

# **Draft Supplemental Environmental Assessment**

## **Isabella Lake Dam Safety Modification Project**

### **USDA Forest Service Administration and Recreation Facilities Relocation**

**Kern County, California**

**November 2015**



**US Army Corps  
of Engineers®**

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



**U.S. Department of Agriculture, Forest Service  
Sequoia National Forest – Cooperating Agency**

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## LIST OF ACRONYMS AND ABBREVIATIONS

ADA	Americans with Disabilities Act
ANSI	American National Standards Institute
APE	Area of Potential Effect
APN	Assessor Parcel Number
BLM	United States Bureau of Land Management
BMPs	Best Management Practices
BPGPSP	Bob Powers Gateway Preserve Strategic Plan
CNEL	Community Noise Equivalent Level
Corps	United States Army Corps of Engineers
CO <sub>2</sub> e	Carbon Dioxide Equivalent
CVRWCB	Central Valley Regional Water Quality Control Board
dB	Decibel
DSAC	Dam Safety Action Classification
DSM	Dam Safety Modification
DSS	Decent Safe and Sanitary
EIS	Environmental Impact Statement
EKAPCD	Eastern Kern Air Pollution Control District
EO	Executive Order
ER	Engineering Regulation
FONSI	Finding Of No Significant Impact
FS	U.S. Department of Agriculture Forest Service
HAWT	Horizontal-Axis Wind Turbine
HTRW	Hazardous, Toxic, and Radiological Waste
IRCC	Incident Response Command Center
IRRM	Interim Risk Reduction Measures
Isabella Dams	Isabella Lake Main Dam, Spillway and Auxiliary Dam
KWC	Kernville Work Center
KRV	Kern River Valley
KRVHF	Kern River Valley Heritage Foundation
Ldn	Day-Night Level

LEED	Leadership in Energy and Environmental Design
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
NAVD	North American Vertical Datum
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act of 1966
NO <sub>x</sub>	Mono-Nitrogen Oxides
OM	Operations and Maintenance
OSHA	Occupational Safety and Health Administration
PED	Preconstruction Engineering and Design
PM <sub>10</sub>	Particulate Matter
ROD	Record of Decision
ROG	Reactive Organic Gases
RV	Recreational Vehicle
SEA	Supplemental Environmental Assessment
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SO <sub>x</sub>	Oxides of Sulfur
SWPPP	Storm Water Pollution Prevention Plan
UBC	Uniform Building Code
UCDC	United States Department of Commerce – U.S. Census Bureau
USA	United States Forest Service and Corps of Engineers
USC	United States Code of Federal Regulations
USFS	U.S. Department of Agriculture Forest Service
USGS	U.S. Department of Interior Geological Survey
VAWT	Vertical-Axis Wind Turbine
VELB	Valley Elderberry Longhorn Beetle
VIC	Visitor Information Center



## **CHAPTER 1.0 PURPOSE AND NEED FOR THE ACTION**

### **1.1 INTRODUCTION**

Pursuant to the National Environmental Policy Act of 1969 (NEPA), as amended, this USDA Forest Service Administration and Recreation Facilities Relocation Supplemental Environmental Assessment (SEA) discusses and discloses beneficial or adverse potential effects that would result from the proposed relocation of specific USDA Forest Service, Sequoia National Forest (USFS) recreation, administrative office and fire station response facilities affected by construction of the Isabella Lake Dam Safety Modification (DSM) Project. The U.S. Army Corps of Engineers, Sacramento District, is the lead agency and the USFS is the cooperating agency for the purposes of NEPA.

The Isabella Lake DSM Project was previously evaluated under NEPA in the Isabella Lake Dam Safety Modification Project Environmental Impact Statement Draft of, March 2012, and a Final Environmental Impact Statement (EIS) document of the same title in October 2012. The EIS described and assessed impacts to USFS recreation and office facilities affected by the Isabella Lake DSM Project. The Record of Decision (ROD), issued by the Corps on December 18, 2012, stated that the Corps lacked authority or appropriation to mitigate with relocations, but this authority was later found within a 1964 Memorandum of Agreement. The relocation alternatives identified within this draft SEA constitute proposed mitigation for adverse effects identified from the Isabella Lake DSM project. Alternatives assessed within the document are proposed actions which best fulfill the purpose and need of the project.

### **1.2 LOCATION**

Isabella Lake is situated approximately 35 miles northeast of Bakersfield, along Highway 178 and one mile upstream of the town of Lake Isabella (Figure 1). Water from the Kern River is retained by Isabella Lake Dam to form Isabella Lake in the southernmost part of the Sequoia National Forest, Kern County, California. As the most southerly of the major streams flowing into the San Joaquin Valley, the Kern River drains an area of 2,100 square miles of the Sierra Nevada. The North and South Forks of the Kern River comprise the headwaters, and each flows approximately 90 miles from the High Sierra to their confluence, about 1¼ miles upstream of the dam site. Downstream of Isabella Dam, the Kern River flows through the Kern River Gorge, through the Kern Valley, and into the San Joaquin Valley.

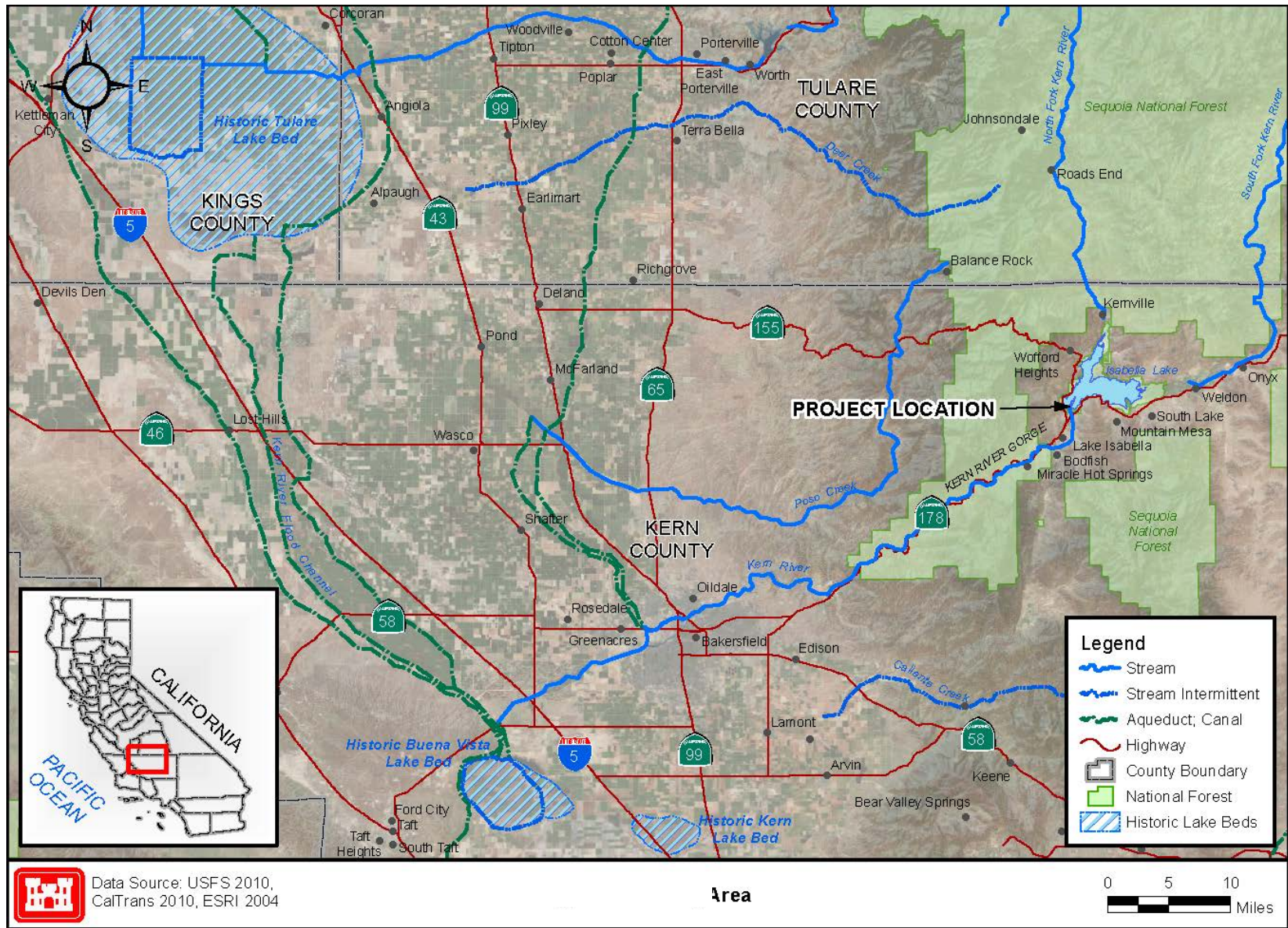


Figure 1. Project Location Map.

The locations of U.S. Department of Agriculture, Sequoia National Forest, Kern River Ranger District (USFS) recreation and administrative facilities evaluated in this SEA are found within the Lake Isabella North U.S. Geological Survey (USGS) map at Township 26 South, Range 33 East, and Section 30 within Kern County.

## **1.3 PROJECT AUTHORITY**

### **1.3.1 Isabella Lake DSM Project Authority**

The initial study for a flood reduction and water supply project on the Kern River was authorized by the Flood Control Act of 1936, June 22, 1936. Construction of Isabella Dam and Lake was authorized by the Flood Control Act of 1944, Public Law 78-534, Chapter 665, Section 10, page 901. Additional federal project authority is detailed in the Draft and Final EIS for the Isabella Lake DSM Project (Corps 2012).

Engineering Regulation (ER) 1110-2-1156 (Final 28 October 2011) describes the guiding principles, policy, organization, responsibilities, and procedures for implementing risk-informed dam safety program activities. It also describes the dam safety portfolio risk management process that is used within the Corps. The purposes of the dam safety program are to protect life, property, and the environment by ensuring that 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, the Corps is provided authority to take expedient actions, require personnel to evaluate the threat, and design and construct a solution.

