With the development and implementation of a Worker Health and Safety Plan and a Hazardous Materials Management Plan this is not expected to pose a health risk to construction workers.

3.15.3 Cumulative Effects

The New Folsom Bridge Project would also have the potential for health and safety impacts and would be constructed at the same time and in the same general areas as

the Cofferdam. However, 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. In addition, Reclamation and the Corps are working together to coordinate their ongoing projects near the Folsom Facility. Overall, with the implementation of a Worker Health and Safety Plan, and Hazardous Materials Management Plan, the Proposed Action is not expected to contribute to cumulative public health and safety impacts.

Phase 1 of the Auburn-Folsom Road Widening Project is expected to overlap with work on Dike 5 but would occur south of the Dike 5 area. Reclamation would coordinate with Placer County throughout construction to help maintain safety. Both agencies would implement appropriate safety measures such as warning signs, reduced speed limits, and appropriate worker safety training. With adequate coordination and safety training, the Proposed Action is not expected to contribute to any health and safety impacts to workers, the public, or vehicles along Auburn-Folsom Road.

3.16 Minimization Measures Incorporated into the Project

Based on the above NEPA analysis, the following minimization measures will be incorporated into the project to reduce or avoid all project-related environmental effects:

Air Quality

Reclamation and the Construction Contractor will submit a plan for approval by SMAQMD, demonstrating that the heavy-duty off-road vehicles will achieve a project-wide fleet average 20 percent NOx reduction and 45 percent particulate reduction. The plan will also have to include an inventory of all off-road construction equipment equal to or greater than 50 horsepower that will be used an aggregate of 40 or more hours during any portion of the project. Reclamation and the Construction Contractor will also have to demonstrate conformity with NOx thresholds, apply fugitive dust control on roadways, processing plants, and concrete batch plants and obtain power for construction facilities from the electric utility grid rather than diesel-driven generators and pumps. The Construction Contractor will be encouraged to seek additional control measures as part of emissions offsets.

The above analysis estimates that project-wide emissions from the Cofferdam and ongoing operations related to the overall Folsom DS/FDR would exceed 85 pounds per day. Such operational impacts were previously addressed in the Folsom DS/FDR EIS/EIR and, as described therein, a mitigation fee will be paid to SMAQMD's mitigation fund for any excess emissions. Emissions from the Cofferdam will be offset with the appropriate payment of this mitigation fee.

Transportation and Circulation
Minimization measures will include close coordination with Placer County to reduce potential cumulative impacts from the Auburn-Folsom Road Widening Project (see below). In addition, local emergency services will be notified of the temporary traffic light in order prevent unexpected delays in emergency services. The light will be designed to ensure it does not impede emergency vehicles. Appropriate signs will be installed to alert drivers to the new intersection. If flagmen are implemented, heavy truck deliveries to Dike 5 would be restricted to off-peak hours to reduce traffic impacts from slower speeds. If a temporary traffic signal is implemented, the lights at Eureka Road and Fuller Drive would be coordinated to allow appropriate gaps in Auburn-Folsom Road traffic such that construction trucks would have sufficient time to turn in and out of the access road. All measures will be coordinated with Placer County.

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Chapter 4
CEQA Evaluation

This Chapter presents the California Environmental Quality Act (CEQA) Initial Study evaluation of the Proposed Project.

4.1 Introduction

This document is a joint Supplemental Environmental Assessment/Initial Study (EA/IS) to the Folsom Dam Safety and Flood Damage Reduction (DS/FDR) Final Environmental Impact Statement/Environmental Impact Report (EIS/EIR) (March 2007), and satisfies the requirements of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). This Supplemental EA/IS has been prepared by the U.S. Department of the Interior, Bureau of Reclamation (Reclamation), the U.S. Army Corps of Engineers (Corps), and the Corps non-Federal sponsors, the Central Valley Flood Protection Board (CVFPB)[1] and the Sacramento Area Flood Control Agency (SAFCA). Reclamation is the NEPA lead agency for this document; CVFPB is the CEQA lead agency.

Agency	***NEPA/CEQA Role***
Bureau of Reclamation	NEPA Lead Agency
U.S. Army Corps of Engineers	Cooperating Agency under NEPA
Central Valley Flood Protection Board	CEQA Lead Agency
Sacramento Area Flood Control Agency	Responsible Agency under CEQA

The purpose of this Supplemental EA/IS is to describe and analyze the effects of construction actions and refinements to the project since the completion of the Folsom DS/FDR Final EIS/EIR. The Folsom DS/FDR Project, as approved and authorized, is currently under construction. The actions proposed in this EA/IS are existing components of the authorized project currently underway and have been defined to a greater level of detail than was available at the time of the Folsom DS/FDR EIS/EIR. This document does not change the project originally described in the Joint Federal Project (JFP) Record of Decision (ROD) and Safety of Dams (SOD) ROD, but proposes refinements and clarifications to certain project actions that require further environmental analysis. The Supplemental EA/IS identifies and evaluates certain site specific actions. The results of this Supplemental EA/IS will provide the basis for determining whether a Finding of No Significant Impact (FONSI)/Negative Declaration (ND) can be issued or if additional environmental review such as an EIS/EIR is required.

[1] Formerly known as the Reclamation Board of the State of California.

4.2 Environmental Checklist Form

1. **Project title:**
   Supplemental Environmental Assessment/Initial Study to the Folsom Dam Safety and Flood Damage Reduction Final Environmental Impact Statement/Environmental Impact Report

2. **Lead agency name and address:**
   CEQA:
   Central Valley Flood Protection Board
   Department of Water Resources
   Division of Flood Management
   3310 El Camino Ave. Room LL40
   Sacramento, CA 95821

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

3. **Contact person and phone number:**
   CEQA:
   Annalena Bronson
   Staff Environmental Scientist
   Department of Water Resources
   Division of Flood Management
   3310 El Camino Ave. Room 140
   Sacramento, CA 95821

   NEPA:
   Elizabeth Ayres Vasquez
   Natural Resources Specialist
   Bureau of Reclamation
   Central California Area Office
   7794 Folsom Dam Road
   Folsom, CA 95630

4. **Project location:**
   Folsom Reservoir in Sacramento and Placer Counties

5. **Project sponsor's name and address:**
   Central Valley Flood Protection Board
   Department of Water Resources
   Division of Flood Management

3310 El Camino Ave. Room LL40
Sacramento, CA 95821

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

7. **Zoning:**
Not Applicable

8. **Description of project:** (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheets if necessary.)

There are three main aspects of the Proposed Project addressed within this EA/IS:

- A Trail Detour that would provide safe passage for hikers, pedestrians, and bicyclists normally using the existing trail that occurs on the tops of Dikes 4, 5, and 6.
- Dike 5 Construction Site Access with flagmen or a temporary traffic light, turn-in and turn-out lanes; and
- Construction details on the Cofferdam for the JFP Auxiliary Spillway Stilling Basin.

In conjunction with the above, a change in the schedule for work on Dike 5 is proposed. See Chapter 2 of this Supplemental EA/IS for additional details.

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

The location for Proposed Project addressed in this Supplemental EA/IS includes the area surrounding Folsom Reservoir that falls within Placer and Sacramento Counties. No actions addressed in this Supplemental EA/IS would occur in El Dorado County. The study area mainly consists of Federally-owned lands that are currently leased to and managed by the California Department of Parks and Recreation (DPR).

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

    CVFPB – CEQA lead (Cofferdam)
    SAFCA – Corps local sponsor (Cofferdam)
    U.S. Environmental Protection Agency – Air Quality Conformity (Dike 5 Change in Schedule)
    Sacramento Metropolitan Air Quality Management District (SMAQMD) – Air Quality (Cofferdam)
    Placer County Air Pollution Control District (PCAPCD) – Air Quality (Dike 5 Change in Schedule)
    State Water Resources Control Board – National Pollutant Discharge Elimination System (NPDES) Permit (Dike 5 Construction Site)
    Placer County – Encroachment Permit (Dike 5 Construction Site Access)
    U.S. Fish and Wildlife Service (USFWS) – Section 7 Consultation, Fish and Wildlife Coordination Act Report

4.3 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	

4.4 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.

Signature	Date
Printed Name	For

4.5 Evaluation of Environmental Impacts

This section presents the evaluation of environmental impacts for the CEQA analysis. The following abbreviations are used:

NI – No Impact

LTS – Less Than Significant

LTSWM – Less Than Significant With Mitigation

B - Beneficial

In the discussion that follows each portion of the checklist, the issue analysis particular to each of the three main components of the Project is delineated using an alphanumeric index based on Project component and environmental topic. For example, the discussion below of "1.c)" addresses the issue of whether the Trail Detour would substantially degrade the existing visual character or quality of the site and its surroundings.

AESTHETICS	1 Trail Detour	2 Dike 5 Construction Site Access	3 Cofferdam
I. AESTHETICS -- Would the project:			
a) Have a substantial adverse effect on a scenic vista?	NI	NI	NI
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	NI	NI	NI
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	LTS	LTS	LTS
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	NI	LTS	NI

1-3.a,b) None of the activities would affect any existing scenic vistas. No scenic highways are designated in the area.

1&3.d) The Trail Detour and Cofferdam would not create any new source of light.

1.c) The Trail Detour would alter the visual character of the area, but only slightly. All trees would be avoided to eliminate the need for tree removal. The Trail Detour would be generally lined by native materials and is not expected to

substantially degrade the visual character of the area. This would be less than significant.

2.c) Construction of turning lanes and a temporary traffic light would alter the visual character around Dike 5 at Auburn-Folsom Road. The area may be visible from several homes across the street. This impact would be temporary and the area would be restored to pre-construction conditions after construction is complete. This impact would be less than significant.

