Final Supplemental Environmental Assessment

Isabella Dam Safety Modification Project
Temporary Water Control Manual Deviation

KERN COUNTY, CALIFORNIA
OCTOBER 2017

US Army Corps of Engineers

U.S. Army Corps of Engineers,
Sacramento District – NEPA Lead Agency

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

FINDING OF NO SIGNIFICANT IMPACT
ISABELLA LAKE DAM SAFETY MODIFICATION PROJECT
TEMPORARY WATER CONTROL MANUAL DEVIATION
KERN COUNTY, CALIFORNIA

The U.S. Army Corps of Engineers, Sacramento District, has conducted an environmental analysis in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended. This Supplemental Environmental Assessment (SEA) is tiered to the Isabella Lake Dam Safety Modification (Isabella Lake DSM) Project Environmental Impact Statement (EIS). The SEA proposed action is a temporary modification to the existing water control manual (WCM) during project construction, and removal of a French Gulch noise reduction measure, to facilitate construction scheduling and reduce potential impacts to recreation.

The possible consequences of the work described in this SEA have been studied with consideration given to environmental, cultural, social, and engineering feasibility. The views of other interested agencies, organizations, and individuals have also been considered. In evaluating the effects of the proposed project, specific attention has been given to any environmental conditions that could potentially be affected. All construction would be implemented in compliance with applicable Federal laws, regulations and executive orders. Best management practices, avoidance protocols, and minimization and mitigation measures as summarized within this SEA, Draft EIS, and Final EIS-Record of Decision, would be implemented. Cultural resource issues would follow the Programmatic Agreement and Historic Property Treatment Plan processes.

Based upon my review of the SEA, incorporated herein by reference, it is my determination that the proposed project would have no significant effects on environmental, social, or cultural resources. Based on these considerations, it is my determination that the proposed project does not constitute a major federal action that would significantly affect the human environment. Therefore, preparation of an Environmental Impact Statement is not required.

10/26/17
Date

David G. Ray, P.E.
Colonel, U.S. Army
District Commander

Contents

1 PURPOSE AND NEED FOR THE ACTION

1.1 INTRODUCTION

Pursuant to the National Environmental Policy Act of 1969 (NEPA), as amended, this Supplemental Environmental Assessment (SEA) has been prepared to update, discuss, and disclose potential effects, beneficial or adverse, that may result from a temporary deviation from the Isabella Dam Water Control Manual (WCM).

Isabella Lake is on the Kern River in the Sierra Nevada, in the southernmost part of the Sequoia National Forest, Kern County, California (Figure 1). It sits approximately 35-40 miles northeast of Bakersfield, along Highway 178, one mile upstream of the town of Lake Isabella[1]. The Kern River drains an area of 2,100 square miles and is the most southerly of the major streams flowing into the San Joaquin Valley. The North Fork and South Fork of the Kern River comprise the headwaters, and each flows 90 miles from the High Sierra to their confluence, approximately 1¼ miles upstream of the Isabella Dams. Downstream of Isabella Dam, the Kern River flows through the Kern River Gorge, through the Kern Valley, and into the San Joaquin Valley. From the mouth of the canyon, the Kern River flows 85 miles to its terminus at Tulare Lakebed.

1.1.1 Project Authority

The initial examination and survey for flood control within the Sacramento and Joaquin River Valleys was authorized in the Flood Control Act of 1936, Pub. L. No. 74-738, § 6, 49 Stat. 1579 (1935). Construction of the Isabella Reservoir on the Kern River in the San Joaquin Valley, California was authorized in the Flood Control Act of 1944, Pub. L. No. 78-534, § 10, 58 Stat, 887, 901 (1944).

The Engineering Regulation (ER) 1110-2-1156, Safety of Dams – Policy and Procedures, dated 31 March 2014, prescribes the guiding principles, policy, organization, responsibilities, and procedures for implementation of risk informed dam safety program activities, and a dam safety portfolio risk management process within USACE. The purposes of the dam safety program are to protect life, property, and the environment by ensuring all dams are designed, constructed, operated, and maintained as safely and effectively as is reasonably practicable. When unusual circumstances threaten the integrity of a structure and the safety of the public, USACE has the authority to take expedient actions, require personnel to evaluate the threat, and design and construct a solution.

[1] Differentiation between Lake Isabella and Isabella Lake: the town is *Lake Isabella*, and the reservoir created by the dam is *Isabella Lake*.