### **1.3.2 Authority for Mitigation of Administration and Recreation Facilities**

The Isabella Lake DSM Project ROD for the 2012 EIS, stated that the Corps would explore and identify mitigation measures to offset adverse effects on recreation resulting from construction of the Isabella Lake DSM Project. The ROD also described the Corps lack of authority to mitigate for USFS office and recreation facilities adversely affected by the Project. Since release of the 2012 EIS and ROD, the Corps, in coordination with the Office of Management and Budget, has concluded that sufficient authority exists to allow the Corps to use its appropriated funds to relocate all USFS facilities impacted by the Isabella Lake DSM Project. Removal and replacement of affected USFS facilities was found to be consistent with a 1964 Memorandum of Agreement (MOA) (Corps 1964) and a 1991 *Memorandum Of Understanding Between And Pertaining To Interchange Of Lands And Management Of The Water And Land*

*Resources At Isabella Lake Project, Sequoia National Forest, Kern County, California (MOU)* (Corps 1991). The following text is from the 1964 MOA:

*Improvements and structures of the Department of Agriculture which will be destroyed or rendered useless by reason of the water resource development and which are still needed by the Department of Agriculture will be removed or replaced by the Department of the Army at a location to be determined by the Department of Agriculture in such kind and quantity as will provide levels of service and/or access at least equivalent to those existing prior to the project construction, subject to interagency budgetary procedures.*

These written agreements state, in part, that if the Corps construction at Isabella impacted existing USFS structures or facilities, the Corps would replace the facilities with an equivalent level of service in a location determined by the USFS.

#### **1.4 ISABELLA LAKE DSM PROJECT BACKGROUND**

In 2005, the Corps determined through an agency 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. The Corps commenced a dam safety study, and based on the risk assessment, the Corps classified the Isabella Dams as Dam Safety Action Classification (DSAC) I in 2008 because elements of the Isabella Dams have been determined to be unsafe under extreme loadings and could result in significant and catastrophic consequences downstream.

The Corps completed a DSM Report in October 2012 (USACE 2012) that recommended remediation measures to reduce the public safety and property damage risks posed by floods, earthquakes, and seepage at the Isabella Dams. In October 2012, the Corps published a Final EIS for the proposed remediation of the Isabella Dams. The EIS described the anticipated direct and indirect impacts expected to occur as a result of the remediation, including impacts to existing federal, state, local and privately owned infrastructure in the Isabella Dams vicinity.

The approved plan includes the following summary of refinements, which were described in the Final EIS:

- Main dam full height filter and drain, with approximately 16-foot crest raise;
- Retrofit of main dam control tower for access with the raised dam;
- Improvements to the existing spillway;

- Construction of an approximately 900-foot wide emergency spillway;
- Auxiliary dam modification, with approximately 16-foot crest raise, approximately 80-foot wide downstream buttress, and shallow foundation treatment;
- Realignment of the Borel Canal conduit through the right abutment of the auxiliary dam;
- Relocation of the auxiliary dam control tower outside of the potentially liquefiable foundation zone; and,
- Relocation of State Routes 155 and 178 to accommodate the dam crest.

Since release of the 2012 EIS, the approved plan has been refined to eliminate the need for realignment of State Route 155, State Route 178, and Lake Isabella Blvd. Removal of the highway realignment from the Isabella DSM project eliminates substantial construction activity that was previously planned to be constructed in advance of the main DSM work. As a result, project costs have been reduced and environmental, economic, and human consequences have been further minimized. This refinement would meet essential Corps guidelines in accordance with the Dam Safety policy document ER 1110-2-1156. Structural highway refinements are further described in the Supplemental Environmental Assessment for the Phase II Real Estate Acquisition and Relocation Kern County, California (USACE 2015).

### Recent Developments

On February 20, 2015, the Corps was invited to attend a Constituent meeting at the invitation of Congressman Kevin McCarthy (CA-23), to discuss an option for replacement of the USFS Lake Isabella Office visitor information center (VIC). Selected stakeholders were also invited, including the Bureau of Land Management (BLM), Kern River Valley Heritage Foundation, USFS, and the Lake Isabella Task Force, for a discussion of a potential multi-agency visitor center to be situated on the Bob Powers Preserve in Lake Isabella proper. The Bob Powers Gateway Preserve Strategic Plan (BPGPSP) (Kern River Valley Heritage Foundation 2012) was proposed at the meeting. The 18-acre property of the Bob Powers Preserve (BPP) is owned by the County and leased to the KRVHF for long-term operations and maintenance.

Kern County followed the February meeting with a memorandum to the Corps on July 13, 2015 (Kern County 2015), with support and cost estimates for a smaller, 1,900 sq. ft. modular multi-agency visitor information center (VIC) on the BPP to include the USFS, BLM, Kern County Park and Recreation, and the Kern Valley Chamber of Commerce. The memorandum suggested funds from the Corps be used to supplement the proposed VIC; and stated: "With the exception of the replacement costs of a USFS Visitor Center provided by the ACOE, funding for any expenses over and above the amount allocated by the ACOE, including

the expansion to accommodate a large Multi-Agency Visitor Center, would be outside the responsibility of the ACOE or the USFS”. Following the proposal by Kern County, the USFS



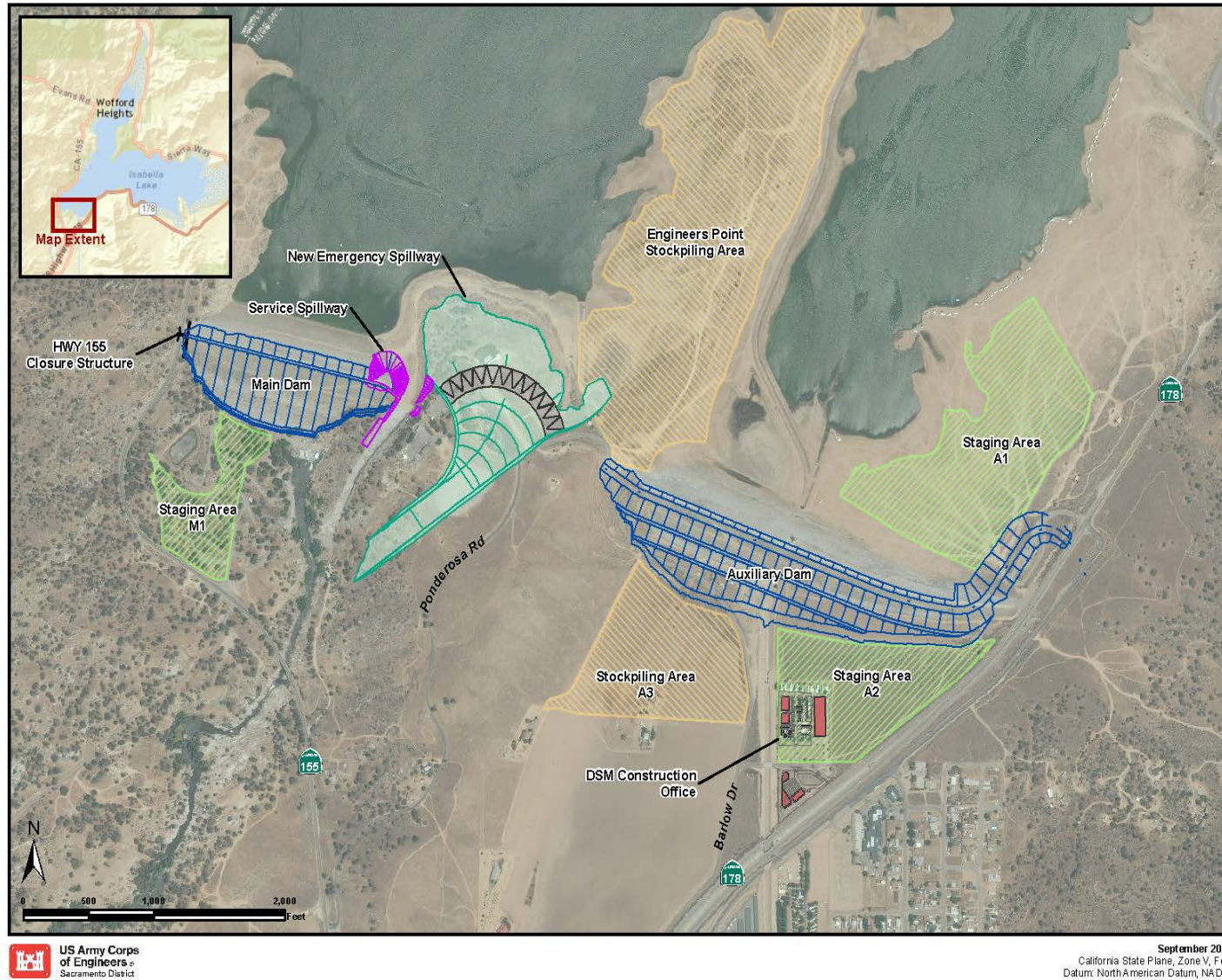


Figure 2. Isabella Lake DSM Project Features.

made a request to the Corps in September 2015 that a VIC of 900 to 1,400 sq. ft. be constructed by the Corps on the BPP per the Kern County and Kern River Valley Heritage Foundation VIC proposals.

A number of issues with the BPP site currently preclude assessment for decision purposes within this SEA, and make it necessary to defer NEPA assessment of a multi-agency visitor information center (VIC) on the BPP. The BPP site issues requires inter-agency commitment and cannot be resolved within the context of this relocation SEA, which must meet the primary goal of relocating USFS facilities before existing facilities are removed by the Isabella Lake DSM project.

In addition, with the current BPP project proposal, issues have been identified which could result in significant impacts requiring a different level of NEPA assessment and decision. Existing issues for deferring assessment of the BPP site to subsequent NEPA assessment are as follows.

The BPP is not currently under federal ownership. In general, the Corps will acquire the minimum interest in real property necessary to support the construction, operation, and maintenance of its projects (ER 405-1-12, Chapter 12, Paragraph 12-9a). However, because the USFS will ultimately be responsible for operating and maintaining the VIC, the USFS is taking the lead on identifying and investigating real estate and other issues that may affect any VIC alternative involving the BPP site. The USFS efforts are currently ongoing and have not yet been developed in sufficient enough detail to be included in this EA. Therefore, alternatives for the permanent relocation of the USFS VIC will be analyzed in detail in a subsequent environmental document.