2.d) A temporary traffic light could be installed at the Dike 5 Construction Site Access. This is unlikely to create a new source of substantial light because it would only be in use during construction traffic and would be removed at the end of construction. Flashing lights may need to be installed to the north and south of the entrance to the access road in order to warn drivers about stopped traffic ahead, and this could potentially create light impacts to some homes. However, the use of these lights would be minimal and temporary as the lights would be used only when traffic enters or exits the access road. After completion of construction at Dikes 4, 5, and 6, the lights would be removed. These impacts would be less than significant.

3.c) Construction of the Cofferdam is not expected to substantially degrade the existing visual character of the area. The Cofferdam consists of a wall that would be constructed to ensure the Stilling Basin area remains dry during construction. The area where the Cofferdam would be constructed is already undergoing construction and would be permanently altered by the JFP Auxiliary Spillway. This area is not open to the public and would only be partially visible from the New Folsom Bridge being constructed by the Corps. The construction of the Cofferdam would not alter scenic vistas or views from scenic highways. This impact would be considered less than significant.

AGRICULTURAL RESOURCES	1 Trail Detour	2 Dike 5 Construction Site Access	3 Cofferdam
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?	NI	NI	NI
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	NI	NI	NI
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?	NI	NI	NI

1-3.a,b,c) No agricultural lands exist within the project area; therefore no agricultural impacts would occur as a result of the Proposed Project.

AIR QUALITY	1 Trail Detour	2 Dike 5 Construction Site Access	3 Cofferdam
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?	NI	NI	NI
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	LTS	LTS	LTSWM
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)?	LTS	LTS	LTS
d) Expose sensitive receptors to substantial pollutant concentrations?	LTS	LTS	NI
e) Create objectionable odors affecting a substantial number of people?	NI	NI	NI

1-3.a) The Trail Detour would not create any new permanent emissions and would have very little emissions during construction because of the limited types of equipment needed. All actions would comply with applicable air quality standards and air quality plans.

1.b) Construction for the Trail Detour would have less than significant impacts to air quality given the limited types of construction equipment required and the short time-frame required to grade and surface the trail.

1.c) Because construction of the Trail Detour would contribute only a minimal amount of emissions and would be of a short duration, this impact would be less than significant.

1-3.d) None of the actions would expose sensitive receptors to substantial pollutant concentrations. The Trail Detour would require a limited amount of equipment and construction would be of a short duration. The Cofferdam would not be constructed near any sensitive receptors. The Dike 5 intersection would be constructed on Auburn-Folsom Road near several residences; however, all trucks would comply with existing air quality regulations and would use only designated truck routes. This impact would be less than significant.

1-3.e) None of the actions would create odors that would affect a substantial number of people.

2.b) In the Folsom DS/FDR Final EIS/EIR, work at Dike 5 was scheduled to start in September 2009. Due to SOD schedule priorities, Reclamation has elected to initiate the Dike 5 work by September 2008, continuing into 2009. The air quality impacts related to construction at Dike 5 were already addressed in the Final EIS/EIR; the only action related to the Supplemental EA/IS is the date adjustment.

Emissions for Dike 5 construction equipment and haul trucks are summarized in Chapter 3, Table 3.4-1. Both daily and project-level emissions (i.e., tons per year) would be less than the PCAPCD and General Conformity thresholds in 2008 and 2009; therefore, emissions are expected to be less than significant.

Combined emissions from Dike 5 and other Folsom DS/FDR actions scheduled for 2008 and 2009 were reviewed to evaluate compliance with General Conformity. As is demonstrated in Table 3.4-2 in Chapter 3, emissions are less than the applicable General Conformity thresholds and therefore air quality impacts are expected to be less than significant.

2.c) Although the Dike 5 work would have some emissions, it would be temporary and would not result in any cumulatively considerable net increase of any pollutant for which the project region is non-attainment.

3.b) Approximately 6,700 cubic yards (cy) to 8,500 cy of concrete and 1,350,000 pounds (lbs) to 1,700,000 lbs of reinforcing bars would be required for construction of the Cofferdam. This would equate to 40 trucks per day for a total of 45 days.

The emission estimates provided in Table 3.4-4 in Chapter 3 indicate the uncontrolled nitrogen oxides (NOx) emissions would not exceed the SMAQMD's daily emission rates, nor would uncontrolled NOx, PM10, and CO emissions exceed the General Conformity de minimis thresholds.

Based on this analysis, construction of the Cofferdam itself would not cause an adverse impact that exceeds applicable thresholds. Since the peak annual emissions only represent a modest emissions increase, the General Conformity thresholds will not be exceeded when added to the other Folsom DS/FDR actions planned for 2008 and 2009. Although emissions from the Cofferdam would not exceed SMAQMD's daily thresholds, when combined with other Folsom DS/FDR actions happening concurrently, daily emissions could exceed 85 pounds per day and would be considered potentially significant. The mitigation measures described below would address the air quality impacts associated with the Cofferdam. With the appropriate mitigation described below, air quality impacts from Cofferdam construction would be considered less than significant.

3.c) Although the Cofferdam work would have a limited amount of emissions, it would be temporary and would not result in any cumulatively considerable net increase of any pollutant for which the project region is non-attainment.

Mitigation Measure:

1. Reclamation and the Construction Contractor will submit a plan for approval by SMAQMD, demonstrating that the heavy-duty off-road vehicles will achieve a project-wide fleet average 20 percent NOx reduction and 45 percent particulate reduction. The plan will also be required to include an inventory of all off-road construction equipment greater than or equal to 50 horsepower that will be used an aggregate of 40 or more hours during any portion of the project. Reclamation and the Construction Contractor will also have to demonstrate conformity with NOx thresholds, apply fugitive dust control on roadways, processing plants, and concrete batch plants and obtain power for construction facilities from the electric utility grid rather than diesel-driven generators and pumps. The Construction Contractor will be encouraged to seek additional control measures as part of emissions offsets.

2. Since project-wide emissions from the Cofferdam and ongoing operations related to the Folsom DS/FDR could exceed 85 lbs per day, the appropriate fee will be paid to SMAQMD's mitigation fund for any excess emissions. Emissions from the Cofferdam will be offset with the appropriate payment of this mitigation fee.

BIOLOGICAL RESOURCES	1 Trail Detour	2 Dike 5 Construction Site Access	3 Cofferdam
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 or U.S. Fish and Wildlife Service?	LTS	NI	NI*
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	LTS	NI	NI*
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	NI	NI	NI*
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?	LTS	LTS	NI
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	NI	NI	NI

* Although the Cofferdam could affect habitat and special status species, the Cofferdam would be constructed within the footprint of the JFP Auxiliary Spillway and therefore any impacts have already been addressed in the Folsom DS/FDR Draft and Final EIS/EIR.

BIOLOGICAL RESOURCES	1 Trail Detour	2 Dike 5 Construction Site Access	3 Cofferdam
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	NI	NI	NI

1.a) The Trail Detour would require the potential alteration of various habitats including oak woodlands and annual grasslands. The Trail Detour would be routed to avoid any existing wetlands or wet areas, or trees. Portions of the detour would follow existing trails to minimize impacts to vegetation. Some trimming of vegetation would likely be necessary to establish the proper width for the trail. The minimal vegetation alteration required for the Trail Detour is expected to have a less than significant impact to special status species and habitats.

1.b) Oak woodlands and annual grassland habitats are present within the Trail Detour construction areas and may be affected by construction activities including vegetation trimming, as well as increased erosion and sedimentation. Oak woodland and annual grassland provide resting, nesting, and forage habitat for a variety of wildlife. Construction activities could result in the loss of this habitat. The Trail Detour would be rerouted to avoid the removal of trees and other vegetation but may require some trimming of vegetation to obtain the proper width. The Trail Detour would be constructed along existing dirt trails as much as possible to reduce vegetation and wildlife impacts. The Trail Detour would not be paved, but would be created using native materials found onsite and little soil erosion is expected. Impacts to sensitive habitats are expected to be less than significant.

1.c) Construction of the Trail Detour would not require removal, filling or hydrological disruption of seasonal wetlands. The Trail Detour will be routed to avoid such areas.

1.d) The Trail Detour would not substantially interfere with the movement of wildlife species or the use of nursery sites. The Trail Detour would be constructed using native materials and would follow along existing unimproved trails as much as possible to avoid or minimize vegetation and wildlife impacts.

1.e) The Trail Detour would occur on Federal property and would not be subject to local policies or ordinances.

1.f) No Habitat Conservation Plans (HCPs) and Natural Community Conservation Plans (NCCPs) are in effect for the Trail Detour area.

2.a) Impacts to special status species from the Dike 5 staging area (an area from Dike 5 to Auburn-Folsom Road) were already disclosed in the Folsom DS/FDR EIS/EIR. The only change to the Dike 5 area from that discussed in the EIS/EIR is the construction of a temporary intersection, turn-in and turn-out lanes, and truck traffic delivering materials to the site using these lanes. The lanes would be mainly constructed on Auburn-Folsom Road and would turn-into the Dike 5 area, which would already be cleared of vegetation for staging, as described in the EIS/EIR. Pre-construction surveys completed for the Folsom DS/FDR Project identified no special-status species in the area around Dike 5. Because the area would already be cleared of vegetation for Dike 5 staging, the Dike 5 Construction Site Access is not expected to affect special-status species, beyond what was disclosed in the EIS/EIR. In addition, the area would be restored to pre-construction conditions after work on the dikes is complete.

2.b) The only habitats within the Dike 5 access area are annual grassland and ruderal habitats. Neither of these habitats are considered sensitive natural communities.

2.c) Wetlands do not occur in the Dike 5 access and staging areas.