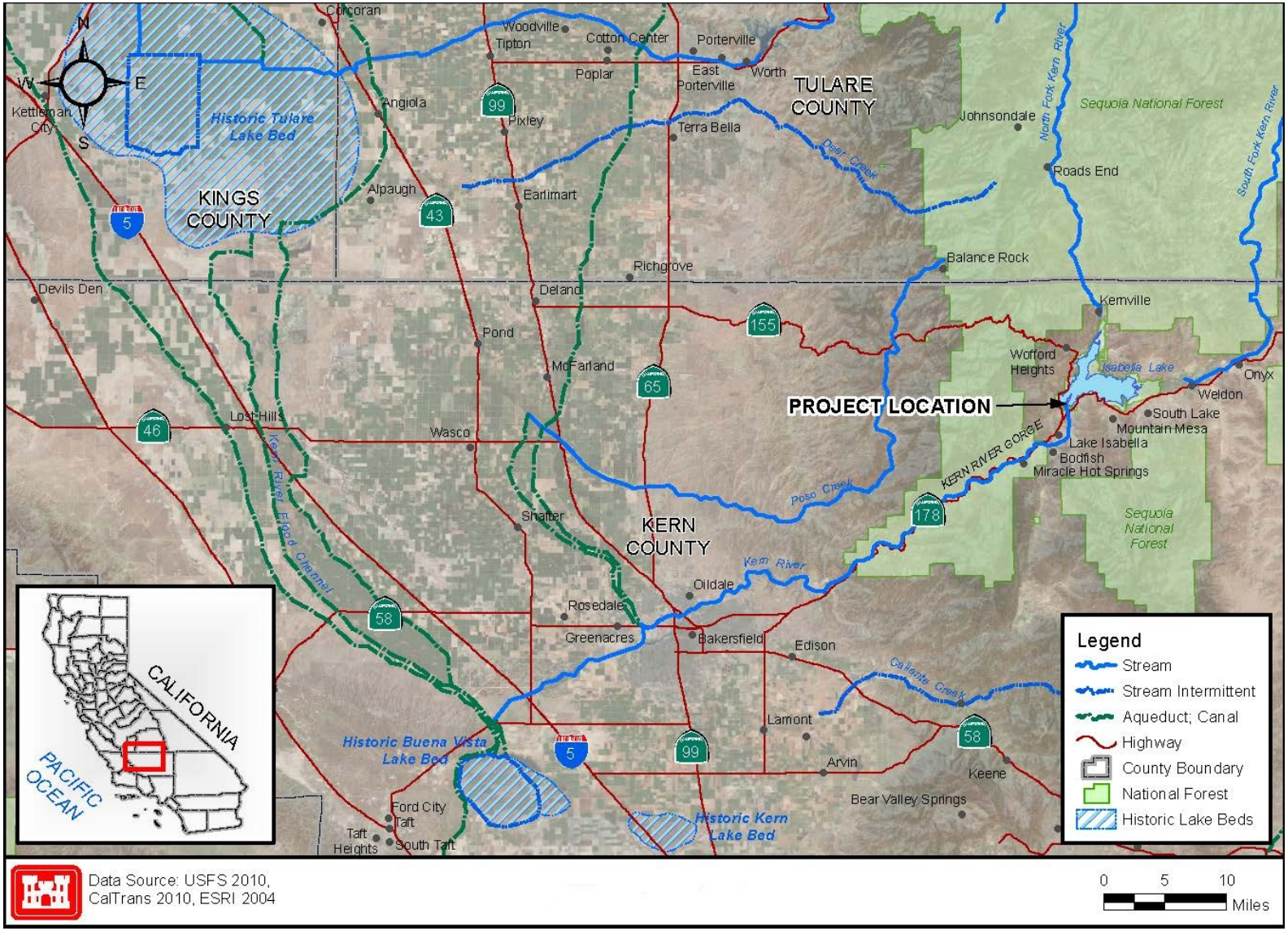


Figure 1. Lower Kern River Watershed and Vicinity Map

1.1.2 Isabella Lake Dam Safety Modification Project (DSMP) Background

In 2005, USACE determined through a screening-level risk assessment process that the Isabella Lake Main Dam, Spillway, and Auxiliary Dam (Isabella Dams) posed unacceptable risk to life and public safety. Based on the risk assessment, the dams received a risk classification described as "*urgent and compelling (unsafe)*" and as "*critically near failure*," or "*extremely high risk*". However, failure is not believed to be imminent. USACE commenced a dam safety study, and based on the risk assessment, classified the Isabella Dams as Dam Safety Action Classification (DSAC) 1 in 2008; elements of the Isabella Dams have been determined to be unsafe under extreme loadings and could result in significant and catastrophic consequences downstream. An Interim Risk Reduction Measure (IRRM) implemented to restrict pool surface elevation to 2,589.26 feet and 361,250 acre feet (AF) remains in effect until the DSMP is implemented.

USACE completed a Dam Safety Modification Report (DSMR) in October 2012. The DSMR recommended remediation measures to increase public safety and reduce property damage risks posed by floods, earthquakes, and seepage at the Isabella Dams (USACE 2012a). In October 2012, USACE published its Final Environmental Impact Statement (EIS) for the proposed remediation of the Isabella Dams. USACE issued a Record of Decision (ROD) for the EIS on December 18, 2012. The EIS described the anticipated direct and indirect impacts expected to occur because of the remediation, including impacts to existing Federal, State, local, and privately owned infrastructure in the Isabella Dams vicinity (USACE 2012b).

Since release of the EIS, six SEA's have been completed. The SEA's address refinements to the approved plan that required additional review. As a result, project costs are reduced, and environmental, economic and human consequences are minimized further than originally assessed. These NEPA and associated decision documents are available online at: http://www.spk.usace.army.mil/Missions/Civil-Works/Isabella-Dam/

1.2 PURPOSE AND NEED

The purpose of the proposed action is to facilitate construction operations and schedule. The proposed action is a temporary WCM deviation during the DSMP construction period (42-48 months), and removal of a noise reduction measure determined to be unnecessary for French Gulch boat ramp construction. The need for the proposed action is to reduce the likelihood of project delays and thus continued dam failure risk.

1.3 SEA DOCUMENT ORGANIZATION

The SEA is tiered to the 2012 EIS (USACE 2012) and subsequent SEA's 1 through 6:

- SEA 1 – Phase I Real Estate Acquisition and Relocation 2014
- SEA 2 – Phase II Real Estate Acquisition and Relocation 2015
- SEA 3 – USDA Forest Service Administration and Recreation Facilities Relocation 2016
- SEA 4 – Borel Canal Easement Acquisition 2016
- SEA 5 – Dams and Spillway Design Refinements 2016

- SEA 6 – French Gulch State Route 155 Improvements 2017

This SEA identifies new information and evaluates the potential effects of a temporary WCM deviation. Chapter 2 identifies alternatives assessed. Chapter 3 is a combined affected environment and environmental consequences chapter. Chapter 4 is a list of document preparers. Chapter 5 is the cited references.

1.4 REGULATORY AUTHORITIES

There is no change in the Isabella DSMP regulatory compliance efforts detailed in Chapter 5 of the 2012 FEIS (USACE 2012). The following is an abbreviated list of regulatory requirements that apply to the DSMP.

- National Environmental Policy Act
- Migratory Bird Treaty Act
- Fish and Wildlife Coordination Act
- Nation Historic Preservation Act
- Wild and Scenic Rivers Act
- Clean Water Act
- Endangered Species Act
- Clean Air Act
- Executive Orders (EO) 12898, 11990, 11988

1.5 COORDINATION AND REVIEW OF THE SEA

The Draft SEA will be circulated to interested Federal, State, and local agencies. All comments received may be considered and incorporated into the Final SEA, as appropriate.

1.6 DECISION TO BE MADE

The District Engineer, Commander of the Sacramento District, must decide whether or not the Proposed Action qualifies for a Finding of No Significant Impact (FONSI) under NEPA or whether a Supplemental EIS must be prepared.