Natural resource concerns at the BPP site constitute a potentially significant issue. A Forest Service and BLM Sensitive Species, the Alkali Mariposa lily (*Calochortus striatus*) is located on the BPP, which was established in part to protect and increase the Alkali Mariposa lily population (Kern River Valley Heritage Foundation 2012). The proposed development footprint would occur directly over the entire Mariposa lily population on the preserve. This plant is also rated as a State rare plant (rank of 1B.2), indicating it is fairly endangered in California though not yet listed. Additional global and state rankings of G3 and S3, respectively, indicate it is a plant of vulnerable status (CNPS 2015). The BPP, under Kern County approval, has also been utilized in the past as a Mariposa lily transplant area for mitigation of a private development project. At this time, there has been no documented success in maintaining viability of an entire Mariposa lily population by transplant actions.

Additional information on public involvement and regular status updates on the project can be found at the project website at: <http://bit.ly/IsabellaDam>.



## **1.5 NEED FOR THE PROPOSED ACTION**

The Sequoia National Forest, Kern River Ranger District (USFS), Lake Isabella administrative staff office, visitor information center, wood, and welding shop, sheds, and fire response facilities (USFS Lake Isabella Compound) are currently located within the construction footprint of the approved emergency spillway, and are slated for permanent removal as part of the Isabella Lake DSM Project (USACE 2012). Permanent relocation of these facilities, situated off of Ponderosa Way, is necessary before implementation of the Isabella Lake DSM Project in order to avoid disruption of USFS agency activities. Under the 1964 MOA, the Corps would provide to the USFS, replacement facilities in such kind and quantity as would provide equivalent level of service and access to that existing prior to project construction.

The Isabella Lake DSM Project EIS determined that the DSM Project would result in significant impacts on recreation. Recreation impacts were expected to result from the multi-year construction period where access to recreational opportunities and several key facilities would be restricted or eliminated. Loss and disruption of recreational areas and activities in the vicinity of the Isabella Lake DSM Project area was found to likely reduce the quality of the recreational experience in the project area. Increased concentrations of visitors in recreational areas adjacent to closed recreation facilities were identified as potential health and safety issues. These issues were expected to result from overcrowding of launch, restroom and parking facilities, and vehicle traffic congestion. Based on the findings in the final EIS, it was anticipated that the visitor experience would be substantially diminished at specific recreation areas if a recreation mitigation plan was not implemented to offset impacts. Recreation mitigation was determined to be necessary to provide for visitor safety in the areas adjacent to closed recreational facilities, and to comply with the commitments of the 1964 MOA.

## **1.6 PURPOSE OF THE PROPOSED ACTION AND SEA**

The purpose of the Proposed Action is to mitigate USFS administration and recreation facilities affected by the Isabella Lake DSM project. The purpose of this SEA is to assess the relocations of the USFS administration and recreation facilities affected by the DSM project. This SEA also fulfills the commitment to continue the NEPA analysis of the potential effects of implementing the Isabella Lake DSM Project. At the time of the DSM Project approval, specific unresolved issues were left for further analysis during the preconstruction engineering and design phase of the Isabella Lake DSM Project. As a result, it was determined that a series of supplemental NEPA analyses would be required at a later time to analyze the potential effects associated with these remaining issues.

Supplemental NEPA analyses, including the need for additional USFS recreational and administrative facility relocation, were identified in Section 1.9 of the Draft EIS and Section 1.4 of the Final EIS. This SEA also addresses in part, the Isabella Lake DSM Project Record of Decision (ROD), signed December 2012, which stated that the Corps would explore and identify mitigation measures to offset adverse effects on recreation resulting from construction of the Isabella Lake DSM Project.

## **1.7 PRIOR NEPA DOCUMENTS AND ORGANIZATION OF THIS SEA**

The Isabella Lake DSM Project Final EIS was released for public review and comment in October 2012, and the ROD was signed on December 18, 2012. The 2012 Draft EIS is the primary source for detailed environmental assessment information for the Isabella Lake DSM Project, with the Final 2012 EIS focusing on the preferred alternative and subsequent changes to the Draft EIS analyses.

Additional NEPA documents, the Supplemental Environmental Assessments for Phase 1 and Phase II Real Estate Acquisition and Relocation Kern County, California, were finalized with respective Findings of No Significant Impact (FONSI) in August 2014 and July 2015. These documents also partially fulfilled the commitment to continue the NEPA analysis of implementing the Isabella Lake DSM Project. The Phase 1 Real Estate Acquisition and Relocation SEA specifically evaluated the effects of acquiring affected occupied lands and relocation of residents located at the privately owned Lakeside Village Mobile Home Park and a privately owned single-family residence on Barlow Drive. The Phase II Real Estate Acquisition and Relocation SEA evaluated the effect of structure demolition and disposal associated with the proposed Phase I real estate actions, as well as the effects of acquiring additional unoccupied or unimproved lands and demolition/disposal of existing structures on all parcels affected by implementation of the Isabella Lake DSM Project.

This SEA is tiered to the Draft and Final EIS, and provides additional NEPA assessment of recreation and facility relocations for which information was not previously available for inclusion within the Final EIS. The SEA will effectively reference information and assessments that have not changed since the 2012 EIS analysis. The Draft and Final EIS and supporting documentation is available online at:

<http://bit.ly/IsabellaDam>

Copies of the Draft and Final Isabella Lake DSMP EIS may also be obtained by contacting the Sacramento District Public Affairs Office, 1325 J Street, Sacramento, CA 95814; Phone (916) 557-5101; email: [isabella@usace.army.mil](mailto:isabella@usace.army.mil).

Chapter 2 of this SEA document discusses potential alternatives to mitigate for the temporary or permanent closure of recreation facilities and administrative facilities affected by the DSM Project. Chapter 3 assesses the existing environment, affected environment and consequences expected by implementing the proposed alternatives. Chapter 4 addresses cumulative and growth inducing effects created by the proposed alternatives.

## **1.8 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.

## **CHAPTER 2.0 ALTERNATIVES**

### **2.1 Introduction**

The following section describes the alternative development process, and the alternatives that were not considered and removed from further assessment. One Preferred Alternative (Preferred Action) is identified to meet the purpose and need for the proposed action. The Preferred Action is evaluated in detail in this SEA. A No Action Alternative, required by NEPA, is also evaluated and utilized as a baseline to illustrate the potential effects of not implementing the Preferred Action.

### **2.2 Alternative Development Process**

#### **2.2.1 Recreation Facilities**

The Isabella Lake DSM Project Draft and Final 2012 EIS document assessed the potential effects to the recreation facilities around Isabella Lake. Based on the findings, the 2012 Isabella Lake DSM Project Record of Decision (ROD) required the Corps to “identify measures for mitigation to offset adverse effects on recreation resulting from construction of the Isabella Lake DSM Project.”

Recreation preferences, obtained from input by public surveys, scoping meetings, stakeholders and community members, were utilized to identify a preliminary set of recreation issues and opportunities. Mitigations proposed by the public and agencies during the EIS project scoping process were used to further identify potential relocation opportunities. The public survey (Corps 2013) of recreation visitors was conducted by a Corps contractor (Gulf South Research Corporation) during the 2013 summer recreation season to assess use and preferences for the recreational experiences at Isabella Lake. Survey results included the location of lake access, the type of recreation use, the concerns of visitors, and suggestions for possible mitigation measures to address project effects. Information gathered on the type and volume of visitor use was also used to identify potential measures that could be implemented to mitigate project impacts. Public meetings were held at Kernville on September 25, 2013 and at Lake Isabella on September 26, 2013, to present the recreation survey effort around Lake Isabella and to obtain additional public input by questionnaire.

From the surveys and input of publics and agencies, a draft Recreation Report (USACE 2014) was produced and released to the public on February 27, 2014 (Appendix A). The Draft Recreation Report summarized potentially impacted recreation areas and some mitigation

opportunities to offset losses of recreation facilities resulting from the implementation of the Isabella Lake DSM Project. The Draft Recreation Report did not recommend specific alternatives to offset impacts, but was used as a scoping tool to obtain public and agency input for identification of needs and opportunities. Two public comments, which addressed other resource issues, were received in response to the Draft Recreation Report. Without additional public input, a final Recreation Report was not produced. The next public meetings were held on November 21 and 22, 2014 in Kernville and Lake Isabella respectively, to provide an information forum and review on the project’s current progress.

Some measures identified in the Draft Recreation Report and the visitor surveys were not considered further for inclusion within alternatives because they would not mitigate for recreation impacts resulting from the Lake Isabella DSM Project. Recreational measures that were identified for further assessment were those that could mitigate for impacts resulting from the construction of the Isabella Lake DSM project, or from impacts resulting from increased use of recreation areas outside the project construction footprint due to facility closures within the construction footprint. Table 1 identifies measures eliminated from further consideration.

**Table 1. Preliminary Recreation Mitigation Opportunities Removed From Further Consideration.**

<b>Measures Eliminated from Further Consideration for Mitigation</b>	<b>Rationale for Screening or Elimination</b>
Construction of a Miniature Golf Course	There is no existing miniature golf course to be mitigated; it does not qualify as a mitigation measure or in-kind capacity replacement.
Changes to Fisheries Management	Impacts were reduced to less-than-significant from changes in the prior project design. The lowering of the pool for construction purposes was reduced to one winter season.
Boulder Gulch Improvements	The site is considered too far from the area of impact compared to other recreation sites, and it is not directly impacted.
Construction of a Lake Perimeter Bike Path	There is no existing bike path to be mitigated; it does not qualify as a mitigation measure for project effects or in-kind replacement.
Changes to Management of Paradise Cove Recreation Site	This was not acceptable to USFS as a mitigation measure for impacts elsewhere on the lake.
Changes in release schedule or flow regime for lower Kern River to benefit whitewater recreation	This is not a significant impact directly related to project effects. Summer flows are under the jurisdiction of the Kern River Watermaster.

Recreation locations intended for facilities mitigations were selected by the USFS per the 1964 MOA. These locations included Auxiliary Dam Recreation Area, Old Isabella Road Recreation Area, South Fork Recreation Area, French Gulch Recreation Area, Launch 19 (Main Dam Launch), and Main Dam Campground (Figure 3). Continuing coordination with the USFS

identified specific parking needs and locations for boat ramps and other recreation facilities. The USFS also requested that flush toilets be replaced by vault toilets without interior electrical or water connections, mirrors, or sinks, to reduce the effort and cost associated with long-term maintenance. Solar powered interior and exterior lights were requested in lieu of existing electrical connections, with relocation of water faucets to exterior locations.