2.d) Although no specific wildlife corridors have been identified in the Dike 5 area, it is reasonable to expect the construction traffic turning into the area could deter the movement of wildlife due to the increase in noise, dust, and heavy vehicles. This construction site access would only be used for work on Dikes 4, 5, and 6 and would be restored to pre-construction conditions after work is complete. In addition, the area would already be disturbed for the Dike 5 staging area, as described in the EIS/EIR. Because this impact would be temporary and would occur in an area already disturbed, it is expected to be less than significant.

2.e) No additional trees would require removal for the Dike 5 Construction Site Access, beyond those already removed for the Dike 5 staging area and disclosed in the EIS/EIR. The Proposed Project would not conflict with local policies or ordinances as construction would occur on Federal property or on Auburn-Folsom Road

2.f) No HCPS and NCCPs are in effect for the Dike 5 Construction Site Access area.

3.a) The Cofferdam could require the potential alteration of various habitats including riparian and annual grassland. The alteration of these habitats could

result in an adverse effect on special-status species such as the removal of resting, nesting, and foraging habitat. The EIS/EIR adequately addressed these impacts as the Cofferdam would be constructed within the JFP Auxiliary Spillway footprint. No new impacts beyond those discussed in the EIS/EIR for the JFP Auxiliary Spillway are anticipated.

3.b) See 3.a) above.

3.c) Construction of the Cofferdam would not result in additional removal, filling or hydrological disruption of wetland habitats along the American River. All wetlands in this area would be impacted by the JFP Auxiliary Spillway construction and were previously analyzed in the EIS/EIR. The current Clean Water Act Section 404 permit in place for the Folsom DS/FDR Project covers the entire JFP Auxiliary Spillway area including the Cofferdam.

3.d) Construction of the Cofferdam would occur in an area already significantly disrupted by construction of the JFP Auxiliary Spillway and the New Folsom Bridge. Therefore, construction of the Cofferdam would not provide additional interference with the movement wildlife species or the use of nursery sites.

3.e) Construction of the Cofferdam would occur on Federal property and would not conflict with local policies or ordinances.

3.f) No HCPS and NCCPs are in effect for the Stilling Basin and Cofferdam area.

CULTURAL RESOURCES	1 Trail Detour	2 Dike 5 Construction Site Access	3 Cofferdam
V. CULTURAL RESOURCES -- Would the project:			
a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?	LTS	LTS	LTS
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	LTS	LTS	LTS
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	LTS	LTS	LTS
d) Disturb any human remains, including those interred outside of formal cemeteries?	LTSWM	LTSWM	LTSWM

1.a-c) Within and adjacent to the Trail Detour, six previously undiscovered cultural resources were recorded during the survey and two known resources, CA-SAC-944H and CA-SAC-945H, were revisited and site records updated. The Trail Detour area of potential effect (APE) would be approximately 5 to 6 ft wide. The archaeological survey width for the Trail Detour is substantially wider, 30 meters on either side of the trail centerline. CA-SAC-944H was previously recorded as part of the Folsom Dam DS/FDR EIS/EIR and found ineligible for listing on the National Register of Historic Places (Bartoy et al. 2007). The project areas associated with the Trail Detour have been subject to cultural resources survey and inventory. The cultural resources identified would either be avoided by shifting the Trail Detour, or they have been considered ineligible for listing by Reclamation. Reclamation will consult with SHPO to seek their concurrence in compliance with the 36 Code of Federal Regulations Part 800 regulations that implement section 106 of the National Historic Preservation Act. This impact would be less than significant.

1. d) Although construction could uncover unknown cultural or historic resources or human remains, measures described below would provide mitigation to reduce potential cultural resource impacts to less than significant.

2-3. a-c) No cultural resources eligible for inclusion on the NRHP will be impacted by these actions. This impact would be less than significant.

2-3. d) Although construction could uncover unknown cultural or historic resources or human remains, measures described below would provide mitigation to reduce potential cultural resource impacts to less than significant.

Mitigation Measure:
Include in the standard contract specifications directions to follow in the unlikely event of the discovery of human remains or other cultural resources during the construction phase of the Proposed Project.

GEOLOGY AND SOILS	1 Trail Detour	2 Dike 5 Construction Site Access	3 Cofferdam
VI. GEOLOGY AND SOILS -- Would the project:			
a) Expose 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.	NI	NI	NI
ii) Strong seismic ground shaking?	NI	NI	NI
iii) Seismic-related ground failure, including liquefaction?	NI	NI	NI
iv) Landslides?	NI	NI	NI
b) Result in substantial soil erosion or the loss of topsoil?	LTS	LTS	NI
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?	NI	NI	NI
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?	NI	NI	NI
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?	NI	NI	NI

1-3.a) No new buildings would be constructed as part of the Proposed Project and therefore the project would not expose people or structures to any new risks associated with earthquakes. No seismic or unstable soil impacts are anticipated in the area of the Proposed Project. Although the Bear Mountain fault occurs north of the project, this fault has not been designated as active by the U.S. Geological Survey. Additionally, ground shaking potential is low in the area. The potential for landslides is low because of relatively thin soils.

1.b) The Trail Detour would require a small amount of cut and fill to provide appropriate slopes. A minimal amount topsoil would likely be removed and placed elsewhere on site. The Trail Detour would be covered with native materials which would reduce the potential for soil erosion. This impact would be less than significant.

1-3.c) As indicated above, the Project site is not located on an unstable geologic unit or soils.

1-3.d) The Project site has been previously disturbed for construction of Folsom Dam and Reservoir and is unlikely to contain expansive soils. The Cofferdam area contains a shallow layer of soil over grantic rock. The Trail Detour and Dike 5 area are not expected to contain any expansive soils.

1-3.e) No septic tanks or alternative waste disposal systems are proposed.

2.b) The new turn-in and turn-out lanes would be unlikely to result in any soil erosion or loss of topsoil as the lanes would be paved. Construction vehicles and equipment entering and exiting the Dike 5 area could cause some soil erosion and dust. Prior to construction activity, a Notice of Intent will be filed with the Central Valley Regional Water Quality Control Board to indicate the intent to comply with the General Permit for Construction Activities greater than 1 acre. The General Permit establishes conditions to minimize sediment and pollutant loading and requires preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP) prior to construction. The purpose of the SWPPP is to prevent the movement of construction pollutants (in contact with stormwater) into receiving water. This is accomplished through the selection of Best Management Practices (BMPs) which are measures that are applied to control erosion and sediment transport. Proper implementation of the BMPs outlined in the SWPPP would help prevent erosion and reduce this impact to less than significant.

3.b) The Cofferdam would be built in an area that mainly consists of decomposed granite and would be unlikely to contribute to any soil erosion. Any layer of topsoil would have already been removed for excavation of the JFP Auxiliary Spillway.

HAZARDS AND HAZARDOUS MATERIALS	1 Trail Detour	2 Dike 5 Construction Site Access	3 Cofferdam
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?	NI	NI	LTS
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?	NI	LTS	LTS
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	LTS	NI	NI
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?	NI	NI	NI
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?	NI	NI	NI
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?	NI	NI	NI
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	NI	NI	NI

HAZARDS AND HAZARDOUS MATERIALS	1 Trail Detour	2 Dike 5 Construction Site Access	3 Cofferdam
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?	LTS	NI	NI

1-2.a) The Proposed Project would not result in the permanent use, transport, or disposal of hazardous materials after construction is complete.

1.b) Construction of the Trail Detour would not require the storage of hazardous materials.

1-3.d) None of the actions would occur on a listed hazardous materials site.

1-3.e,f) None of the proposed actions are located at, or within two miles of, a public airport.

1-3.g) The actions would not interfere with any emergency plans.

1-3.h) The Cofferdam and Dike 5 Construction Site Access would occur in an area cleared of existing vegetation.

1.c) The final portion of the Trail Detour near Dike 4 would be constructed within a quarter mile of Cavitt Junior High School in the Granite Bay area. A small excavator and a BobcatTM would likely be the only construction equipment required to build the Trail Detour. These vehicles would have a small amount of air emissions when in operation. They would also require fuel, but no fuel is expected to be stored on-site. This action is unlikely to pose any hazard risk to Cavitt Junior High school and construction near the school would be completed within several weeks. This impact would be less than significant.

1.h) Work on the Trail Detour would occur in an area with grasslands and other vegetation where the fire threat is designated as moderate to high. Private residences and other buildings are present across Auburn-Folsom Road and around the Mooney Ridge and Granite Bay area directly adjacent to the reservoir and Federal property. The operation of construction vehicles in the dry vegetation could start fires. Appropriate fire suppression tools will be kept on-site during the dry months when the fire risk is high. The

construction vehicles will be kept on existing dirt trails or in areas without vegetation to reduce the risk of fires. This impact would be less than significant.

2.b) Materials for paving asphalt would be temporarily handled on-site. The small quantity required to pave the turn-in and turn-out lanes is unlikely to require storage for more than several days. The impact would be temporary and less than significant.

2-3.c) The Dike 5 Construction Site Access and Cofferdam are not within a quarter mile of an existing school.

3.a) Construction of the Cofferdam could require the temporary use and transport of hazardous materials associated with construction equipment maintenance and activities. There are no residences in the vicinity and no recreation is allowed in the area. Because this impact would be temporary and would not occur near any residences or recreation areas, this impact would be less than significant.

3.b) Construction of the Cofferdam would require the use of hazardous materials such as concrete, and fuel within the area of the existing Folsom Dam Spillway. Reclamation and their Construction Contractor would develop and implement a Hazardous Materials Management Plan and Worker Health and Safety Plan that would provide proper procedures for storing and handling hazardous materials to prevent any environmental or health and safety impacts. This impact would be less than significant.