2 PROPOSED ACTION AND ALTERNATIVES

The following section describes the alternative development process, and the alternatives that were not considered and removed from further assessment. One alternative is identified to meet the purpose and need. This alternative is referred to as the Proposed Action and is evaluated in detail in this SEA versus the 2012 EIS Proposed Action and a no action alternative. The No Action Alternative sets the baseline to illustrate potential effects of not implementing the Proposed Action.

2.1 ALTERNATIVE 1: NO ACTION ALTERNATIVE

As construction has not yet commenced, the No Action Alternative remains a possible, albeit not preferred, scenario. No DSMP actions would occur. The safety risks would remain. The 2012 EIS adequately describes this alternative and analyzes potential impacts in detail. Therefore, this SEA does not reiterate the No Action Alternative.

2.2 ALTERNATIVE 2: FEIS PROPOSED ACTION AND SEA REFINEMENTS

The 2012 EIS and SEA refinements define and discuss the DSMP actions (Figure 2). Alternative 2 does include lowering of reservoir water levels for construction actions. The 2012 EIS evaluated water levels lowered to a reservoir pool of approximately 72,000 AF or elevation 2,537.76 feet (NAVD 88)[2] from June 2019 through February 2020 (9-months) to construct a berm and relocate the Borel Canal. SEA 4 removed this construction action from the approved plan. The 2012 EIS also evaluated water levels lowered twice to elevation 2,537.76 feet during the fall 2020 to spring 2021 time period (4-6 months total) to construct an approach channel and remove a section of the existing Borel Canal. This construction action remains part of the approved plan. Overall, the 2012 EIS and SEA refinements evaluated a total reservoir drawdown period of 13-15 months. Please refer to the EIS and SEA's for a full Alternative 2 description.

2.3 ALTERNATIVE 3: PROPOSED ACTION ALTERNATIVE – TEMPORARY WCM DEVIATION

This alternative is the same as Alternative 2 EIS Proposed Action and SEA Refinements except:

- The reservoir would be actively managed under a temporary WCM deviation to a 170,000 acre foot (AF) reservoir pool, if necessary, seasonally November 1 to February 1 each year that the DSMP is under construction; and
- Kern River Valley Specific Plan (KRVSP) noise element restrictions identified in SEA 3 do not apply to the French Gulch boat ramp construction activities

Total DSMP construction duration estimates range from 42 to 48 months with a start date of October 2017. The Borel Canal drawdown in the fall 2020 to spring 2021 would overlap one season. The proposed temporary WCM deviation defines these seasonal time-periods and describe the rule curve (Figure 3). The WCM deviation differs from the existing 1978 WCM in that water releases would be managed to maintain the reservoir pool at or below 170,000 AF or approximately elevation 2,560 feet during the seasonal period noted above versus the current practice that allows for encroachment into the pool during certain forecasted water years.

USACE WCM deviation actions would be:

- Maintain water levels at or below the Supplemental Water Control Diagram (Figure 3) November 1 to February 1 at 170,000 AF

[2] All elevations in this document are based on North American Vertical Datum 1988 (NAVD 88) unless otherwise noted.

- Set Schedule 1 releases per antecedent basin conditions for forecasted rain and run-off
- Release water above 170,000 AF at rate sufficient to maintain flood control space
- Limit water encroachment into flood control space unless an event causes a temporary encroachment (eg. above normal and very wet water years such as water year 2017)
- Return to flood control pool water levels as quickly as possible without exceeding channel capacities or causing excessive damage downstream of the dam