A Design Prospectus Report (Corps 2015) was produced to illustrate design concepts of the USFS preferred recreation locations, and it was adopted by the USFS in September of 2015. Recreation objectives were further identified within the Prospectus for Isabella Lake recreation mitigation, and these were incorporated into a preferred recreation alternative:

- Provide a boat ramp with the same capacity as Boat Launch 19.
- Design facilities to allow for maximum accessibility to visitors of all ages and ability levels.
- Use a design theme that incorporates the existing architectural style, colors, materials, and signs.
- Design parking areas to adequately accommodate cars and pickup trucks with and without trailers.
- Minimize soil erosion throughout the entire area by improving roads, and stabilizing the surface.
- Provide facilities for a campground host site.
- Provide kiosks to facilitate access to areas that require permits.
- Protect and interpret the heritage resources on the site.

Discussion between the Corps and the USFS further identified needed recreation structures, the best available locations for placement, and preferred structure and site designs. To mitigate the closing or removal of recreation facilities due to dam reconstruction, the following facilities were identified for construction:

- An interim boat ramp at French Gulch and parking and restroom facilities to mitigate the interim closure of Boat Launch 19
- Relocation and installation of new facilities at Auxiliary Dam Recreation Area
- An expansion of the shoreline camping area and installation of new facilities at Old Isabella Road Recreation Area

- New facilities installation at South Fork Recreation Site
- New restroom and restored launch and parking facilities at Launch 19 after completion of the DSM project.
- Reconstruction of the Main Dam Campground for a reopening to the public after the DSM project is completed.

### **2.2.2 Administration Facilities – Office, Warehouse, and VIC**

Three design meetings were conducted between the USFS and Corps in 2014, with multiple site visits, to identify structure needs, designs and potential locations for mitigation of the Isabella Lake Office and facilities. The Isabella Administrative facilities that were identified for displacement by the Isabella Lake DSM project include administrative office space for approximately 20 employees, a 450 sq. ft. visitor information center (VIC), a fire response station which housed two engines with support facilities, and a warehouse. The USFS Kernville Work Center (KWC), located in the town of Kernville off of Kernville Road, was identified for the relocation of the administrative office and warehouse with supporting parking and landscaping (Figure 4).

In 2014, the USFS communicated a desire to consolidate the additional USFS workforce currently housed in a rental building in downtown Kernville, with the proposed Isabella administrative building at the KWC. The USFS proposed an addition to the new administrative building for 26 additional employees, and provided funds to the Corps for design purposes. The Corps intends to build the relocation portion of the building to accommodate displaced employees before the Isabella DSM project removes the Isabella Lake administrative office; however, the USFS funded portion of the building may not be concurrently constructed. In addition, sites were identified at the KWC for the construction of new warehouse facility and parking. The Corps additionally agreed in September 2015 to demolish a dilapidated duplex for the construction of additional new parking at the KWC.

The USFS identified a 4.1 acre triangular portion of available National Forest land, as the preferred relocation site of a two-bay, fire engine response station accessible directly from Highway 178 or by way of Isabella Lake Blvd. through the town of Lake Isabella (Figure 3). A 450 sq. ft. modular building was requested by the USFS for an interim visitor information center (VIC) at this site. The Isabella Lake Blvd. location was preferred because it would reduce fire engine response time to the southern portion of the Kernville District, and would provide efficient access to the intersection of both Highways 155 and 178. In addition, this location was visually prominent to travelers and could provide visitor information services for those entering the Lake Isabella area.

## 2.3 Alternatives Not Considered Further

The following mitigation measures were proposed, but not carried forward because they did not meet the project purpose and authorizations. Based upon the MOA described in Section 1.3 Project Authority, the Corps will replace USFS properties at an equivalent basis to provide such kind and quantity of services in a location as directed by the USFS.

Proposed measures that were not considered further included constructing new hotels for construction workers, removing lakebed stumps, installing floating restrooms, and creating viewing platforms. These measures did not represent in-kind replacement for such recreation uses as boat launch or camping facilities that could be impacted by the DSM Project construction.

Proposed alternatives for USFS administrative facility relocations that were considered, but eliminated from further consideration are listed below.

### Combined location for all USFS administration facilities

The 4.1 acre triangular-shaped site off of Lake Isabella Blvd was proposed as a location for the combined USFS administrative building, warehouse, visitor information center (VIC) and fire response station relocations. However, this site was too small, without additional land acquisitions, to support all buildings and associated parking.

### Private lands for relocation of facilities

Use of private land affected, and private land not affected by the DSM project, was proposed for the relocation structures. However, these lands could not be considered because the Corps was not authorized to purchase private lands for purposes of mitigating impacts on recreation or USFS administration facilities resulting from the Isabella Lake DSM project. Also, lands acquired for DSM construction are considered high hazard areas during construction, and some parcels would not be compatible with non-Dam uses once construction is complete.

### Fire response station and visitor information center at French Gulch recreation area

A proposal was made relocate the fire response station and the VIC to the French Gulch Recreation Area. This alternative was not adopted because of conflicts with existing use by the Nuui Cunni Center, and a lack of parking area with resulting safety concerns for all facilities proposed. Also, the site is not centrally located for fire response, and the location was not convenient for visitors traveling Highway 178.

### Facilities installation at the Old Air Force Camp property



The Old Air Force Camp property, located off Highway 155, west of French Gulch Recreation Area was proposed as a site for USFS facilities. This alternative was not considered further because the USFS had concerns with physical suitability due to topography, and the access is not conveniently located with respect to visitors traveling along Highway 178.



Figure 3. USFS Recreation Sites for Mitigation Actions.





**Figure 4. USFS Kernville Work Center Site.**

### Alternative existing USFS lands for facilities installation

Other USFS land, including Hungry Gulch, Boulder Gulch, Tillie Creek, Live Oak North and South, Camp 9, Hanning Flat, Stine Cove, and Kissack Bay, were proposed for the administrative building, fire response station and VIC locations. However, these locations did not provide sufficient acreage for proposed relocations, or existing recreational uses conflicted with the proposed uses. Also, these areas were not centrally located for access by visitors traveling Highway 178, or conveniently located for fire engine response to the south and east side of Isabella Lake.

### Split location with the Corps quality assurance building.

An alternative was proposed to temporarily place the USFS administration building at the Kernville Work Center (KWC), and utilize the USFS Lake Isabella 4.1-acre triangular site for the fire response station and interim VIC. Following completion of DSM construction, the VIC would be permanently relocated to the Isabella Lake Corps quality assurance building located at the prior trailer park site. The option to move the VIC into the Corps quality assurance building off Highway 178 was not preferred by the USFS.

## **2.4 NO ACTION ALTERNATIVE**

NEPA regulations and CEQ guidance require consideration of the No Action Alternative. The No Action Alternative describes the future conditions that would reasonably be expected to exist in the absence of the proposed action and serves as the environmental baseline against which the adverse and beneficial effects of the action alternatives are evaluated. In this SEA, there is one action alternative, the Preferred Alternative (Preferred Action), which will be evaluated in detail and will be compared to the No Action alternative. The Preferred Alternative is intrinsic to the Isabella DSM project in that the DSM project would not be conducted without relocation of USFS administration and recreation facilities.

As such, the No Action Alternative would mean that there would be no Federal participation in remedial improvements to the Isabella main dam, spillway, or auxiliary dam. The Operating Restriction at elevation 2,589.26 NAVD88 (356,700 acre-feet) would become permanent. Initiated by the Corps in 2006, the Operating Restriction was intended as an emergency deviation from the Water Control Plan in order to lower the lake level to a safe elevation and capacity. It is possible that without dam remediation to reduce the risk of dam failure and life safety concerns, the Operating Restriction would become even more restrictive. However, despite risk reduction measures, the Isabella Dams would still possess an unacceptably high risk of failure under the No Action Alternative. The potential environmental, economic,

and human consequences of dam failure could be extremely high. Not proceeding with the construction of the Isabella Lake DSM Project, is not considered a prudent or reasonable alternative due to health and safety risks. The No Action Alternative would not fulfill the purpose and need of the proposed project as defined by the 2012 EIS and approved in the 2012 ROD.

Under the No Action Alternative, the Corps would not mitigate for impacts of the Isabella Lake DSM Project because construction would not be conducted, and project related impacts would not occur on USFS administration and recreation facilities. In addition, mitigation would not be conducted by the Corps for any recreation affected by sustained Operating Restrictions. As a result, visitor experiences dependent upon higher lake levels and recreational fishing could possibly be diminished on a permanent basis.

## **2.5 PREFERRED ACTION – RELOCATION OF USFS ADMINISTRATION AND RECREATION FACILITIES**

USFS administration facilities to be mitigated by the Isabella Lake DSM project include the USFS Lake Isabella Office with a 450 sq. ft. of visitor information center located on Ponderosa Drive, an associated warehouse and a fire response station with two engine bays and support facilities. USFS recreation facilities to be mitigated and discussed within this SEA include Launch 19, French Gulch Recreation Area, Auxiliary Dam Recreation Area, Old Isabella Road Recreation Area, South Fork Recreation Area, and Main Dam Campground. Recreation facilities of the preferred alternative are discussed below, following description of the Administrative Facilities.

### **2.5.1 USFS Administrative Facilities – Office, Warehouse, Fire Response Station and Visitor Information Center**

#### USFS Administrative Office and Warehouse – Kernville Work Center

A USFS single story administrative office of approximately 9,785 sq. ft. would be designed by the Corps for construction at the USFS Kernville Work Center located off Kernville Rd, in the town of Kernville (Figure 5). Construction of a portion of this building, 5,514 sq. ft, would be completed by the Corps to replace the administrative function of the displaced Lake Isabella office before demolition occurs. This office space would serve to mitigate the needs of approximately 20 USFS administrative employees and law enforcement officers (LEO) displaced by the removal of the Isabella Lake administration office for the DSM project. The building would provide offices, conference rooms, rest rooms, break room, storage rooms and associated vehicle parking. The remainder of the administration building, 4,271 sq. ft., would not be part of

the Isabella Lake Office mitigation and would be funded by the USFS. Availability of USFS funding would determine the construction schedule for this portion of the building that would consolidate the remaining 26 employees from the Kernville Ranger District Office currently located within a rented office building in downtown Kernville.