HYDROLOGY AND WATER QUALITY	1 Trail Detour	2 Dike 5 Construction Site Access	3 Cofferdam
VIII. HYDROLOGY AND WATER QUALITY -- Would the project:			
a) Violate any water quality standards or waste discharge requirements?	NI	NI	LTS
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)?	NI	NI	LTS
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?	NI	NI	LTS
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?	NI	LTS	LTS
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?	NI	LTS	NI
f) Otherwise substantially degrade water quality?	NI	NI	LTS
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	NI	NI	NI

HYDROLOGY AND WATER QUALITY	1 Trail Detour	2 Dike 5 Construction Site Access	3 Cofferdam
hazard delineation map?			
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	NI	NI	NI
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?	NI	NI	B
j) Inundation by seiche, tsunami, or mudflow?	NI	NI	NI

1-3.g,h) The proposed Project would not place any structures in a flood plain.

1-3.j) The proposed Project would not occur in an area with the potential for seiche, tsunami, or mudflows.

1.a-f) The Trail Detour would avoid all wetlands and surface water and would not affect any existing hydrology, surface water runoff, or drainage.

2.a,b,c,f) The Dike 5 Construction Site Access is temporary and would be restored to pre-construction conditions after construction of the dikes is complete. This action would not alter any existing streams or waterways and would not affect water quality.

2.d) A drainage ditch runs parallel to Auburn-Folsom Road where the turn-in lanes would be constructed for the Dike 5 access. A culvert would be installed in the drainage ditch to maintain storm water drainage; therefore construction of the access road would not change the drainage of the area.

2.e) Although paving of new turn-in and turn-out lanes for the Dike 5 Construction Site Access could slightly increase the amount of surface area for runoff, it would be small area and is not expected to impact existing storm drainage systems. Additionally, the lanes would be temporary and the area would be restored to pre-construction conditions when work on the dikes is complete. This impact would be less than significant.

3.a) During excavation activities involving the Stilling Basin and Cofferdam, groundwater could be encountered. This water may have elevated levels of

certain constituents which would cause it to exceed applicable surface water quality objectives and regulations. Reclamation and the Construction Contractor would test the water and obtain appropriate permits before discharging it to any surface waters. This impact would be less than significant to water quality.

3.b) Although groundwater may be encountered during work on the Stilling Basin, this is not expected to deplete any local wells as none exist in the area. The major water source for the surrounding communities is surface water from Folsom Reservoir. This impact would be less than significant.

3.c) Construction of the Cofferdam would temporarily confine the existing floodway channel along the construction site. Hydrological modeling of the water flow and elevation changes has identified no significant upstream or downstream hydrological effects. This impact would be less than significant.

3.d) Although the Cofferdam could slightly alter the drainage pattern of the site, this is not expected to result in any flooding and no residences exist in the area. This impact would be less than significant.

3.f) The Cofferdam construction is not expected to substantially degrade water quality. The Hazardous Materials Management Plan, NPDES permit, and SWPPP would help to reduce any water quality impacts from construction of the Cofferdam. The Cofferdam could actually prevent groundwater and hazardous construction materials from being discharged into the American River. Measures proposed as part of the Project design would be implemented to prevent concrete material from entering the Stilling Basin or the river during removal of the wall. Overall, the potential impacts to water quality are considered less than significant.

3.i) The purpose of the Cofferdam is to keep the Stilling Basin area dry from American River flows (i.e., releases from Folsom Dam) and to protect the workers during construction of the Stilling Basin. The Cofferdam would allow work to continue year-round and would ensure worker safety during releases from Folsom Dam. This structure would protect workers by eliminating the risk of flooding and is considered a beneficial impact.

LAND USE AND PLANNING	1 Trail Detour	2 Dike 5 Construction Site Access	3 Cofferdam
IX. LAND USE AND PLANNING - Would the project:			
a) Physically divide an established community?	NI	NI	NI
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?	NI	LTS	NI
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	NI	NI	NI

2.b) The Dike 5 Construction Site Access would require an encroachment permit for any work that would affect Auburn-Folsom Road because the road is under the jurisdiction of Placer County. Reclamation or the Construction Contractor would obtain all appropriate permits from Placer County prior to construction. Reclamation and the Construction Contractor would coordinate with Placer County to ensure the installation of the temporary traffic light and/or flagmen and turn-in and turn-out lanes would comply with the County's traffic standards and regulations. This impact would be less than significant.

The remainder of the activities under the Proposed Project would occur on Federal property, do not occur within or through an established community, do not involve or conflict with any conservation plans, and would not result in any other land use or planning impacts.

MINERAL RESOURCES	1 Trail Detour	2 Dike 5 Construction Site Access	3 Cofferdam
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?	LTS	NI	NI
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?	NI	NI	NI

2-3.a) and.b) The Dike 5 Construction Site Access would not result in the loss of availability of locally important mineral resource recovery site as none are designated within the project area. The Cofferdam would be constructed of concrete and reinforcing bars brought from off-site sources. This would not impact mineral resources at Folsom Reservoir.

1.a) The Trail Detour would use native materials obtained from the surrounding Folsom Lake State Recreation Area (FLSRA) to surface the trail. The small quantity required would be considered less than significant.

NOISE	1 Trail Detour	2 Dike 5 Construction Site Access	3 Cofferdam
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?	NI	NI	LTS
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	NI	NI	LTS
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	NI	NI	NI
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	LTS	LTS	LTS
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?	NI	NI	NI
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?	NI	NI	NI

1-2.a) Development of the proposed Trail Detour and Dike 5 Construction Site Access would require minimal construction equipment that would not generate noise in excess of the standards, not would it be a permanent source of noise.

1-2. b) Development of the proposed Trail Detour and Dike 5 Construction Site Access would not produce excessive groundborne vibration. As analyzed in the Folsom DS/FDR EIS/EIR, the potential construction vehicles used for these activities would not produce vibrations above a "barely perceptible" level from 150 feet away. There are no sensitive receptors within 150 feet of the proposed work and any vibrations from construction would be imperceptible and temporary.

1-3.c) The Proposed Project would not result in a permanent source of noise. Therefore, no permanent noise impacts would occur.

1-3.e,f) None of the proposed actions are located at, or within two miles of, a public airport.

1.d) The Trail Detour alignment parallels Auburn-Folsom Road, a major thorough fare with significant vehicular and truck traffic. Any temporary noise produced during the brief construction period would be masked by the ambient noise levels and not apparent to residences across the road. Noise impacts from the Trail Detour would be temporary and less than significant.

2.d) Potential sources of noise impacts from the proposed Dike 5 Construction Site Access include both onsite construction noise and transportation-related noise from construction workers, visitors and deliveries. Onsite dike construction noise and area-wide construction traffic noise were evaluated in the Folsom DS/FDR EIS/EIR. This assessment evaluates only the transportation-related noise associated with use of the new proposed construction access road to Dike 5 from Auburn-Folsom Road.

Transportation-related noise would consist of trucks hauling materials to Dike 5 via the new construction access road and construction worker, visitor and delivery vehicles. According to the traffic analysis, the volume of traffic generated by these sources would be very low 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 this short-term, relatively low volume of traffic would increase noise levels in the project area by considerably less than 3 dBA, and, therefore, would have imperceptible noise impacts. In future years, the Dike 5 construction staging area is proposed to be used for Dike 4 and 6 construction. Noise impacts from this future construction-related use of the Dike 5 site access road are anticipated to be imperceptible, similar to that of the Dike 5 construction.

If the onsite dike construction noise analyzed in the Folsom DS/FDR EIS/EIR is considered in conjunction with the increases from transportation-related noise sources, the overall increase in noise levels would still be minimal. Both projects would:

- Incorporate the appropriate level of sound attenuation on equipment that will attenuate sound at sensitive receptors to comply with local noise ordinances. Maintain equipment to comply with noise standards (e.g., exhaust mufflers, acoustically attenuating shields, shrouds, or enclosures).

- Enclose above-ground conveyor systems in acoustically-treated enclosures, if necessary;

- Line or cover hoppers, conveyor transfer points, storage bins and chutes with sound-deadening material; and

- Schedule truck loading, unloading, and hauling operations so as to reduce nighttime noise impacts to comply with local noise ordinances.

Noise impacts during construction of the Dike 5 Construction Site Access and Trail Detour are anticipated to be less than significant.

3.a, b, d) Although construction and demolition of the Cofferdam would produce noise, it is in a location remote from sensitive receptors. Construction could produce some groundborne vibration from blasting and heavy equipment, however, the noise and vibration would be barely perceptible considering the distance of sensitive receptors (see analysis in Folsom DS/FDR EIS/EIR on page 3.10-26-27). With the construction noise control measures summarized above (that are part of the Project), noise impacts would be less than significant.

POPULATION AND HOUSING	1 Trail Detour	2 Dike 5 Construction Site Access	3 Cofferdam
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)?	NI	NI	NI
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	NI	NI	NI
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	NI	NI	NI

No new housing, public roads, or infrastructure would be constructed as part of the Proposed Project. No activities would require the displacement of existing housing or people. As such, the Proposed Project would not result in any population and housing impacts.

PUBLIC SERVICES	1 Trail Detour	2 Dike 5 Construction Site Access	3 Cofferdam
XIII. PUBLIC SERVICES			
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:			
Fire protection?	NI	LTS	NI
Police protection?	NI	LTS	NI
Schools?	NI	NI	NI
Parks?	LTS	NI	NI
Other public facilities?	NI	NI	NI

1.a) The Trail Detour would create an improved recreation trail at FLSRA that would temporarily replace an existing trail closed during construction. Reclamation's Recreation Management Partner would manage and maintain the Trail Detour until the close of construction, with the exception of the portion that crosses the Dike 5 area. The Dike 5 portion would be managed by Reclamation and their Construction Contractor. Because this Trail Detour would temporarily replace an existing trail and would help maintain recreation throughout construction, it is not expected to affect public services at FLSRA. In summary, the only public service that may be affected by the Trail Detour is parks/recreation; however, the potential impacts would be less than significant.