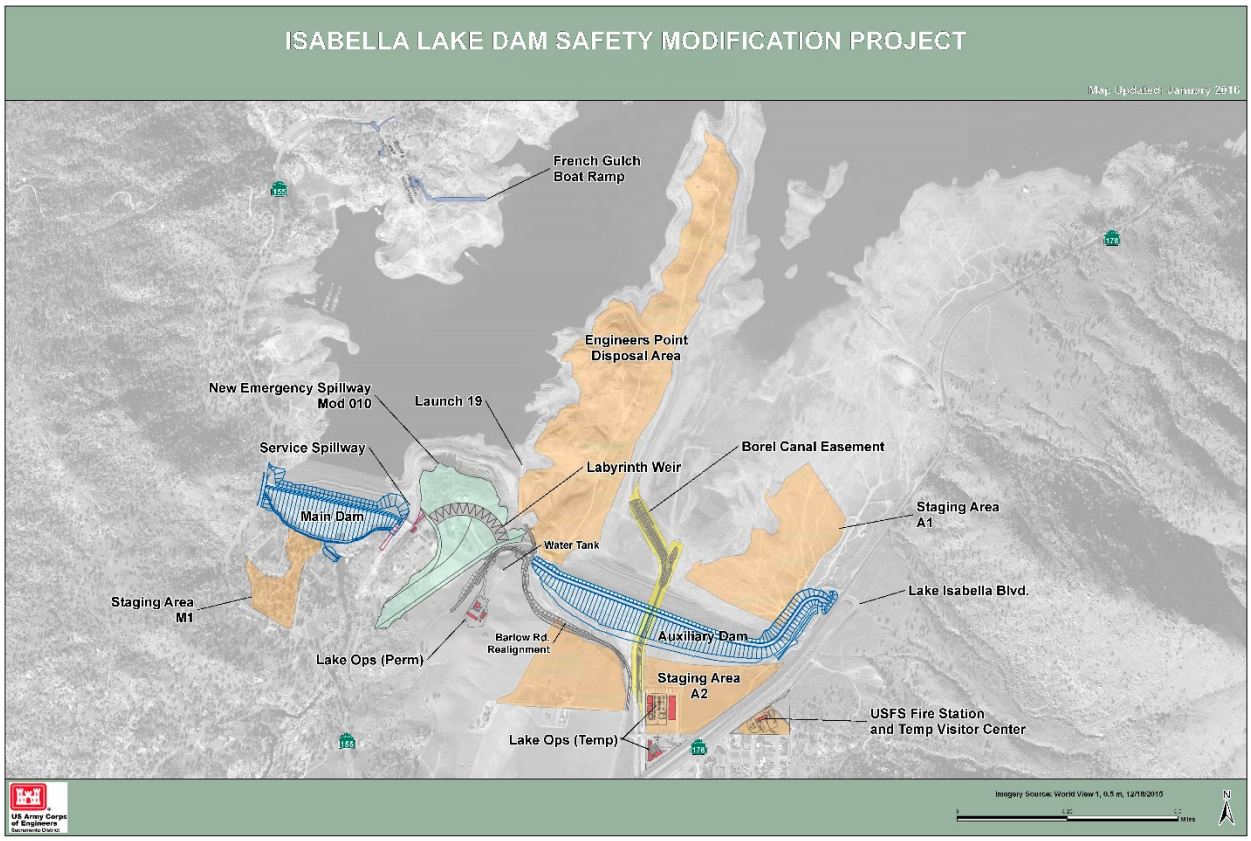
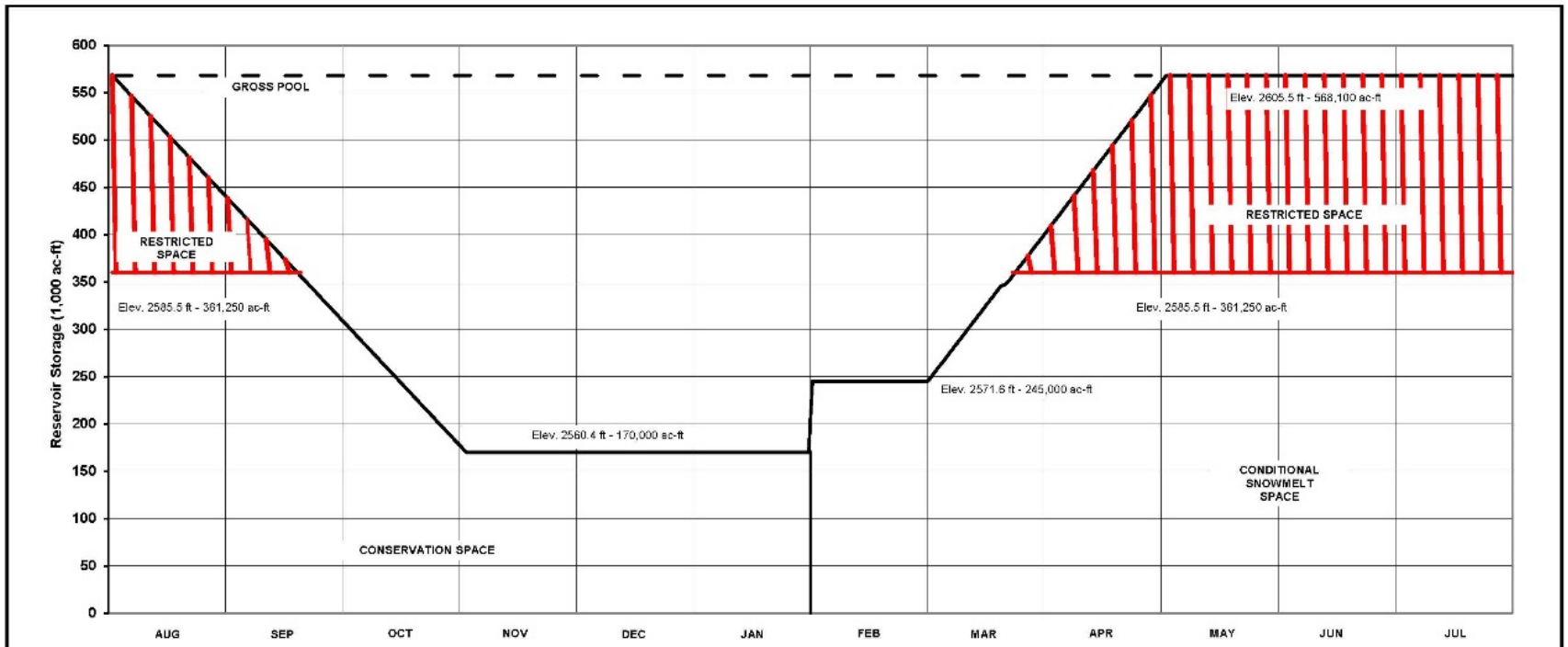


Figure 2 Isabella DSMP

Releases would target keeping the pool at or below the rule curve for the duration of the construction contract. This would allow the construction contractor to more efficiently plan and schedule construction operations, thus reducing the time the facility remains under the IRRM. Water would not encroach into the flood control space unless an event caused temporary encroachment (e.g. water year 2017). All potential impacted water users will be alerted to any change in operational parameters before they occur.

The proposed action noise element is to allow construction activities Monday through Saturday 7:00AM to 7:00PM consistent with the SEA 6 State Route 155 modifications, and possible work outside of these parameters to accelerate the project schedule. Blasting to remove a large rock formation is no longer required.



1. This Water Control Diagram is a supplement to Plate A-7, Flood Control Diagram, of the Isabella Lake, Kern River, California, Reservoir Regulation Manual dated May 1953, Rev. January 1978.
2. Conservation Storage is limited to a maximum elevation 2585.5 feet (storage 360,000 acre-feet) between 20 March and 20 September.
3. The lake storage would be allowed to temporally encroach into the restricted area for large inflows; however the water level would be lowered to the maximum allowable elevation, according to this supplemental Water Control Diagram as quickly as possible without exceeding channel capacities or causing excessive damage downstream of the dam.
4. Between 20 September and 20 March, there will be no change in the conservation space. Floodwater will be stored temporarily in flood control space, if required, to control large inflows due to climatological conditions at the time.

ISABELLA DAM AND LAKE
KERN RIVER, CALIFORNIA

RESTRICTED CONSERVATION POOL SUPPLEMENTAL WATER CONTROL DIAGRAM

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

Prepared by WLJ

May-06

PLATE A-7A

Attachment B

Figure 3 Proposed Temporary Water Control Diagram Deviation

3 AFFECTED ENVIRONMENT AND CONSEQUENCES

This section describes the environmental resources in the construction footprint, as well as effects of the Alternatives on area resources. Each section below presents the existing resource conditions, environmental effects, and when necessary, mitigation measures that are proposed to avoid, reduce, minimize, or compensate for any significant effects. Impacts are identified as direct, indirect, or cumulative. Effects are assessed for significance established for each resource below.