The building exterior would conform to the USFS FS-710 Built Environment Image Guide (BEIG) for National Forests and Grasslands, but would also integrate architectural style and characteristics of the surrounding area and the town of Kernville. The building's outer surface would be composed of fire resistant ceramic tiles or other durable surfaces with a standard USFS green metal standing-seam roof. USFS sustainability guidelines would be implemented under the Corps design for Leadership in Energy and Environmental Design (LEED) certification.

A 2,700 sq. ft. two-bay warehouse would be constructed by the Corps to mitigate for storage facilities directly impacted by construction of the new dam emergency spillway. The warehouse would contain space for fire cache and general storage, and a unisex restroom/shower. Site work for both the office and warehouse will include electrical, water, septic and communication connections, and extra paving to provide for vehicles for loading and unloading. An unoccupied, single story USFS duplex at the KWC would be demolished by USFS request to provide space for an additional new parking lot with approximately thirteen vehicle parking spaces. The unoccupied single story duplex, constructed in 1953 for barracks use is not considered a historical property. The demolition contractor would be required to demolish wall foundations and properly dispose of debris and material at an approved landfill or recycling center. All demolition and activities associated with the proposed action would comply with the Kern County Ordinance Code G-8057, which governs the disposal of solid waste at Kern County waste facilities.

Coordination with the Kern County Roads Department was conducted for a new visitor entrance to the office building from Kernville Road. Site work would also include construction of a driveway and parking for approximately eleven visitor vehicles, with additional overflow parking for ten spaces. Approximately 44 new spaces would be constructed initially to accommodate parking for employees accessed by the current KWC driveway. An additional 16 parking spaces would be constructed at a later date by the USFS. The office building would be heated and cooled by central air and would include an on-site septic system with leach field, and electrical, communication and water connections. All facilities would meet or exceed ADA, UBC, and ANSI standards. Solar panels located at the KWC would provide a renewable energy source for the office. All lighting would comply with the Kern County dark sky ordinance. The project footprint would be graded with off- road or earth moving equipment in preparation for construction of buildings and parking facilities. Disturbed surfaces that are not paved or covered with structures, rock or gravels, would be reseeded with native grasses and vegetation. Native,

fire resistant and drought tolerant plants would be utilized in the final KWC landscaping around the new facilities.

### Fire Response Station Complex and Interim Visitor Information Center at Lake Isabella Blvd.

The proposed location for the fire response station complex and interim visitor information center is an undeveloped 4.1 acre of National Forest land directly off of Lake Isabella Blvd., in the vicinity of the Kern County Government offices (Fig. 6). Lake Isabella Blvd. would be widened to 100 total feet in order to accommodate traffic traveling into three new constructed driveways at the Station, which would effectively separate visitor and fire vehicle traffic. Grading by heavy equipment would occur into the rear hillside topography to provide a more level building site consistent with the elevation of Lake Isabella Rd. All new facilities would be constructed at this site, including a modernized 4,000 sq. ft. two-bay fire station with a day room, administrative office, and individual rooms for fire cache, weight lifting, storage and communications. In addition, a multi-purpose room would accommodate an Incident Response Command Center (IRCC) with two indoor and two outdoor accessible restrooms. The roof level would be staggered, with the tallest portion of the engine bay roof extending up to approximately 24 ft. in height.

Associated support facilities on the site would include a water tender fill station, and a twelve sq. ft., metal lattice fire hose tower of 50 ft. in height. Electrical and communication utilities, septic tank and leach field system, and hookup to the existing water supply would also be installed at the 4.1 acre site. In order to supply renewable energy power to the building under the USFS sustainability guidelines, a wind turbine area with six small vertical-axis wind turbines (VAWT) would be constructed. Each VAWT would consist of a 30 foot single pole, with no guy wires, supporting each turbine of eight feet in height and 13 ft. in width (see photograph in Appendix C). Individual VAWTs would extend a total of 38 feet in height above ground level.

Approximately 28,500 sq. ft of paving would be installed to accommodate ample employee parking, fire engine staging and storage facilities, including 17,900 sq. ft. of parking and storage for the IRCC and visitor parking. A modular building of 480 sq. ft. and a separate kiosk would be provided for the interim visitor information center (VIC) on the west side of the complex. Visitor restrooms would be exterior to the modular building, adjacent to the fire response station building. Outdoor shelter would be provided by a shade structure constructed near the VIC. The exterior of the fire station would conform to the USFS BEIG, but would also consider architectural style and characteristics of the surrounding area and the town of Lake Isabella. USFS standard design parameters would be utilized to be decided in collaboration with the USFS. Building color would be muted, covered with cementitious lap siding of a gray or a variegated wood surface coloration, and a wainscot of simulated river rock. All lighting would comply with the Kern County dark sky ordinance. Chain link fence would be installed to

surround the fire response station complex. Drought resistant, native plant species and natural rock would be incorporated in landscaping throughout the site.



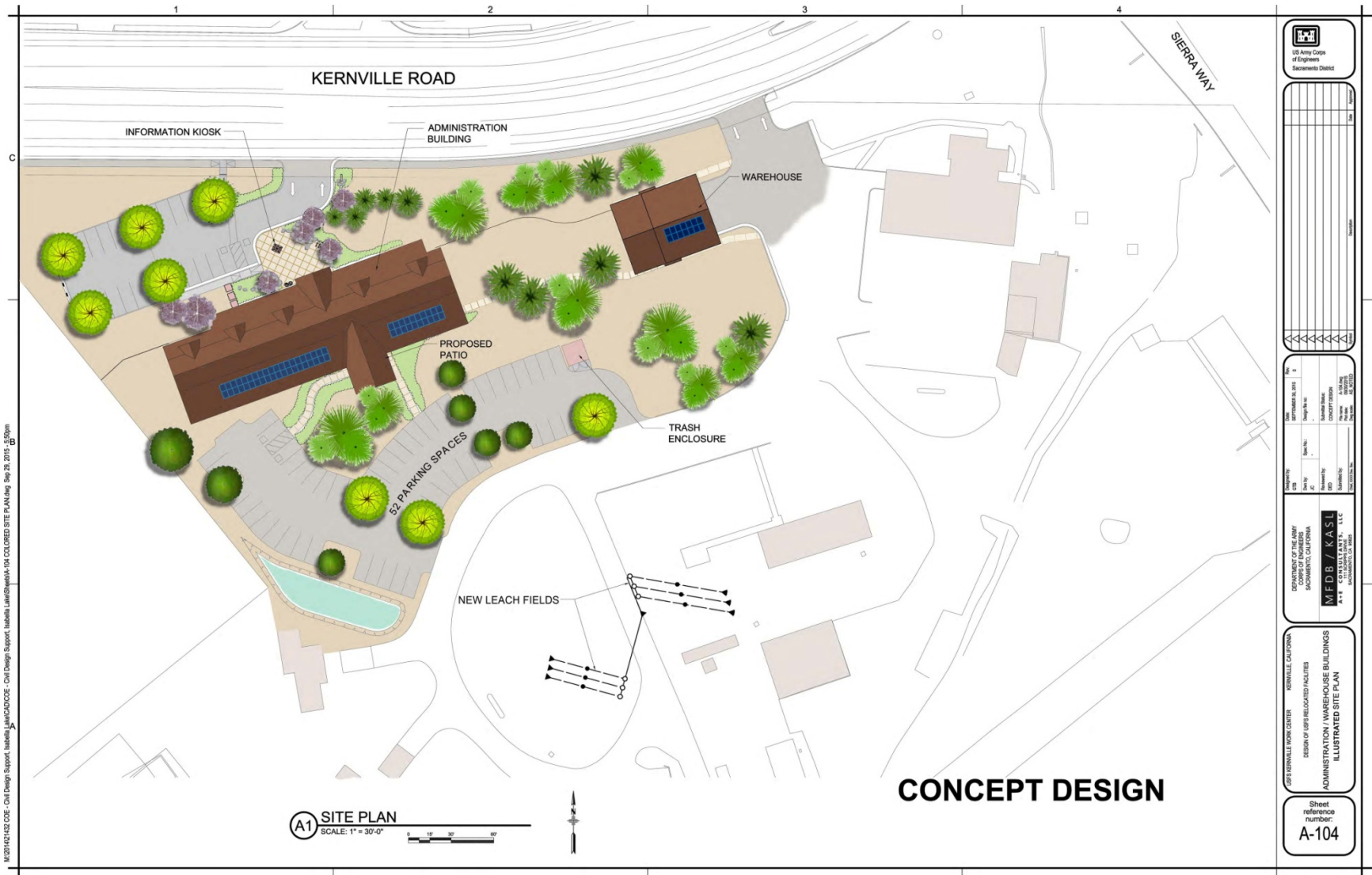


Figure 5. USFS Kernville Work Center Concept Design for Administrative Office and Warehouse.



**Figure 6. USFS Fire Station Response Center Concept Design.**

## **2.5.2 USFS Recreation Facilities**

The Kern River Ranger District (USFS) recreation facilities described below are expected to incur potential DSM construction related impacts and would be mitigated as applicable. The USFS would continue to manage each recreation site within the boundaries of the Isabella Lake DSM project during the construction period. All new recreation facilities would be completed for recreational use before existing facilities are demolished. A detailed summary of the facilities for each recreation area is found in Appendix B.

At each recreation site where new restrooms are proposed, modular, vault style restrooms without sinks and mirrors would be installed at the request of the USFS in order to reduce long-term maintenance. This vault style restroom would be pre-manufactured to incorporate a design aspect that provides wind-enabled, positive ventilation to prevent accumulation of odors. Periodic septic cleanouts by a pump truck are required to remove the waste products that accumulate in the vault below the structure. Colors and textures of the structures would reflect the grays and brown of the rocks and soil in the surrounding landscape. The barrier-free restrooms would meet or exceed ADA, UBC and ANSI standards. One faucet would be installed for a water source outside each modular restroom unit. Solar powered lighting would be installed for interior and exterior illumination of the restrooms and would comply with the Kern County dark sky ordinance.

All demolition identified for parking and restroom feature would occur in accordance with federal, state and local codes. Restroom concrete debris would be transported to local area recyclers for proper disposal. The existing electrical lines would be shut off, capped, and abandoned where additional use is not warranted.

Areas disturbed by construction would be stabilized using best practice erosion-control methods. Circulation routes would be graded and compacted based upon existing materials, and/or asphalt surfacing. Access and direction signage would be installed. Hydroseeding would be conducted on areas with suitable soils, utilizing native seed for grasses and wildflowers and organic tackifier, as necessary. Specific areas with public amenities and greater use, such as shelters, restrooms, or entry structures may receive additional vegetation and groundcover.