2.a) Operation of a temporary traffic light on Auburn-Folsom Road at Dike 5 would mean that fire and police vehicles have a new light to circumnavigate during emergencies. Reclamation and the Construction Contractor would notify the appropriate authorities of the temporary traffic light and would design the light to ensure it does not impede any emergency vehicles. This impact would be less than significant.

Construction traffic entering at the Dike 5 access would cross over a portion of Trail Detour below Dike 5. Reclamation and the Construction Contractor

would be responsible for maintaining this portion of the Trail Detour and ensuring public safety; hence, potential impacts related to parks/recreation would be less than significant. There would be no impacts to schools or other public facilities.

3.a) The Cofferdam is removed from any area requiring fire or police services, and is not near any schools, parks, or other public facilities. As such, construction of the Cofferdam would not affect any public services.

RECREATION	1 Trail Detour	2 Dike 5 Construction Site Access	3 Cofferdam
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?	LTS	LTS	NI
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?	LTS	LTS	NI

1.a) The new Trail Detour is a mitigation measure described in the Folsom SOD ROD that would allow the continuous use of trails around Dikes 4, 5, and 6 during construction. Because there will be no interruption in pedestrian, equestrian, or bicycle traffic between Beal's Point and Mooney Ridge, it is expected that most recreation users will continue to visit the FLSRA and use the trails. The existing trails on the tops of the dikes would only be closed for the duration of construction, which is expected to be less than a year for each dike. Overall, the impact to recreation resulting from the Trail Detour would be less than significant.

1.b) Work on the dikes would result in the closure of trails on the tops of Dikes 4, 5, and 6. In order to maintain a trail from Beal's Point to Mooney Ridge, a trail detour would be constructed on the downstream side of the dikes. As described throughout this document, the Trail Detour would be constructed mainly of native materials and would have minimal effects to the physical environment, beyond some minor trimming of trees and other vegetation. Impacts of the Trail Detour on the physical environment are expected to be less than significant.

2.a) Construction traffic using the Dike 5 Construction Site Access would cross over the Trail Detour. It is expected that this could deter some recreation trail users from using the Trail Detour during construction because of safety and noise issues. However, Reclamation and their Construction Contractor would make every attempt to maintain public safety during construction. Flagmen would be used, when necessary, to direct traffic. Signs would be posted to alert

trail users of the truck crossings. In addition, construction traffic crossing the trail would be temporary. Once work is complete at each of the dikes, the truck traffic and construction would cease and the Trail Detour would no longer be the only option for moving between Beal's Point and Mooney Ridge. Because this is temporary and all attempts would be made to maintain safety during construction, this is not expected to substantially increase the use of other parks in the area or deter large numbers of trail users. This impact would be less than significant.

2.b) A portion of the Trail Detour would be required to cross the Dike 5 Construction Site Access area. Impacts from the Trail Detour are described in 2b above. The Trail Detour would result in less than significant impacts. No other recreation facilities would be required.

3.a, b) No recreation facilities exist in the area of the Cofferdam; therefore, no impacts to recreation would occur.

TRANSPORTATION/TRAFFIC	1 Trail Detour	2 Dike 5 Construction Site Access	3 Cofferdam
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)?	NI	LTSWM	LTS
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	NI	LTSWM	LTS
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?	NI	NI	NI
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	NI	LTSWM	NI
e) Result in inadequate emergency access?	NI	LTSWM	NI
f) Result in inadequate parking capacity?	NI	NI	NI
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	NI	NI	NI

1.a-g) The Trail Detour would be constructed on Federal property and would not affect traffic on any roads, highways, or air travel routes.

2.a) The Dike 5 Construction Site Access would shift the construction traffic on Auburn-Folsom Road from Beal's Point to Dike 5. Although this increase in traffic would be temporary, this stretch of Auburn-Folsom Road currently experiences an "F" Level-of-Service during peak traffic periods, which exceeds the standard set by Placer County. Construction traffic during peak

periods could exacerbate this problem. Mitigation measures below would reduce this impact to less than significant.

2.b) The Dike 5 Construction Site Access would shift the temporary increase of construction traffic on Auburn-Folsom Road from Beal's Point to Dike 5. This stretch of Auburn-Folsom Road experiences an "F" Level-of-Service during peak traffic periods, which exceeds the standard set by Placer County. Construction traffic during peak periods could exacerbate this problem. Mitigation measures below would reduce this impact to less than significant.

2.c) There are no air travel routes/patterns in proximity to the Project site that would be affected by Dike 5 Construction Site Access.

2.d) The temporary traffic light or flagmen would be positioned on a curve and could therefore result in a traffic hazard. Mitigation measures described below would reduce this impact to less than significant.

2.e) The temporary intersection with a traffic light could impede emergency vehicles. Mitigation measures described below would reduce this impact to a less than significant level.

2.f) The Dike 5 Construction Site Access project would not affect or require any parking, other than possibly that associated with worker parking, which would be accommodated as part of the overall Folsom DS/FDR Project.

2.g) The basic nature of the Dike 5 Construction Site Access project does not involve alternative transportation.

3.a) Although the Cofferdam construction would temporarily increase traffic, this increase is not expected to be significant (see Table 3-8 in Chapter 3 and the associated discussion).

3.b) The Cofferdam construction traffic would not deteriorate the LOS on any of the roads that would be used by haul trucks. In addition, increases to daily traffic volumes are all less than two percent (with the exception of Scott Road south of White Rock Road; however, this road is rural and lightly used, and would continue to operate at LOS A/B.) In those instances where the road is at LOS F, the volume to capacity (V/C) ratio would not increase more than 0.05%, which is below the threshold of significance (see Table 3-8 in Chapter 3 and the associated discussion). Based on the analysis, and the fact that traffic impacts from the Cofferdam would be temporary, impacts to transportation and circulation from construction of the Cofferdam would be less than significant.

3.c) There are no air travel routes/patterns in proximity to the Project site that would be affected by the Cofferdam.

3.d) The Cofferdam project does not involve any roadway design features or incompatible uses on roads.

3.e) The Cofferdam project does not involve emergency access.

3.f) The Cofferdam project would not affect or require any parking, other than possibly that associated with worker parking, which would be accommodated as part of the overall Folsom DS/FDR Project.

Mitigation Measures:

1. Reclamation and the Construction Contractor will coordinate with Placer County regarding installation of the temporary intersection and will install warning signs and other safety measures, as required.

2. Deliveries will be scheduled during off-peak hours if flagmen are implemented at the Dike 5 Construction Site Access.

3. If a temporary traffic signal is implemented, the lights at Eureka Road and Fuller Drive will be synchronized to allow appropriate gaps in Auburn-Folsom Road traffic such that construction trucks would have sufficient time to turn-in and out of the access road.

4. Reclamation and the Construction Contractor will coordinate with appropriate local fire, police, and other emergency personnel to inform them of the new intersection and will design the traffic light in a way that does not impede emergency vehicles.

UTILITIES AND SERVICE SYSTEMS	1 Trail Detour	2 Dike 5 Construction Site Access	3 Cofferdam
XVI. UTILITIES AND SERVICE SYSTEMS -- Would the project:			
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	NI	NI	NI
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?	NI	NI	NI
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	NI	LTS	NI
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	NI	NI	NI
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?	NI	NI	NI
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	NI	NI	LTS
g) Comply with federal, state, and local statutes and regulations related to solid waste?	NI	NI	LTS

1-3.a,b,d,e) The Proposed Project would not generate wastewater and would not require the construction of new wastewater or water treatment

facilities. The Proposed Project would not require a new water supply because no buildings would be constructed.

1&3.c) No new storm water drainage facilities would be required for the Trail Detour or the Cofferdam.

2.c) A drainage ditch runs parallel to Auburn-Folsom Road where the turn-in lanes would be constructed for the Dike 5 access. A culvert would be installed in the drainage ditch to maintain storm water drainage. Given the relatively minor nature of this improvement, the impact would be less than significant.

1&2.f,g) The Trail Detour and Dike 5 Construction Site Access would not produce any notable amounts of solid waste requiring disposal.

3.f) Solid waste would be generated during construction and demolition of the Cofferdam. The solid waste would be disposed at a landfill with adequate capacity. This impact would be less than significant.

3.g) Reclamation and the Construction Contractor would comply with all applicable statues and regulations related to solid waste. This impact would be less than significant.

MANDATORY FINDINGS OF SIGNIFICANCE	1 Trail Detour	2 Dike 5 Construction Site Access	3 Cofferdam
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?	LTS	LTSWM	LTSWM
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)?	NI	LTS	LTS
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	LTS	LTSWM	LTSWM

a) Although the Proposed Project has the potential for impacts to several of the environmental resources described above, including traffic, air quality, and cultural resources, the impacts would either be less than significant or would be reduced to a level that is less than significant with implementation of specified mitigation measures. All mitigation measures listed in this Supplemental EA/IS (and described below) will be incorporated into the Proposed Project.

b) The Proposed Project would not result in cumulatively considerable impacts with the implementation of the suggested mitigation measures described above and close coordination with the Corps regarding the New Folsom Bridge

Project and Placer County regarding the Auburn-Folsom Road Widening Project.

c) None of the actions would have substantial adverse effects on human beings following completion of the actions and implementation of the mitigation measures referenced in this Supplemental EA/IS.