3.1 ENVIRONMENTAL RESOURCES NOT EVALUATED IN DETAIL

Certain resources were eliminated from further analysis in this SEA because they are adequately covered in the Isabella Lake DSMP DEIS, FEIS, and SEA's 1 through 6, or they would not result in any new or substantially more severe significant direct and indirect effects, including short and long term effects, than were previously evaluated. These resource areas are as follows:

- Geology, Soils, and Seismicity
- Air Quality
- Biological Resources
- Hazardous, Toxic, and Radioactive Waste
- Traffic
- Socioeconomic and Environmental Justice
- Cultural Resources
- Aesthetics and Visual
- Public Health
- Utilities and Infrastructure
- Land Use
- Cumulative

3.2 WATER RESOURCE (WATER SUPPLY)

3.2.1 Regulatory Setting

The Water Resources Section of the 2012 EIS sufficiently characterizes the regulatory setting for this resource.

3.2.2 Environmental Setting

The Water Resources Section of the 2012 EIS and SEA 4 sufficiently characterizes the affected environment and management for this resource. This includes the existing IRRM operating restriction and reservoir drawdown for the Borel Canal related work. However, the 2012 EIS does not discuss in detail water years as related to water supply operations (e.g. Central Valley Project and State Water Project), or the existing Water Control Manual and downstream releases.

Water years run October 1 through September 30, and are categorized as Wet, Above Normal, Below Normal, Dry, and Critical. California was in a five-year drought entering water year 2017. The Isabella Lake region hit historic lows, approximately 2522.5 ft elevation, during the months of September through November 2016. However, water year 2017 was a wet water year with an estimate of more than 1 million acre feet of snowmelt run-off entering the system. Water encroached into the flood control pool (170,000 AF or more) during the 2017 water year and approached within a foot of the IRRM elevation (note: water surface elevations and reservoir volumes are identified in Table 1).

Since dam construction finished and the reservoir filled in 1954, the 63-year hydrologic period of record (POR) (1954-2017) indicates water encroached into the flood control pool 40 out of 63 years with 10 water years presenting water management challenges to keep the reservoir below the rule curve (Figure 3) with water year 2017 being an example. Water storage in the other 23-years has been at or below the 170,000 AF reservoir pool.

There are three basic downstream Kern River release flows. The first includes a minimum 15 cubic foot per second (cfs) base flow, flows to power several run of the river hydroelectric facilities, and Water Master directed releases for water supply and irrigation purposes. The second are Schedule 1 releases, which are maximum possible releases without exceeding the downstream irrigation and spreading capacities. The final releases are Schedule 2, which are Schedule 1 releases plus supplemental flows calculated per the WCM for flood control purposes.

Downstream releases have an average annual flow of 946 cfs and a maximum daily flow reached 7,030 cfs[3]. A typical sustained released that could be safely passed through the downstream channel was approximated at 4,600 cfs prior to water year 2017. The 2017 wet water year required sustained downstream releases of 5,400 cfs to keep the water surface elevation below the IRRM. Therefore, if inflows are greater than the maximum water releases, water would be stored in the flood control pool to protect life and property downstream. In the unlikely event that any water is stored above 2,589.26 feet due to a late season rainstorm, the lake water levels would be lowered as rapidly as possible to return the lake water to an elevation at or below 2,589.26 feet. Releases would continue to follow the WCM that can be safely passed downstream by the local interests without exceeding the channel capacities of the downstream area below the dam (USACE 2008b).

3.2.3 Methodology and Thresholds of Significance

This section includes an analysis and determination of the impacts of the project alternatives on water resources. The analysis considered whether the project would:

- Substantially alter water supplies to downstream water right's holders
- Exceed downstream channel capacities

[3] In 1966, downstream flows reached 72,782 cfs.

3.2.4 Effects

The 2012 EIS evaluated the potential effect of additional water releases and lower reservoir levels (72,000 AF, 2,543.76 feet) over a total of 13-15 months for construction work on the Auxiliary Dam (9-months) and Borel Canal (4-6 months). Lower reservoir levels are no longer required for the Auxiliary Dam work. Borel Canal work will still require 4-6 months of reduced water levels to complete construction activities. This effects analysis only examines those water years where flows are managed to maintain the reservoir pool at or below the 170,000 AF volume, elevation 2,560 feet. To project the potential WCM deviation management measures, potential water releases are compared to the Isabella historic POR hydrology and downstream releases. Similar to the 2012 EIS, changes in the frequency and volume of water releases during construction could affect agricultural production efficiency in the Kern River Valley in the short term.

3.2.4.1 No Action

Under the No Action Alternative, there would be no remedial improvements to the Isabella Dam. The IRRM operating restriction could become permanent. It is possible that without dam safety modifications to reduce the risk of dam failure and life safety concerns to tolerable levels, a permanent operating restriction would be necessary that may further reduce the peak operational lake level. However, despite risk reduction measures, the Isabella Dam would still possess an unacceptably high likelihood of failure under the No Action Alternative. The potential environmental, economic, and human consequences of dam failure would remain unacceptably high as described in the 2012 EIS. This alternative may require aggressive downstream releases to keep the reservoir below the WCM's IRRM that could exceed channel capacities causing significant damage. Long-term water storage would be curtailed significantly impacting long-term water supplies.

3.2.4.2 FEIS Proposed Action and SEA Refinements

Under this alternative, the DSMP project is implemented as described in the EIS and SEA refinements. Reservoir pool elevations would be lowered for the Borel Canal work only. No effects beyond those already evaluated in the 2012 EIS and SEA documents are expected. This alternative has no effect on the downstream channel, and is anticipated to be a significant positive effect on long-term water supplies. However, if water years continue in the short-term similar to water year 2017, without the benefit of the WCM deviation, construction delays could occur when the flood control pool is encroached. For example, construction activities such as excavation of the dam toe could be delayed and extend the construction schedule. Any delay would prolong the dam safety risk.