### **Launch 19 (Main Dam Boat Launch).**

The existing recreation facilities at Boat Launch 19, also referred to as the Main Dam Boat Launch, are expected to be closed during the DSM construction period for the greater part of years 2018 to 2022, because the Launch is centrally located to projected construction activity. Boat Launch 19 recreational uses, including boat launch ramp, floating courtesy dock, parking and restrooms, would be relocated to the French Gulch recreation site before any Boat Launch 19 recreation facilities are compromised or demolished. After relocation, the existing parking

would be restored and restroom buildings replaced with vault type restrooms at Boat Launch 19. The existing launch ramp would be protected in place at Boat Launch 19, to be reopened upon completion of the DSM project. The courtesy dock would be moved to the new launch at the French Gulch Recreation Area on an interim basis, and returned to Boat Launch 19 after DSM project completion.

Following Isabella Lake DSM project completion, the recreation facilities at Launch 19 would be reconstructed as needed. An equivalent parking area of 82 car and/or trailer asphalt spaces would be constructed into one new larger parking area. An equivalent capacity and sized pre-fabricated modular vault restroom would be installed at the site to replace the removed restroom.

### French Gulch Recreation Area

To mitigate for the boat launch closure at Boat Launch 19 during the DSM construction period, an interim launch ramp and facilities would be constructed at the existing French Gulch Recreation Site (Figure 7) beginning in fall of year 2016 and continuing for four months to six months. Boat Launch ramp 19 would remain open to the public during this period. Launch ramp construction at French Gulch would require earthwork and fill above the gross pool water line and below the water line during periods of low water levels. It is expected that the launch ramp construction would be conducted in dry conditions at low lake levels expected in early winter months. The potential risk of higher than normal lake levels could delay use of the launch ramp for up to a month while construction occurs during an available low water period to provide for a low-water launch access.

The launch ramp would include an in-kind 48-foot wide grooved Portland ADA accessible concrete ramp at 12-14 percent slope, constructed for an operable range of 2,589-foot (361,250 acre feet) to 2,539-foot (95,775 acre feet) in lake level elevation. The ADA accessible boat loading ramp would be constructed in the parking lot. In addition, the 8 ft. by 80 ft. floating courtesy dock from Boat Launch 19 would be moved and installed at French Gulch, and returned to Boat Launch 19 after the Dam remediation is completed. The entrance and exit to the French Gulch Recreation Area off of Highway 155 would be repaved to provide a safer entrance. Additional asphalt paving would be installed for access to the Boat launch ramp as illustrated in Figure 7.

Approximately one-half acre of paved parking would be constructed on the lower level of the site and delineated for vehicle parking. Both the existing lower and upper level asphalt parking would be marked and striped for boat trailer and vehicle parking. The existing Nui Cunni dirt parking lot would also be paved and marked for parking. Construction of the parking lots and access roads would require cut and fill earthwork above the gross pool elevation. The

earthwork and rough grading of the interim parking lot, access roads, and boat launch would be accomplished using dozers, scrapers, excavators, and haul trucks. Sanitary facilities would include replacement of the existing cinder block restrooms with an equivalent capacity sized modular vault restroom with four stalls and an outside water faucet. Solar panels on the roof would provide power for both interior and exterior lighting. An exterior faucet would provide water at each restroom unit. The USFS would have the option to continue public use of the interim French Gulch launch facilities following the re-opening of Boat Launch 19.

### Auxiliary Dam Recreation Area

The following measures would provide in-kind mitigation for temporary and permanent Auxiliary Dam construction that displaces recreation use. Relocation and construction of new facilities would be conducted prior to any recreation facility removals or constraints (Figure 8). Construction is expected to begin in the year 2018, but is ultimately dependent upon contractor construction schedules which are yet to be determined. If some recreation elements should remain unaffected by construction actions, it is possible they would not require compensatory facilities.

During the Isabella Lake DSM project construction, approximately 1,550 linear feet of shoreline would be maintained in the northern portion of the Auxiliary Dam Recreation Area for active camping use while the southern portion would incur use by the construction contractor for staging and/or temporary materials storage on an as needed basis. The extension of the Auxiliary Dam would permanently remove up to 7.2 acres of the Auxiliary Dam Recreation Area, and the contractor's staging/material storage area could temporarily remove up to 13 acres of land currently used for beach camping. In-kind replacement of the affected facilities and recreation acreage would be accomplished by new recreation facilities constructed in the northern portion of the Auxiliary Dam Recreation Area, and the addition of recreational acreage and facilities at Old Isabella Road Recreation Area.

The visitor kiosk, camp host site, and three existing restroom facilities currently in the southern portion of the site are expected to be demolished and relocated to serve the northern portion of the Auxiliary Dam Recreation Area. Electric power would be maintained to the campground host and entrance booth. The RV dump station would be relocated to the Old Isabella Road Recreation Area because the existing sewer would need to be abandoned. Reconstruction of the new campground host site and visitor kiosk would occur in the northern portion of Auxiliary Dam Recreation Area, to be accessed by a new asphalt concrete connector road to State Highway 178. The new kiosk would be installed as a pre-constructed modular building of equivalent design and features. Three new modular vault restroom units of 8 stalls per unit, each equipped with two external water spigots, and interior and exterior solar powered lights would also be installed in this area. Restrooms would meet or exceed ADA, UBC and

ANSI standards. Connectivity to the Old Isabella Road Recreation Area would be created via an aggregate base access road above the restricted pool (2,589 ft. or 361,250 acre ft.). After the completion of construction, the DSM contractor would grade any utilized area to its original configuration and seed with native vegetation species where appropriate.

### Old Isabella Road Recreation Area

The permanent loss of 7.2 acres of upland area within the recreation footprint resulting from the Aux Dam left abutment extension would be offset with an equivalent amount of area made usable and accessible at the Old Isabella Road Recreation Area (Figure 9). Shoreline boulders and rock greater than six inches in diameter would be cleared to produce a camping and recreational area of thirteen acres between the gross pool elevation and the historic recreation pool elevation. An aggregate road would be constructed to provide connectivity to the Auxiliary Dam Recreation Area from the Old Isabella Road Recreation Area. In addition, repaving of the entry off of Highway 178 would be conducted for access. A new modular kiosk or an unmanned fee collection station would be installed at the site. Access to the recreation area and restrooms would be improved with the addition of an aggregate base road from a paved parking lot to a new restroom turn-around with ADA access. One cinder block restroom would be replaced with a Sani Star RV dump station with an automated fee collection station to utilize the existing septic system. One existing single vault toilet building would be retained in place and two additional four-stall restrooms would be added with exterior and interior solar powered lighting. Three water faucets would be installed outdoors adjacent to restroom facilities. The existing facilities of launch ramp with courtesy dock, and the 180 car and/or trailer asphalt parking area would be retained in place.

### South Fork Recreation Area

South Fork Recreation Area, located east of Old Isabella Recreation Area, would be supplemented with improvements to accommodate increased visitor use (Figure 10). Existing camping, day use and launch facilities would be maintained. One existing cinder block restroom would remain with existing fixtures, and an additional pre-fabricated, two-stall modular vault restroom would be installed with solar powered exterior and interior lighting, and exterior water faucet. Parking facilities would also be maintained with the addition of paved ADA accessible parking to provide access to both restrooms.

### Main Dam Campground

The Main Dam Campground has been closed to the public since the year of 2006, and would remain closed to the public during the Isabella Dam DSM construction period in order to complete repairs to the Main Dam. Following Isabella Lake DSM construction, the campground

would be re-contoured and access roads would be reconstructed to new campsites. The new campground footprint is expected to be reduced by up to 1.5 acres to accommodate protection and dam safety inspection requirements. Three to four large group-campground sites would be installed in place of small individual sites in order to address current recreational demand for sites that accommodate larger groups of campers. Each group-campground site would be installed with a large community pedestal grill and sufficient tables in such kind and quantity to provide levels of service equivalent to existing conditions. One existing cinder block restroom may be replaced with a four-stall, modular vault restroom that meets or exceeds ADA, UBC and ANSI standards. Solar powered lighting would be installed for interior and exterior restroom lights. A new well may be constructed in order to supply one or two water faucets to be situated around the building exterior.

This campground area is also identified as a site for vegetation mitigation, and would be re-planted with larger containerized native tree and shrub species that are established from nursery cultivation. A temporary deer fence and irrigation system would be installed with a three year maintenance period to help establish vegetation.





Figure 7. French Gulch Recreation Area Mitigation.