Mitigation Measures:
The following mitigation measures will be incorporated into the Proposed Project to reduce all potentially significant impacts to a less than significant level.

Air Quality

1. Reclamation and the Construction Contractor will submit a plan for approval by SMAQMD, demonstrating that the heavy-duty off-road vehicles will achieve a project-wide fleet average 20 percent NOx reduction and 45 percent particulate reduction. The plan will also be required to include an inventory of all off-road construction equipment greater than or equal to 50 horsepower that will be used an aggregate of 40 or more hours during any portion of the project. Reclamation and the Construction Contractor will also have to demonstrate conformity with NOx thresholds, apply fugitive dust control on roadways, processing plants, and concrete batch plants and obtain power for construction facilities from the electric utility grid rather than diesel-driven generators and pumps. The Construction Contractor will be encouraged to seek additional control measures as part of emissions offsets.

2. Since project-wide emissions from the Cofferdam and ongoing operations related to the Folsom DS/FDR could exceed 85 lbs per day, the appropriate fee will be paid to SMAQMD's mitigation fund for any excess emissions. Emissions from the Cofferdam will be offset with the appropriate payment of this mitigation fee.

Cultural Resources

3. Include in the standard contract specifications directions to follow in the unlikely event of the discovery of human remains or other cultural resources during the construction phase of this project.

Transportation/Traffic

4. Reclamation and the Construction Contractor will coordinate with Placer County regarding installation of the temporary intersection and will install warning signs and other safety measures, as required.

5. Deliveries will be scheduled during off-peak hours if flagmen are implemented at the Dike 5 Construction Site Access.

6. If a temporary traffic signal is implemented, the lights at Eureka Road and Fuller Drive will be synchronized to allow appropriate gaps in Auburn-Folsom Road traffic such that construction trucks would have sufficient time to turn-in and out of the access road.

7. Reclamation and the Construction Contractor will coordinate with appropriate local fire, police, and other emergency personnel to inform them of the new intersection and will design the traffic light in a way that does not impede emergency vehicles.

Chapter 5
Consultation and Coordination

This section presents the agencies and parties that were consulted during development of the document, the applicable Federal, State, and local requirements the project will comply with, and the distribution list.

5.1 Consultation and Coordination

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

- California Department of Parks and Recreation;
- U.S. Fish and Wildlife Service; and
- Placer County.

5.2 Federal, State, and Local Requirements

The Proposed Action analyzed in this Supplemental EA/IS must fulfill or comply with the Federal, State, regional, and local environmental requirements described in Table 5-1.

Table 5-1
Federal, State, and Local Requirements

Statute	***Relevant Permits/ Processes***
FEDERAL	
National Environmental Policy Act of 1969 (NEPA)	EA, FONSI
National Historic Preservation Act of 1966 (NHPA)	Addressed in EA/IS
Executive Order 12898, Environmental Justice	Addressed in EA/IS
Clean Air Act (Section 176)	Conformity provisions
Clean Water Act (CWA)	NPDES permit
Indian Trust Assets (ITA)	Addressed in EA/IS
Endangered Species Act (ESA)	Not required as the Proposed Action will have no effect to listed species
Fish and Wildlife Coordination Act (FWCA)	Coordination with USFWS
STATE	
California Environmental Quality Act (CEQA)	IS, ND
Porter-Cologne Water Quality Control Act	NPDES permit
Government Code Section 65040.12(e) Environmental Justice	Addressed in EA/IS
California Clean Air Act (CCAA)	Ambient air quality standards
LOCAL	
Placer County	Traffic LOS thresholds, Encroachment Permit
Sacramento Metropolitan Air Quality Management District (SMAQMD)	Air Quality thresholds
Placer County Air Pollution Control District (APCD)	Air Quality thresholds

5.3 Distribution List

This section lists federal, state, regional, and local public and private agencies and organizations that have either received a copy of this Supplemental EA/IS or a notification of document availability. In addition to the regulatory agencies, agencies with special expertise or interest in evaluating environmental issues related to the project are included. Private agencies, organizations, and individuals who may be affected by the project or who have expressed an interest in the project through the public involvement process are also included.

The Folsom DS/FDR Supplemental EA/IS is available on the internet at:
http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=1808

Copies of the Supplemental EA/IS are available for public review at the following locations:

- Bureau of Reclamation, Denver Office Library, Building 67, Room 167, Denver Federal Center, 6th and Kipling, Denver, CO 80225
- Bureau of Reclamation, Mid-Pacific Regional Office Library, 2800 Cottage Way, W-1825, Sacramento, CA 95825-1898
- El Dorado County Library, 345 Fair Lane, Placerville, CA 95667-5699
- Folsom Public Library, 300 Persifer Street, Folsom, CA 95630
- Natural Resources Library, U.S. Department of the Interior, 1849 C Street NW, Main Interior Building, Washington, DC 20240-0001
- Roseville Public Library, 225 Taylor Street, Roseville, CA 95678
- Sacramento Central Library, 828 I Street, Sacramento, CA 95814-2589

5.3.1 Elected Officials and Representatives

Governor of California
Honorable Arnold Schwarzenegger

United States Senate
Honorable Barbara Boxer
Honorable Dianne Feinstein
House of Representatives
Honorable John Doolittle
Honorable Doris Matsui
Honorable Daniel Lungren

California Senate
Honorable Dave Cox
California Assembly
Honorable Roger Niello
Honorable Ted Gaines
Honorable Alan Nakanishi

5.3.2 Government Departments and Agencies

U.S. Government
Advisory Council on Historic Preservation
Army Corps of Engineers
Bureau of Land Management
Bureau of Reclamation
Council on Environmental Quality
Environmental Protection Agency
Federal Emergency Management Agency
Federal Highway Commission
Fish and Wildlife Service
National Marine Fisheries Service
Natural Resources Conservation Service
Office of Environmental Project Review
Western Area Power Administration

State of California
Air Resources Board
Central Valley Regional Water Quality Control Board
Department of Conservation
Department of Corrections
Department of Transportation
Department of Fish and Game
Department of Parks and Recreation
Department of Water Resources
Reclamation Board
State Clearinghouse

5.3.3 Regional, County, and City

City of Folsom
Folsom Tourism Bureau
Folsom Chamber of Commerce
El Dorado County
Granite Bay Advisory Council
Placer County
Sacramento Area Flood Control Agency

Sacramento County
Sacramento Metropolitan Air Quality Management District
El Dorado County Air Quality Management District
Sacramento Metropolitan Chamber of Commerce
El Dorado County Water Agency
San Juan Water District

5.3.4 Private Organizations and Businesses

SARA – Save The American River Association
El Dorado Irrigation District
Friends of the River
LARTF – Lower American River Task Force
Sacramento Valley Marine Association
Northern California Marine Association

5.3.5 Members of the Public

Reclamation has created an extensive Folsom DS/FDR Project mailing list and continues to update this list regularly. All members of the general public who requested a copy of the Draft or Final Folsom DS/FDR EIS/EIR will be mailed a notice that provides the locations where this document may be viewed and the website address where the document is available online.

Chapter 6
List of Preparers

Table 6-1 *List of Preparers*	
Larry Hobbs Bureau of Reclamation Project Manager 15 years of project development experience	**John Wondolleck** CDM Associate 30 years of experience in resource development with expertise in management of multidisciplinary environmental programs
Elizabeth Vasquez Bureau of Reclamation Natural Resource Specialist 8 years of natural resources experience	**Hank Boucher** CDM Associate 30 years of experience as environmental engineer and planner with expertise in, impact assessment, planning, transportation, land use development
Mike Nepstad Bureau of Reclamation Natural Resources Specialist 14 years experience in Biological Sciences, Environmental Regulations and Compliance	**Gwen Pelletier** CDM Environmental Scientist 8 years of experience working on air quality projects
Matt See Bureau of Reclamation Natural Resource Specialist 2 year of natural resources experience	**Charlie Liggett** CDM Environmental Engineer 28 years of experience as engineer and planner with expertise in design and construction of roadways, bridges, recreational facilities, and other civil projects
Rosemary Stefani Bureau of Reclamation Environmental Specialist 24 years of natural resources experience	**Joe Solomon** CDM Project Engineer 9 years of experience with transportation projects and programs
Rebecca Victorine Bureau of Reclamation Natural Resource Specialist 8 years experience in Biological Sciences	**Gina Veronese** CDM Environmental Planner/Resource Economist 5 years of experience in planning and analysis of water resource projects and programs
Stacy Porter CDM Environmental Planner 3 years of experience in water resources planning	**Denise Ashley** CDM Administrative Assistant 10 years of word processing experience
Patricia Reed CDM Environmental Scientist 8 years of experience in environmental planning and biological sciences	**Auturo Smith** CDM GIS Specialist 13 years of experience specializing in cartographic design and GIS

Table 6-1 ***List of Preparers***	
John Pehrson CDM Engineer 20 years of experience and CDM's lead technical engineer and dispersion modeler for air quality projects	**Charlie Kincaid** CDM Senior Civil Engineer 25 years of experience in the construction and design of roads, bridges, and various civil works projects
Ilana Cohen CDM Environmental Scientist 2 years of experience in environmental planning	**Andria Loutsch** CDM Water Resources Planner 11 years of experience in water resources and environmental planning
Marc Wallace CDM Senior Environmental Scientist 17 years of experience specializing in ambient noise monitoring and noise impact assessments	**Carolyn Oliveira** CDM Office Services Coordinator 4 years of experience
Jane Rinck U.S. Army Corps of Engineers Environmental Analysis Section 20 years experience in Biological Sciences	**John Holson** Pacific Legacy Senior Archaeologist 30 years of experience in cultural resources management
Robert Charney Department of Water Resources Sr. Water Resources Engineer 16 years experience in Water Resources Engineering	**Annalena Bronson** Central Valley Flood Protection Board Environmental Scientist 25 years experience in CEQA