3.2.4.3 Proposed Action – WCM Deviation

Implementing the proposed action could result in more downstream water releases in approximately 48% of water years (30 years) in the 63-year POR to maintain the reservoir pool at or below the 170,000 AF volume. The POR also indicates that 16% of the time (10 years) water will encroach into the flood control pool regardless of level of downstream release

volumes/flow rate. Water year 2017 is an example of a wet year where precipitation and reservoir inflow encroached into the flood control pool even with sustained downstream releases averaging 5,400 cfs. Approximately 36% of the time (23 years), precipitation and inflow would not encroach and require additional releases. Figure 4 is a recent snapshot of the POR from 1999-2013. Water years 2013-2016 were drought years and reservoir pool elevations fell below the construction pool line, which is the lake level required for the Borel Canal construction work.

USACE would continue to inform the Water Master and other downstream water users of water storage and release operations associated with the proposed project. During the times described above when the lake is controlled at or below the 170,000 AF storage level, USACE would ensure that the expected flows under agreement with the downstream users are provided. In the event additional flow releases (eg. WCM Schedule 2) are required, the 2012 EIS evaluated a similar range of months (13-15) and quantities of off-season water releases by USACE from Isabella Lake. The 2012 EIS assumes that downstream water users have sufficient storage above and below ground to receive large off-season water releases, and they can continue to make the stored water available during the summer growing season. The need for and provision of such storage during the multiyear construction period would be coordinated on an ongoing basis by USACE with the downstream water users and Kern River Water Master.

The total economic effect on agriculture in Kern County of maintaining 170,000 AF water storage in Isabella Lake November 1 to February 1 during construction would depend on annual precipitation levels and if the water that would have been stored is used, banked, or stored. There would be no effect during 33 years of the POR because the water levels either would not exceed 170,000 AF (23 years) or the inflow is to such an extent that encroachment into the flood control pool will occur regardless of downstream flow release volumes (10 years). The remaining POR (30 years) could require additional downstream releases to maintain the flood control pool. The 2012 EIS anticipated that downstream irrigators have sufficient in-ground and surface storage to handle excess and pre-irrigation-season releases of Isabella Lake water. Adverse impacts on water supply for agriculture would be low, short-term and less-than-significant.

Storage	Elevations (ft)		
(ac-ft)	NAVD88	NGVD29	IPD
568,100	2609.26	2606.65	2605.50
361,250	2589.26	2586.65	2585.50
245,000	2575.33	2572.72	2571.57
170,000	2564.18	2561.57	2560.42
72,737	2543.15	2540.54	2539.39

Table 1 – Water Storage and Surface Elevations

Overall, the Proposed Action WCM deviation could affect a three-month period each year during the Isabella DSMP construction estimated to last up to 4-years. This is a potential 12-months total over the life of construction, which seasonally coincides with lower downstream water supply demands. The 2012 EIS evaluated up to 13-15 months of reservoir drawdown to elevation

2,540 feet and 72,000 AF for Auxiliary Dam and Borel Canal work. Approximately 4-6 months is still required for the Borel Canal work. Therefore, the Proposed Action WCM deviation in addition to the Borel Canal work falls within the same range evaluated under the 2012 EIS or could increase the drawdown period by 3 months. This increased drawdown time could affect water supplies. Consistent with the 2012 EIS evaluation, the impact on downstream water user's municipal, industrial and agricultural supply is less than significant and no mitigation is proposed because:

- Typical, agricultural releases from Isabella Lake are spread to recharge the groundwater system or used for irrigation. Additional releases could be used, banked, or stored for later use. If releases exceed the downstream spreading capacity, flows are diverted to the Kern River-California Aqueduct Intertie; and
- Water diverted to the Kern River-California Aqueduct Intertie can be sold, exchanged, or banked with other State Water Project Contractors and individuals.

Downstream channel releases would remain within the existing minimum, maximum, average, and sustained downstream release volumes. Therefore, there would be no change from the 2012 EIS effects analysis and the downstream channel impacts are less than significant and no mitigation is proposed.