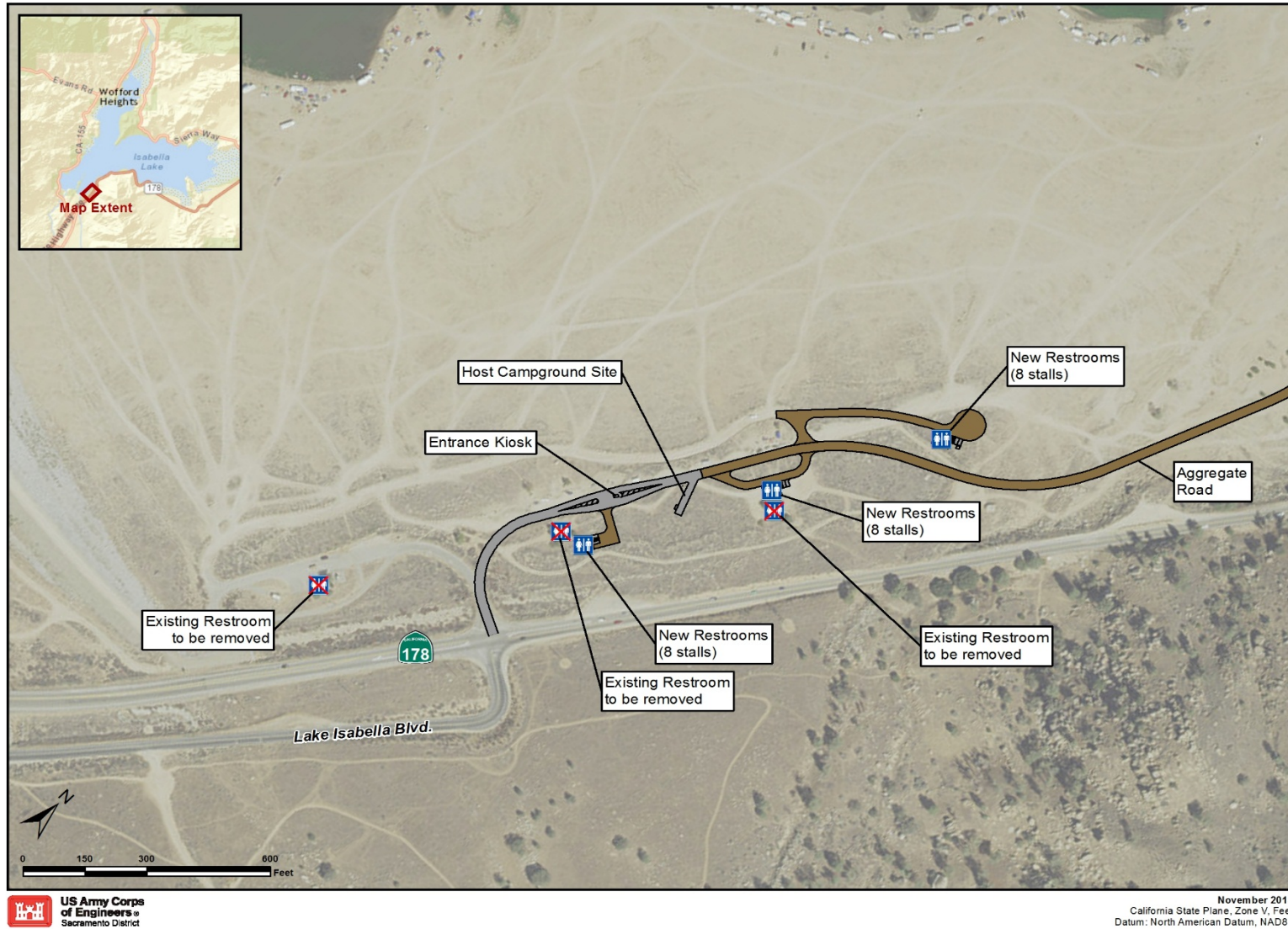


Figure 8. Auxiliary Dam Recreational Area Mitigation.

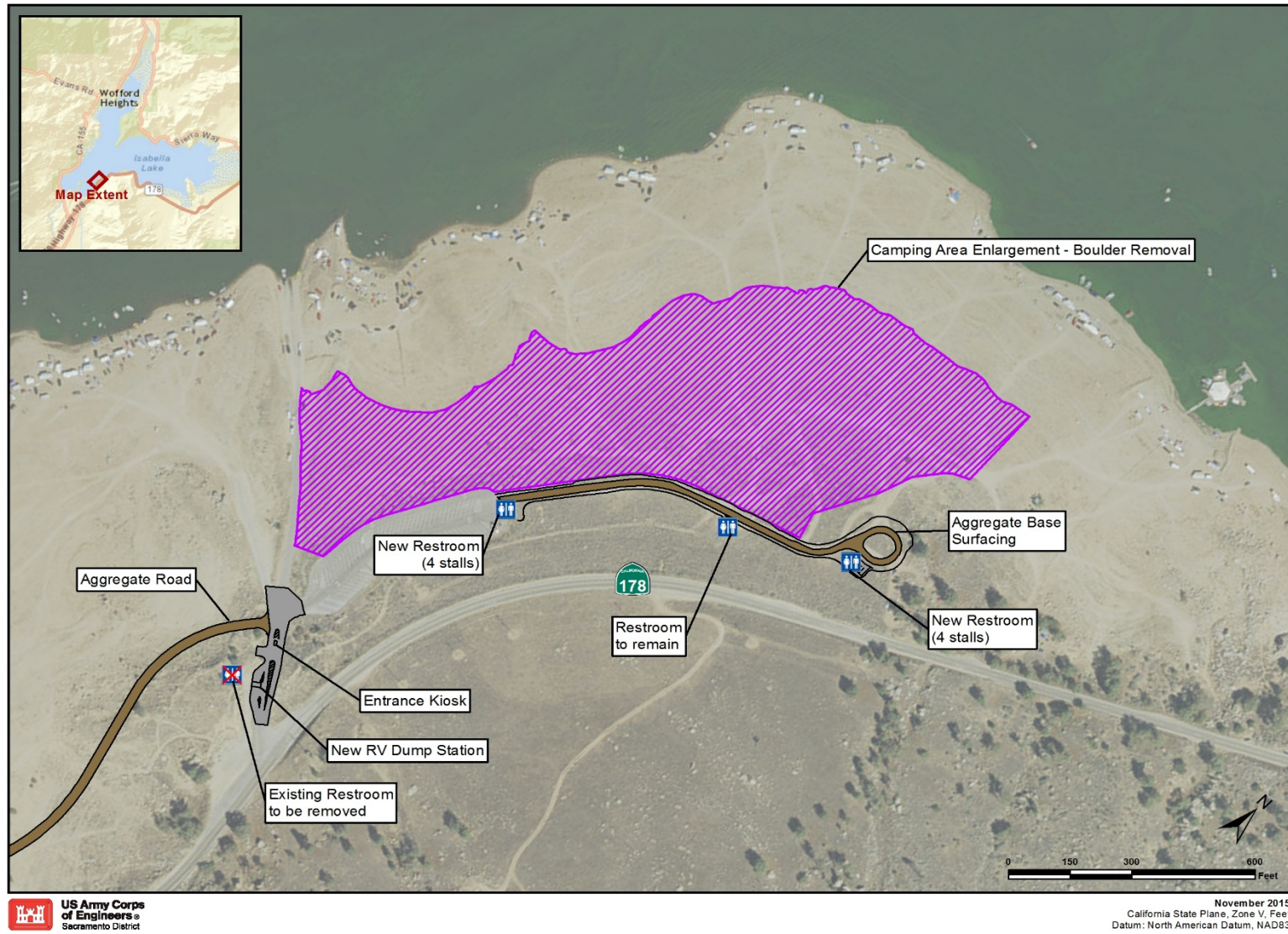


Figure 9. Old Isabella Road Recreation Area Mitigation.





Figure 10. South Fork Recreation Area Mitigation.

## **CHAPTER 3.0 AFFECTED ENVIRONMENT AND CONSEQUENCES**

### **3.1 INTRODUCTION**

This section describes the environmental resources in the construction footprint, as well as effects of the preferred action and no action alternatives on area resources. Each resource section below presents the existing resource conditions, environmental effects, and when necessary, mitigation measures are proposed to avoid, reduce, minimize, or compensate for any significant effects. In determining the effects, the consequences of the proposed action are compared to the consequences of taking no action. Impacts are identified as direct or indirect, with cumulative impacts following in Chapter 4. Effects are assessed for significance based on significance criteria, which are established for each resource below.

### **3.2 ENVIRONMENTAL RESOURCES NOT EVALUATED IN DETAIL**

Certain resources were eliminated from further analysis in this SEA because they were addressed adequately in the Isabella Lake DSM Project Draft and Final EIS, 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 initially evaluated in the Isabella Lake DSM Project EIS. A brief discussion of these resources follows.

#### **3.2.1 Geology, Soils and Seismicity**

The Geology, Soils and Seismicity section of the Isabella DSM Project EIS (Draft EIS section 3.4 and Final EIS Section 3.2) sufficiently characterizes the regulatory setting and affected environment for this resource. There have been no additional revisions, studies or new data relevant to the discussion of the affected environment. Proposed structures would be constructed on terrain and in soils that lack contaminants and are not prone to liquefaction, seepage and piping. The KWC site and portions of the recreation areas have incurred previous grading. The site of the proposed fire response station has also incurred disturbance by boulder relocation and trespass roads. This 4.1 acre site would be cut and filled in order to provide a level building site and vehicle entrance. Proposed structures are not known to be situated directly over fault lines, but are in proximity to known faults which run throughout the Isabella Lake vicinity. The Preferred Alternative is not expected to produce any adverse effect to geology, soils and seismicity. Mitigation measures specified in Section 3.4.4 of the EIS are expected to reduce any potential geology, soils and seismicity impacts to a level of not significant.

### **3.2.2 Socioeconomics and Environmental Justice**

The socioeconomics and Environmental Justice section of the Isabella Lake DSM Project EIS (Draft EIS Section 3.15 and Final EIS Section 3.13) characterized the regulatory setting and affected environment for this resource. Criteria used to evaluate the intensity of impact on socioeconomic conditions and environmental justice were based on assessment of impacts on the demographic, economic and social factors described within the section. A significant socioeconomic impact was defined as: long-term increase in population that could not be accommodated by regional infrastructure; reduction in the availability of affordable housing; long term decreases in earnings or employment affecting the regional economy; long term displacement of population or local business, or loss in community facilities, events, population or major industry. Based on these criteria, the relocation of existing administrative and recreational facilities and the construction of new facilities is not expected to cause significant effects on socioeconomics or environmental justice.

### **3.2.3 Hazardous, Toxic and Radiological Waste**

The hazardous, toxic, and radiological waste (HTRW) section of the Draft EIS (Section 3.9.1) sufficiently characterizes the regulatory setting for this resource.

An alternative would be considered to have a significant effect if it would involve substances identified as potentially hazardous by the Comprehensive Environmental Response, Compensation, and Liability Act; the Resource, Conservation, and Recovery Act; and/or 40 CFR Parts 260 through 270. A significant effect would be: 1) exposure of workers to hazardous substances in excess of Occupational Safety and Health Administration (OSHA) standards, or 2) contamination of the physical environment, thereby posing a hazard to humans, animals, or plant populations by exceeding Federal exposure, threshold, or cleanup limits.

No HTRW sites are known to exist within the soil of the proposed action sites. No known HTRW material is associated with removal of cinder block toilets and facilities from Boat Launch 19, the French Gulch Recreation Area, the Auxiliary Dam Recreation Area and the Old Isabella Road Recreation Area.