Table 6-2 ***List of Contributors***	
Douglas Weinrich U.S. Fish and Wildlife Service	**David Gore** Bureau of Reclamation
Stephanie Rickabaugh U.S. Fish and Wildlife Service	**Gary Egan** Bureau of Reclamation
Jim Michaels California Department of Parks and Recreation	**Michael Finnegan** Bureau of Reclamation
Michael Gross California Department of Parks and Recreation	**Richard Johnson** Bureau of Reclamation
Tom Heinzer Bureau of Reclamation	**Drew Lessard** Bureau of Reclamation
Diane Williams Bureau of Reclamation	**Robert Schroeder** Bureau of Reclamation
Richard Welsh Bureau of Reclamation	**Donald Treasure** Bureau of Reclamation
Joel Sturm Bureau of Reclamation	**John Wilson** Bureau of Reclamation
Bruce Muller Bureau of Reclamation	**John LaBoon** Bureau of Reclamation
Jonathan Harris Bureau of Reclamation	**Bill Fiedler** Bureau of Reclamation
Stuart Angerer Bureau of Reclamation	**Ernie Hall** Bureau of Reclamation
Terri Reaves Bureau of Reclamation	**Matt Sheskier** Bureau of Reclamation
Jonathan Harris Bureau of Reclamation	**Patrick Welch** Bureau of Reclamation
Nathan Snorteland Bureau of Reclamation	**Steven Sherer** Bureau of Reclamation
Stanley Parrott Bureau of Reclamation	**Jared Vauk** Bureau of Reclamation
Stein Baur SAFCA	**Timothy Washburn** SAFCA
Peter Buck SAFCA	

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Appendix A
Traffic Analysis

Northbound Traffic

A.M. Peak Hour
= Average of Auburn-Folsom / Eureka (NBL + NBT + NBR) and Auburn-Folsom / Oak Hill (NBT + EBL + WBR) * Growth Factor
= [(48 + 1073 + 1081 + 1 + 19) / 2] * 1.03^4
= 1250

P.M. Peak Hour
= Average of Auburn-Folsom / Eureka (NBL + NBT + NBR) and Auburn-Folsom / Oak Hill (NBT + EBL + WBR) * Growth Factor
= [(45 + 1178 + 1202 + 15 + 16) / 2] * 1.03^4
= 1382

Southbound Traffic

A.M. Peak Hour
= Average of Auburn-Folsom / Eureka (SBT + EBR + WBL) and Auburn-Folsom / Oak Hill (SBL + SBT + SBR) * Growth Factor
= [(1041 + 98 + 23 + 1117 + 4) / 2] * 1.03^4
= 1285

P.M. Peak Hour
= Average of Auburn-Folsom / Eureka (SBT + EBR + WBL) and Auburn-Folsom / Oak Hill (SBL + SBT + SBR) * Growth Factor
= [(1049 + 101 + 20 + 1080 + 8) / 2] * 1.03^4
= 1271

Westbound Traffic

Rates from ITE *Trip Generation Manual*, Seventh Edition; Institute of Transportation Engineers; Washington, DC; 2003.

Land Use Code: 210 Single-Family Detached Housing
Assume X=6 units using Bell Drive
Assume 50% traffic turns left and 50% turns right

A.M. Peak Hour	Enter	Exit
T = 0.70(X) + 9.43	= 0.25(T)	= 0.75(T)
T = 0.70(6) + 9.43	= 0.25(14)	= 0.75(14)
T = 14	= 3	= 11

P.M. Peak Hour	Enter	Exit
Ln(T) = 0.90 Ln(6) + 0.53	= 0.63(T)	= 0.37(T)

Ln(T) = 0.90 Ln(6) + 0.53	= 0.63(9)	= 0.37(9)
Ln(T) = 2.14	= 6	= 3
T = 9		

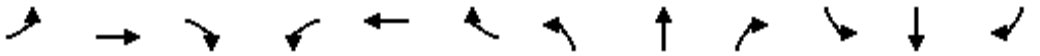
Eastbound Traffic

A.M. Peak Hour

Assume 40 haul trips per day over a period of 7:00a.m. to 3:00p.m. Trips per A.M. peak hour = 40/8 = 5 round trips during A.M. peak hour.
Assume trucks will enter and exit from the south.

P.M. Peak Hour

Assume 40 haul trips per day over a period of 7:00a.m. to 3:00p.m. and will not have any affect on the P.M. peak hour traffic.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	0	6	5	0	0	1	1250	5	0	1285	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0	4.0		4.0	
Lane Util. Factor		1.00			1.00			1.00	1.00		1.00	
Frt		0.92			1.00			1.00	0.85		1.00	
Flt Protected		0.98			0.95			1.00	1.00		1.00	
Satd. Flow (prot)		1681			902			1845	808		1844	
Flt Permitted		0.98			1.00			1.00	1.00		1.00	
Satd. Flow (perm)		1677			950			1844	808		1844	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	0	7	5	0	0	1	1359	5	0	1397	2
RTOR Reduction (vph)	0	7	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	5	0	0	5	0	0	1360	5	0	1399	0
Heavy Vehicles (%)	2%	2%	2%	100%	2%	100%	2%	3%	100%	3%	3%	2%
Turn Type	Perm			Perm			pm+pt		Perm	Perm		
Protected Phases		2			2		3	1			1	
Permitted Phases	2			2			1		1	1		
Actuated Green, G (s)		2.9			2.9			112.9	112.9		112.9	
Effective Green, g (s)		2.9			2.9			112.9	112.9		112.9	
Actuated g/C Ratio		0.02			0.02			0.91	0.91		0.91	
Clearance Time (s)		4.0			4.0			4.0	4.0		4.0	
Vehicle Extension (s)		3.0			3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)		39			22			1682	737		1682	
v/s Ratio Prot											c0.76	
v/s Ratio Perm		0.00			c0.01			0.74	0.01			
v/c Ratio		0.13			0.23			0.81	0.01		0.83	
Uniform Delay, d1		59.2			59.3			1.8	0.5		2.0	
Progression Factor		1.00			1.00			1.00	1.00		1.00	
Incremental Delay, d2		1.5			5.2			3.0	0.0		5.0	
Delay (s)		60.8			64.6			4.8	0.5		7.0	
Level of Service		E			E			A	A		A	
Approach Delay (s)		60.8			64.6			4.8			7.0	
Approach LOS		E			E			A			A	

Intersection Summary			
HCM Average Control Delay	6.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	123.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	84.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

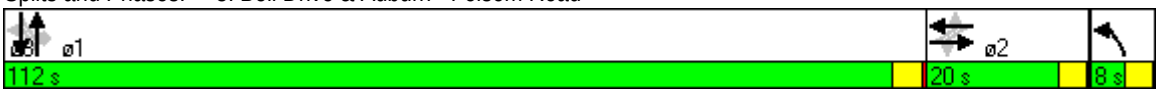
Lane Group	EBT	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	12	5	1360	5	1399
v/c Ratio	0.13	0.10	0.78	0.01	0.80
Control Delay	40.5	59.8	6.3	0.6	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	40.5	59.8	6.3	0.6	7.2
Queue Length 50th (ft)	4	4	0	0	0
Queue Length 95th (ft)	25	18	599	1	700
Internal Link Dist (ft)	282	336	598		555
Turn Bay Length (ft)				200	
Base Capacity (vph)	202	111	1753	768	1753
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.06	0.05	0.78	0.01	0.80

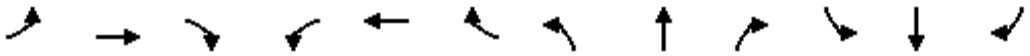
Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBT
Lane Configurations								
Volume (vph)	5	0	5	0	1	1250	5	1285
Turn Type	Perm		Perm		pm+pt		Perm	
Protected Phases		2		2	3	1		1
Permitted Phases	2		2		1		1	
Detector Phase	2	2	2	2	3	1	1	1
Switch Phase								
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	8.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	8.0	112.0	112.0	112.0
Total Split (%)	14.3%	14.3%	14.3%	14.3%	5.7%	80.0%	80.0%	80.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lag	Lag		Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	Max	Max
Act Effct Green (s)		6.4		6.4		115.3	115.3	115.3
Actuated g/C Ratio		0.05		0.05		0.95	0.95	0.95
v/c Ratio		0.13		0.10		0.78	0.01	0.80
Control Delay		40.5		59.8		6.3	0.6	7.2
Queue Delay		0.0		0.0		0.0	0.0	0.0
Total Delay		40.5		59.8		6.3	0.6	7.2
LOS		D		E		A	A	A
Approach Delay		40.5		59.8		6.3		7.2
Approach LOS		D		E		A		A