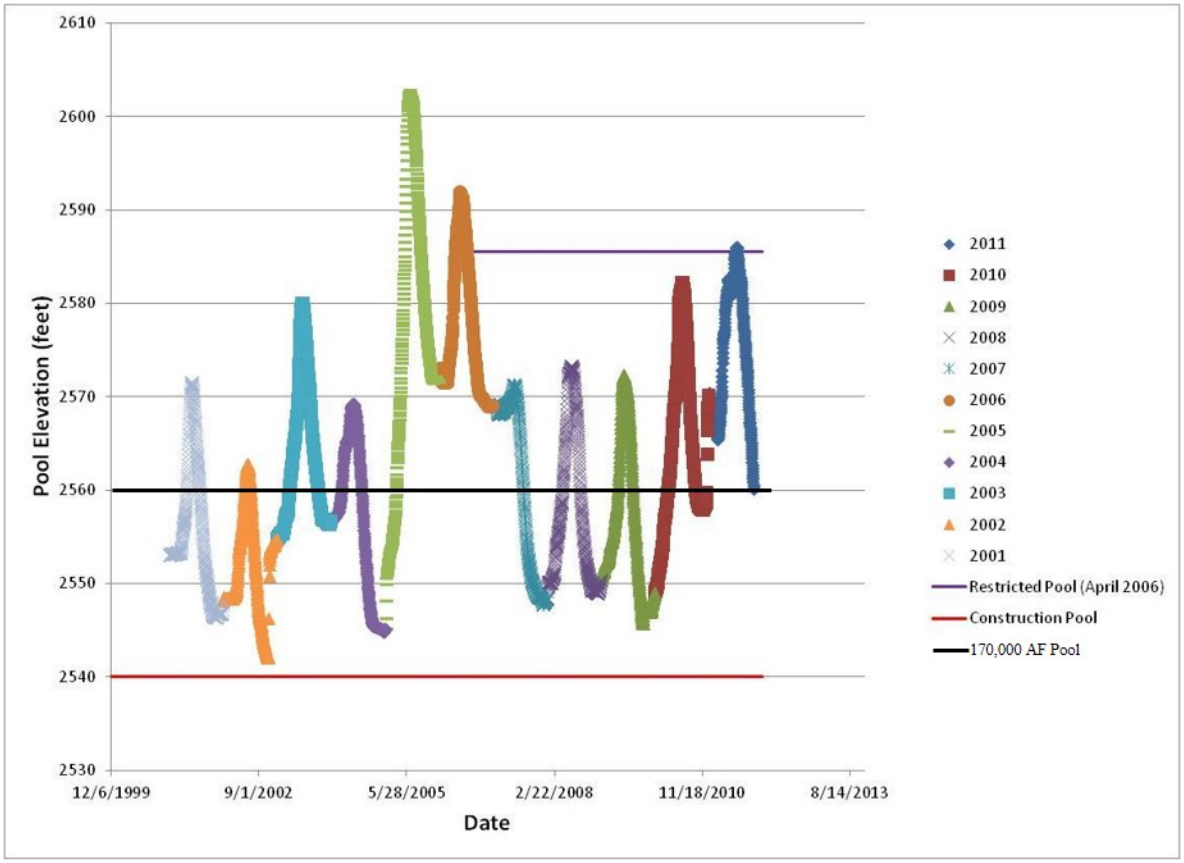


Figure 4 -1999-2013 Pool Elevations

3.3 RECREATION

3.3.1 Regulatory Setting

The recreation section of the 2012 EIS sufficiently characterizes the regulatory setting for this resource. USACE coordinated with the Office of Management and Budget and USFS, and concluded that authority exists to relocate or replace existing USFS facilities impacted by the Isabella Lake DSMP (USACE 2015b) with in-kind facilities as mitigation actions. With this mitigation, permanent loss of recreational facilities, opportunities, or resources would not occur.

3.3.2 Environmental Setting

Overall existing conditions are as described in the 2012 EIS; however, due to the extreme drought, recreational opportunities on Isabella Lake were severely affected. Water year 2017 was a Wet year and recreation is returning to pre-drought levels.

3.3.3 Methodology and Thresholds of Significance

Effects on recreation would be considered significant if the alternative would decrease recreational activity within the project area, or 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.

3.3.4 Effects

3.3.4.1 No Action

Under the No Action Alternative, there would be no remedial improvements to the Isabella Dam. The IRRM could become permanent. It is possible that without dam safety modifications to reduce the risk of dam failure and life safety concerns, permanent operational changes would further reduce the lake level. The likelihood and consequences of dam failure would continue. In the event of a dam failure, nearly all existing water-based recreational opportunities, resources, facilities, and activities would be lost or severely disrupted during emergency operations and subsequent repairs to the dam. While land-based recreation would remain, such as hiking, camping, and urban recreation, the use and quality of these activities would substantially diminish due to inundation damage. This alternative would have a significant adverse effect on recreation.

3.3.4.2 FEIS Proposed Action and SEA Refinements

Under this alternative, the DSMP project is implemented and as described in the EIS and SEA refinements. Reservoir pool elevations would be lowered for the Borel Canal work only. No effects beyond those already evaluated in the 2012 EIS and SEA documents are expected. This alternative has minimal effect to positive effects on recreation opportunities and resources.

However, without the benefit of the WCM deviation, construction delays could occur when the flood control pool is encroached, potentially prolonging the need for the IRRM's restricted pool elevation.

3.3.4.3 Proposed Action – WCM Deviation

The recreation facilities at Isabella Lake generally do not require specific releases for either in-reservoir or downstream recreation. Local water users signed the November 1963 Agreement for Establishment and Maintenance of a Minimum Recreation Pool of 30,000 Acre-Feet in Isabella Lake. The release of water to reduce the reservoir pool to 30,000 acre-feet is made only if required for flood risk reduction or by mutual agreement of the water rights holders (Kern County 1963). A contract between the United States and downstream water users incorporated this agreement in 1964. Lake levels have a direct correlation on marina capacities. At the current IRRM high water lake levels of 360,000 acre-feet, the marinas are at full capacity. At low water lake levels of 180,000 acre-feet, French Gulch marina is at 78 percent capacity, North Fork marina is at 67 percent capacity, and Red's marina is at 69 percent capacity (Colson 2011). As an example, Red's Marina operates on weekends beginning in March-April and moves to full week operations in April-May through Labor Day. Peak season runs Memorial Day through Labor Day weekends, and includes the fishing derby, whose spring date has varied annually.

Overall, the Proposed Action WCM deviation could affect a three-month period each year during the Isabella DSMP construction estimated to last up to 4-years. Each seasonal three-month period occurs during the off-season (Figure 3), and would total approximately 12-months during the estimated 4-year construction schedule. The 2012 EIS evaluated up to 13-15 months of reservoir drawdown for Auxiliary Dam and Borel Canal work. Approximately 4-6 months is still required for the Borel Canal work. Therefore, the Proposed Action WCM deviation increases the evaluated drawdown periods by 3-5 months. The off-season drawdown is not anticipated to impact reservoir recreation activities, and represents no change from the 2012 EIS and SEA refinement effects analysis. Increased downstream releases could be a negligible positive effect on rafting recreation, which typically operates May 15 to September 15, by increasing the rafting operating season. Releases that are sufficient to support whitewater rafting are governed by historic water rights, power diversion rights, agreements on project operation, and flood reduction operation of Isabella Dam and Lake. No recreation mitigation is proposed.

3.4 NOISE

3.4.1 Regulatory Setting

The Noise and Vibration Section for the 2012 EIS (DEIS Section 3.8) sufficiently characterizes the regulatory setting for this resource.

3.4.2 Environmental Setting

The Environmental Effects section of the 2012 EIS, SEA 3, and the Final Noise and Vibration Analysis: Preferred Alternative (USACE 2012c), characterize the general affected environment

for this resource. There have been no studies or new data generated to date regarding assessment of the affected environment.

Noise-sensitive receptors at the French Gulch RA include the Nuui Cunni Inter-tribal Cultural Center, the SQF French Gulch Group Campground, the Kern County Boat Patrol Office and recreationists that utilize the French Gulch RA for day use activities. The Nuui Cunni Center provides public and tribal resources and special events on weekends and weekdays. The Kern County Boat Patrol Office provides public services throughout the week, but services are most requested on summer weekends and during organized fishing events and holidays. The French Gulch Group Campground is occupied primarily during weekend and holiday events in the spring, summer and early fall. Summer is the peak season of recreational use at the French Gulch RA.

3.4.3 Methodology and Thresholds of Significance

The 2012 EIS evaluated each alternative and considered an alternative to have a significant noise and vibration effect if the project would result in:

- Exposure of sensitive receptors to or generation of excessive ground borne vibration or ground borne noise levels;
- A substantial permanent increase (5 dB) in ambient noise levels in the project vicinity above levels without the project.
- A substantial temporary or periodic increase (5 dB) in ambient noise levels in the project vicinity above levels existing without the project.