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 121.4	
Natural Cycle: 140	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 7.0	Intersection LOS: A
Intersection Capacity Utilization 84.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: Bell Drive & Auburn - Folsom Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	0	2	0	0	0	3	1382	0	0	1271	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0			4.0	
Lane Util. Factor		1.00						1.00			1.00	
Frt		0.91						1.00			1.00	
Flt Protected		0.98						1.00			1.00	
Satd. Flow (prot)		1667						1845			1844	
Flt Permitted		1.00						1.00			1.00	
Satd. Flow (perm)		1695						1841			1844	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	0	2	0	0	0	3	1502	0	0	1382	3
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1	0	0	0	0	0	1505	0	0	1385	0
Heavy Vehicles (%)	2%	2%	2%	100%	2%	100%	2%	3%	100%	3%	3%	2%
Turn Type	Perm			Perm			pm+pt		Perm	Perm		
Protected Phases		2			2		3	1			1	
Permitted Phases	2			2			1		1	1		
Actuated Green, G (s)		1.2						114.4			114.4	
Effective Green, g (s)		1.2						114.4			114.4	
Actuated g/C Ratio		0.01						0.93			0.93	
Clearance Time (s)		4.0						4.0			4.0	
Vehicle Extension (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		16						1704			1707	
v/s Ratio Prot											0.75	
v/s Ratio Perm		c0.00						c0.82				
v/c Ratio		0.06						0.88			0.81	
Uniform Delay, d1		60.6						1.9			1.4	
Progression Factor		1.00						1.00			1.00	
Incremental Delay, d2		1.7						5.8			4.3	
Delay (s)		62.3						7.7			5.7	
Level of Service		E						A			A	
Approach Delay (s)		62.3			0.0			7.7			5.7	
Approach LOS		E			A			A			A	

Intersection Summary			
HCM Average Control Delay	6.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	123.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	85.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	NBT	SBT
Lane Group Flow (vph)	3	1505	1385
v/c Ratio	0.04	0.84	0.77
Control Delay	43.3	7.6	5.0
Queue Delay	0.0	0.0	0.0
Total Delay	43.3	7.6	5.0
Queue Length 50th (ft)	1	0	0
Queue Length 95th (ft)	11	#1402	550
Internal Link Dist (ft)	282	598	555
Turn Bay Length (ft)			
Base Capacity (vph)	197	1798	1802
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.02	0.84	0.77

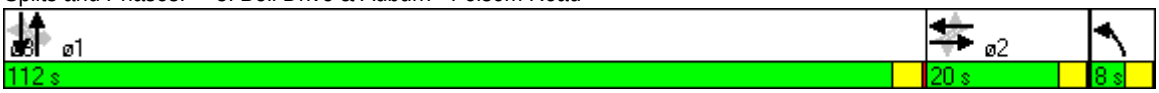
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	NBL	NBT	SBT
Lane Configurations					
Volume (vph)	1	0	3	1382	1271
Turn Type	Perm		pm+pt		
Protected Phases		2	3	1	1
Permitted Phases	2		1		
Detector Phase	2	2	3	1	1
Switch Phase					
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	8.0	20.0	20.0
Total Split (s)	20.0	20.0	8.0	112.0	112.0
Total Split (%)	14.3%	14.3%	5.7%	80.0%	80.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag		Lead	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes
Recall Mode	None	None	None	Max	Max
Act Effct Green (s)		5.7		117.7	117.7
Actuated g/C Ratio		0.04		0.98	0.98
v/c Ratio		0.04		0.84	0.77
Control Delay		43.3		7.6	5.0
Queue Delay		0.0		0.0	0.0
Total Delay		43.3		7.6	5.0
LOS		D		A	A
Approach Delay		43.3		7.6	5.0
Approach LOS		D		A	A

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 120.5	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 6.4	Intersection LOS: A
Intersection Capacity Utilization 85.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: Bell Drive & Auburn - Folsom Road



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	5	0	1250	5	0	1285
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0		4.0
Lane Util. Factor	1.00		1.00	1.00		1.00
Frt	1.00		1.00	0.85		1.00
Flt Protected	0.95		1.00	1.00		1.00
Satd. Flow (prot)	902		1845	808		1845
Flt Permitted	0.95		1.00	1.00		1.00
Satd. Flow (perm)	902		1845	808		1845
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	0	1359	5	0	1397
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	5	0	1359	5	0	1397
Heavy Vehicles (%)	100%	100%	3%	100%	3%	3%
Turn Type				Perm		
Protected Phases	8		2			6
Permitted Phases				2		
Actuated Green, G (s)	1.6		113.6	113.6		113.6
Effective Green, g (s)	1.6		113.6	113.6		113.6
Actuated g/C Ratio	0.01		0.92	0.92		0.92
Clearance Time (s)	4.0		4.0	4.0		4.0
Vehicle Extension (s)	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	12		1701	745		1701
v/s Ratio Prot	c0.01		0.74			c0.76
v/s Ratio Perm				0.01		
v/c Ratio	0.42		0.80	0.01		0.82
Uniform Delay, d1	60.3		1.4	0.4		1.5
Progression Factor	1.00		1.00	1.00		1.00
Incremental Delay, d2	21.8		4.0	0.0		4.6
Delay (s)	82.1		5.4	0.4		6.1
Level of Service	F		A	A		A
Approach Delay (s)	82.1		5.4			6.1
Approach LOS	F		A			A

Intersection Summary			
HCM Average Control Delay	5.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	123.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

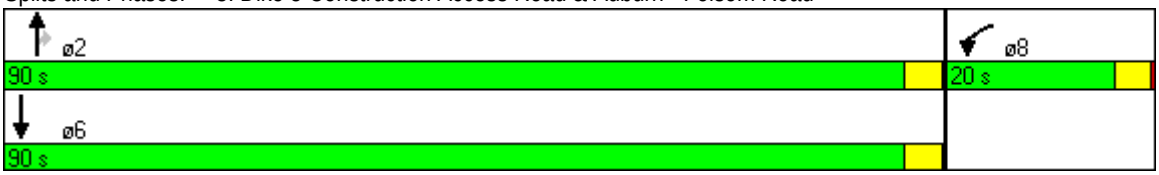
Lane Group	WBL	NBT	NBR	SBT
Lane Group Flow (vph)	5	1359	5	1397
v/c Ratio	0.11	0.76	0.01	0.78
Control Delay	49.0	5.1	0.6	5.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	49.0	5.1	0.6	5.8
Queue Length 50th (ft)	4	0	0	0
Queue Length 95th (ft)	17	618	1	724
Internal Link Dist (ft)	336	598		555
Turn Bay Length (ft)			200	
Base Capacity (vph)	105	1795	786	1795
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.05	0.76	0.01	0.78

Intersection Summary

Lane Group	WBL	NBT	NBR	SBT
Lane Configurations				
Volume (vph)	5	1250	5	1285
Turn Type			Perm	
Protected Phases	8	2		6
Permitted Phases			2	
Detector Phase	8	2	2	6
Switch Phase				
Minimum Initial (s)	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0
Total Split (s)	20.0	90.0	90.0	90.0
Total Split (%)	18.2%	81.8%	81.8%	81.8%
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	Max	Max	Max
Act Effct Green (s)	6.5	116.8	116.8	116.8
Actuated g/C Ratio	0.05	0.97	0.97	0.97
v/c Ratio	0.11	0.76	0.01	0.78
Control Delay	49.0	5.1	0.6	5.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	49.0	5.1	0.6	5.8
LOS	D	A	A	A
Approach Delay	49.0	5.1		5.8
Approach LOS	D	A		A

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 120	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 5.5	Intersection LOS: A
Intersection Capacity Utilization 77.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3: Dike 5 Construction Access Road & Auburn - Folsom Road



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	0	1382	0	0	1271
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.0			4.0
Lane Util. Factor			1.00			1.00
Frt			1.00			1.00
Flt Protected			1.00			1.00
Satd. Flow (prot)			1845			1845
Flt Permitted			1.00			1.00
Satd. Flow (perm)			1845			1845
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	1502	0	0	1382
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	1502	0	0	1382
Heavy Vehicles (%)	16%	16%	3%	100%	3%	3%
Turn Type				Perm	Perm	
Protected Phases	8		2			6
Permitted Phases				2	6	
Actuated Green, G (s)			120.0			120.0
Effective Green, g (s)			120.0			120.0
Actuated g/C Ratio			1.00			1.00
Clearance Time (s)			4.0			4.0
Vehicle Extension (s)			3.0			3.0
Lane Grp Cap (vph)			1845			1845
v/s Ratio Prot			c0.81			0.75
v/s Ratio Perm						
v/c Ratio			0.81			0.75
Uniform Delay, d1			0.0			0.0
Progression Factor			1.00			1.00
Incremental Delay, d2			4.1			2.8
Delay (s)			4.1			2.8
Level of Service			A			A
Approach Delay (s)	0.0		4.1			2.8
Approach LOS	A		A			A

Intersection Summary			
HCM Average Control Delay	3.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	NBT	SBT
Lane Group Flow (vph)	1502	1382
v/c Ratio	0.81	0.75
Control Delay	4.1	2.8
Queue Delay	0.0	0.0
Total Delay	4.1	2.8
Queue Length 50th (ft)	0	0
Queue Length 95th (ft)	0	0
Internal Link Dist (ft)	587	569
Turn Bay Length (ft)		
Base Capacity (vph)	1845	1845
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.81	0.75

Intersection Summary

Lane Group	NBT	SBT	ø8
Lane Configurations			
Volume (vph)	1382	1271	
Turn Type			
Protected Phases	2	6	8
Permitted Phases			
Detector Phase	2	6	
Switch Phase			
Minimum Initial (s)	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0
Total Split (s)	90.0	90.0	20.0
Total Split (%)	81.8%	81.8%	18%
Yellow Time (s)	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	
Total Lost Time (s)	4.0	4.0	
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	Max	Max	None
Act Effct Green (s)	120.0	120.0	
Actuated g/C Ratio	1.00	1.00	
v/c Ratio	0.81	0.75	
Control Delay	4.1	2.8	
Queue Delay	0.0	0.0	
Total Delay	4.1	2.8	
LOS	A	A	
Approach Delay	4.1	2.8	
Approach LOS	A	A	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 3.5	Intersection LOS: A
Intersection Capacity Utilization 76.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 7: Dike 5 Construction Access Road` & Auburn - Folsom Rd