3.4.4 Effects

3.4.4.1 No Action

Under the No Action Alternative, there would be no remedial improvements to the Isabella Dam. The IRRM operating restriction could become permanent. It is possible that without dam safety modifications to reduce the risk of dam failure and life safety concerns to tolerable levels, a permanent operating restriction would be necessary that may further reduce the peak operational lake level. However, despite risk reduction measures, the Isabella Dam would still possess an unacceptably high likelihood of failure under the No Action Alternative. The potential environmental, economic, and human consequences of dam failure would remain unacceptably high as described in the 2012 EIS. Ambient noise levels would remain unchanged.

3.4.4.2 FEIS Proposed Action and SEA Refinements

Under this alternative, the DSMP project is implemented as described in the EIS and SEA refinements. Construction restrictions for the French Gulch Recreation Area would remain in effect. No effects beyond those already evaluated in the 2012 EIS and SEA documents are expected. Without the benefit of the Proposed Action, construction delays could impact

recreational use and access to the lake if Boat Launch 19 is closed and the new French Gulch boat ramp is not fully functional.

3.4.4.3 Proposed Action

The 2012 EIS identified the French Gulch Recreation Area as a noise sensitive area (Site 14) with an existing ambient noise level of 55 dB. Temporary construction noise impacts at no time exceeded the 65 dB level and daily noise increases were evaluated at 4 dB. Noise impacts were less than significant. SEA 3 evaluated improvements to the French Gulch RA facilities – boat launch construction, new restrooms, parking lot paving. Construction noise impacts were still temporary and expected to occur during a 4-6 month time period outside of the peak recreation season. Construction impacts were less than significant if construction complied with KRVSP noise element policy[4], and no weekend construction. The proposed action focus is on the potential effect of Saturday construction, and possible construction on Sunday or outside of the 7:00 AM to 7:00 PM time-period.

At the French Gulch Recreation Area, noise decibels associated with heavy equipment grading, site preparation, travel, and associated activities could exceed ambient noise levels at nearby sensitive receptors on an intermittent and temporary basis during construction. Project generated noise and vibration from heavy truck, dozer and grading equipment is approximately 85 dB at 50 feet. Noise levels decline approximately 6 dB for every doubling of distance from the source. The Kern County Boat Patrol Office and campground are located more than 250 feet away (and some campsites as far as 400 feet) from the French Gulch entrance road. The Kern County Boat Patrol Office and campground are more than 500 and 800 feet respectively from the new boat launch site and parking lot where material would be stockpiled. At this distance and with existing ambient noise background of SR 155, noise impacts would be consistent with the 2012 EIS evaluation and not significant.

Shoreline recreation distance from the stockpile areas and the boat launch would vary based on reservoir surface elevation. An estimated proximity would be 150 to 300+ feet. Construction noise would not be significant on shoreline recreation because access through the construction site would be limited. The public should not be accessing this area of the lake shoreline. In addition, construction would occur during the off-season. If construction extends into the Fishing Derby weekend or summer season (Memorial Day weekend through Labor Day weekend), construction activities would not occur during the Derby or holiday weekends (Friday through Monday).

The Nuui Cunni Cultural Center is located approximately 80 feet from entrance road leading to the stockpile parking lot area, and approximately 300+ feet from the new boat launch construction area. Construction traffic would result in intermittent and temporary noise increases but would not result in ambient noise increases exceeding the 5 dB increase threshold. Boat launch construction could result in similar noise effects. The distance to the Center (300+ feet) would see an approximate 50 dB reduction from source area (new boat launch) based on an

[4] KRVSP noise element policy is to limit construction Monday through Saturday 7:00 AM to 7:00 PM

estimated 85 dB noise level at 50 feet, a max noise level of approximately 110 dB at the source, and 60 dB at 300 feet. The construction noise impacts represent no change from those evaluated in the 2012 EIS and SEA 3. Therefore, the impacts are less than significant. However, to further lessen potential noise issues and be consistent with the concurrent SR 155 construction modification actions, implementation of mitigation measures from the 2012 EIS and SEA 6 are incorporated. This mitigation includes:

- Construction hours would be limited to the normal daylight working hours of 7:00 am to 7:00 pm, Monday through Saturday. Any proposed change to these working hours will require USACE Sacramento District contracting officer and project manager review and approval. If inclement weather during construction effects the construction schedule, a variance to allow extra work shifts outside of those work hours may be approved to recover schedule necessary to finish construction before the summer recreation season. If any changes outside of normal hours is required, USACE will notify the Nuui Cunni Center, the USFS, and the Kern County Boat Patrol in advance of the change.
- A contractor-prepared Construction Noise and Vibration Monitoring Plan would be prepared before construction work.
- If project delays are incurred necessitating work through April or the summer recreation season, construction would not occur during the Fishing Derby event, Memorial Day, Fourth of July, and Labor Day weekends starting Thursday at midnight through Monday.
- The contractor superintendent would serve as a noise coordinator to resolve noise complaints. The noise coordinator contact information would be provided to sensitive receptors to report any noise complaints or concerns.
- Noise monitoring would commence with any repeated public nuisance complaints.
- All equipment would be equipped with noise control devices (e.g. mufflers), in accordance with manufacturer's specifications.
- Equipment would be periodically inspected to ensure proper maintenance and presence of correct noise control devices.
- Stationary equipment would be located as far as feasible from sensitive receptors and equipped with engine-housing enclosures as feasible.
- Portable noise barriers would be used to shield stationary equipment as needed and appropriate.
- Excessive idling of equipment would not be permitted.
- Written notice of construction-related activities and/or a schedule would be provided to nearby sensitive receptors including the USFS for the French Gulch RA, the Nuui Cunni Cultural Center and Kern County Boat Patrol.
- The hauling of material along any sensitive routes close to sensitive receptors would be encouraged to take place within the hours from 8 am to 5 pm.
- Engine braking (jake brakes) would be discouraged along routes with sensitive receptors.

4 LIST OF PREPARERS

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6 APPENDICES

Response to Public Comments