The history of the KWC (USFS 2015) has been examined for historical uses by the USFS, and no prior use of HTRW is indicated at the site. The duplex building slated for demolition was assessed with negative results for lead, as it was formerly abated for lead in year 2001. Asbestos was discovered in samples from vinyl flooring, window putty and roofing material. Proper abatement, if necessary, would be conducted by the demolition contractor, prior

to demolition, according to County, State and Federal regulations. The contractor would obtain all required permits and release forms prior to demolition work from the San Joaquin Valley Air Pollution Control District and for proper disposal per Kern County Ordinance Code G-8057, which governs disposal of solid waste at Kern County waste facilities. The Corps has an ongoing hazardous material safety program outlined in EM 385-1-1 Safety and Health Requirements dated November 15, 2008, which requires staff and contractors to follow Best Management Practices (BMPs). These BMPs would be implemented to prevent contamination of the environment and provide protection of construction crews as further elaborated within the 2012 Draft EIS under Section 3.9.4. Under this proper management of HTRW within the duplex building, no significant effects are anticipated with implementation of the proposed action.

### **3.2.4 Land Use**

The Land Use section of the Draft EIS (Section 3.11) sufficiently characterized the regulatory setting for this resource. An alternative would be considered to have a significant effect on land use if it would result in incompatible land uses with existing and planned land uses in the area; be inconsistent with land use designations or goals, policy or regulation, or produce a permanent conversion of prime and unique farmlands to other land uses.

The proposed actions at USFS recreational areas (Boat Launch 19, Auxiliary Dam Campground, French Gulch, Old Isabella Road, Main Dam Campground and South Fork) and the KWC administrative site would be consistent with the existing land use designation as National Forest recreational areas and administrative sites. The proposed fire response station is located on National Forest land adjacent to private and Kern County Buildings. The Preferred Action is not significant as it is compatible with existing and planned land uses, would not have a significant effect on land use and would not produce a permanent conversion of farmlands.

## **3.3 AIR QUALITY**

### **3.3.1 Regulatory Setting**

The Air Quality Section of the Draft EIS (Section 3.5), Final EIS (Section 3.3.) and the Regulatory Setting Section in the detailed Air Quality analysis (Appendix F of the Final EIS) sufficiently characterized the general regulatory setting for this resource.

Since the release of the Final EIS, the Eastern Kern Air Pollution Control District (EKAPCD) has adopted amendments to Rule 402 (Fugitive Dust) at the District's Regular Board of Directors Meeting held March 12, 2015. Rule 402 will be submitted through EKAPCD to the

Environmental Protection Agency (EPA) for incorporation as part of the California State Implementation Plan (SIP), and would constitute a SIP revision.

### **3.3.2 Existing Conditions**

The Air quality section of the Isabella Lake DSM Project Draft EIS (Section 3.5) sufficiently characterizes the affected environment for this resource.

### **3.3.3 Effects**

#### Methodology

Air quality effects associated with the proposed action in the SEA were evaluated through identification of all potential air emission sources, evaluation of potential emissions, evaluation of existing requirements for their control, and determination of on-site measures to reduce effects to less-than significant levels. It was determined within the 2012 EIS air quality quantitative analysis that emissions related to the project would not cause exceedances of Federal, State and local thresholds.

#### Basis of Significance

EKAPCD has established thresholds of significance to evaluate the potential impact of a proposed project and has determined that a project would have a significant adverse impact on air quality if it would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality standard;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable Federal or state ambient air quality standard.

Exceed any of thresholds below:

- Stationary sources as determined by District Rules: 25 tons per year

- Operational and Area Sources;
  - Reactive Organic Gases (ROG): 25 tons per year
  - Oxides of Nitrogen (NO<sub>x</sub>); 25 tons per year
  - Oxides of Sulfur (SO<sub>x</sub>); 27 tons per year
  - Particulate Matter (PM<sub>10</sub>): 15 tons per year
  - Carbon Dioxide Equivalent (CO<sub>2</sub>e): 25,000 tons per year
  - Expose sensitive receptors to substantial pollutant concentrations
  - Cause the creation of objectionable odors affecting a substantial number of people

### No Action

Under the No Action Alternative, there would be no Federal participation in remedial improvements to the Isabella main dam, spillway, or auxiliary dam. The Operating Restriction at elevation 2,589.26 NAVD88 (356,700 acre-feet) would become permanent. Initiated by the Corps in 2006, the Operating Restriction was intended as an emergency deviation from the Water Control Plan in order to lower the lake level to a safe elevation and capacity. It is possible that without dam remediation to reduce the risk of dam failure and life safety concerns, the Operating Restriction would become even more restrictive. However, despite risk reduction measures, the Isabella Dams would still possess an unacceptably high risk of failure under the No Action Alternative. The potential environmental, economic, and human consequences of dam failure could be extremely high

Under the No Action Alternative, the Corps would not mitigate for impacts of the Isabella Lake DSM Project because construction would not be conducted, and project related impacts would not occur on USFS administration and recreation facilities. Construction-related emissions and greenhouse gas contributions to climate change from the Isabella DSM Project and relocation efforts would not occur and construction related fugitive dust would not be generated.

### Proposed Action

Short-term effects on air quality would occur during the grading and demolition periods of the project. The operation of vehicles and heavy equipment, including large transport trucks, front-end loaders, and water trucks, would produce emissions such as exhaust and PM<sub>10</sub>. In



addition, there would be short-term increases in PM<sub>10</sub> and PM<sub>2.5</sub> due to excavation and operation of vehicles and heavy equipment. Off-road equipment would be used for grading of top soil for new parking lots, recreation site and structure preparation (French Gulch, Auxiliary Dam, Old Isabella Rd, Boat Launch 19, KWC and the proposed fire station response site). Additional grading by off-road equipment would be conducted for the launch ramp at French Gulch recreation area. Project construction of recreation and administrative facilities would also contribute smaller amounts of emissions by worker vehicles and equipment use in installation of modular structures at recreation facilities, construction of concrete asphalt roads, removal of boulders from Old Isabella Road recreation area, and building construction at the proposed fire response station site.

These grading, demolition and construction activities as described within this EA would contribute a negligible fraction of emissions estimated in the 2012 DEIS (Section 2.5.2 – Air Quality Affected Environment) as calculated from the Urbemis 2007 9.2.4 Land Use Projects Emissions Model (Urbemis 2015). In addition, substantial reductions in projected DSM air emissions have been afforded by removal of high emission producing activities such as the relocation of Highways 178 and 155. As a result, emission contributions would remain well below the EKAPCD thresholds and would not be considered significant. Localized and temporary fugitive dust would be a concern for local sensitive receptors during the grading period of project implementation. Comprehensive dust control measures would be conducted to prevent fugitive dust issues to a nearby housing tract adjacent to Huth Road, and to Kernville Rd., adjacent to the KWC. Best Management Practices outlined in the 2012 EIS and EKAPCD Rule 402 would be employed as necessary to maintain dust levels below regulatory thresholds which would reduce dust issues to less-than-significant.

Short-term and intermittent emissions contributed by this project are not expected to exceed EKAPCD threshold standards or conflict with the air quality goals of the Kern River Valley Specific Plan (Kern County 2011). Long-term effects would not occur. On this basis and with application of best management practices (BMPs), construction of the Preferred Action would be less-than-significant-with-mitigation to air quality.

### **3.3.4 Mitigation**

The Isabella Lake DSM Project has adapted the most recent amendments to Rule 402 as commitments in an effort to further reduce potential air quality impacts from fugitive dust. Best management practices (BMP), such as applying water or organic soil stabilizer to form a visible crust on the soil, grading during lower wind intensities, lowering off-road vehicle speed, and the application of water or organic soil stabilizer to unpaved surface roadways and material piles, are methods to avoid exceedance of fugitive dust thresholds from the project.

Compliance with the applicable EKAPCD rules and thresholds, and implementation of the appropriate BMPs would minimize air quality effects to a less-than-significant level.

### **3.4 NOISE AND VIBRATION**

#### **3.4.1 Regulatory Setting**

The Noise and vibration Section for the Draft EIS (Section 3.8) sufficiently characterizes the regulatory setting for this resource. The Kern River Valley Specific Plan Noise Element establishes specific goals, policies, and implementation measures for noise within the Plan area, which includes Isabella Lake and vicinity.

#### **3.4.2 Existing Conditions**

The Noise and Vibration Section of the Draft EIS (Section 3.8) characterizes a portion of the affected environment for this resource. There have been no studies or new data generated to date regarding discussion of the affected environment. Additional sensitive receptors have been identified as a result of construction activities proposed for the proposed fire response station and recreation areas.

Sensitive receptors include those individuals and/or wildlife that could be affected by excessive or prolonged noise and vibration, including those generated by construction activity. Residences are of primary concern as sensitive receptors because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Other noise-sensitive land uses include schools, parks and recreation areas, libraries and other uses where low interior noise levels are essential.

Sensitive receptors not previously addressed in the 2012 EIS, include the presence of residences and a commercial business located on or adjacent to Huth Street, Balboa Street and Lakeland Street. In addition, the Kern County library, located approximately 325 feet from the proposed fire response station, is on nearby Lakeland Street. Recreation areas that are considered sensitive receptors include French Gulch, Auxiliary Dam, Old Isabella Road and South Fork.

#### **3.4.3 Effects**

##### Basis of Significance

An alternative would be considered to have a significant noise and vibration effect if the project would result in:

- Exposure of sensitive receptors 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;
- Exposure of sensitive receptors to or generation of excessive ground borne vibration or ground borne noise levels;
- A substantial permanent increase in ambient noise levels in the project vicinity above levels without the project. The threshold of increase is generally defined as 3-5 dB, as shown in Table 5.
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project. This threshold is also generally defined as 3-5 dB.

**Table 2. Subjective Reaction to Changes in Noise Levels of Similar Sources.**

Change in Level, dBA	Subjective Reaction	Factor Change in Acoustical Energy
1	Imperceptible (except for tones)	1.3
3	Just barely perceptible	2.0
6	Clearly noticeable	4.0
10	About twice (or half) as loud	10.0

Source: Egan 1988

### No Action

Under the No Action Alternative, there would be no Federal participation in remedial improvements to the Isabella main dam, spillway, or auxiliary dam. The Operating Restriction at elevation 2,589.26 NAVD88 (356,700 acre-feet) would become permanent. Initiated by the Corps in 2006, the Operating Restriction was intended as an emergency deviation from the Water Control Plan in order to lower the lake level to a safe elevation and capacity. It is possible that without dam safety modifications to reduce the risk of dam failure and life safety concerns, the Operating Restriction would further reduce the lake level. However, despite risk reduction measures, the Isabella Dams would still possess an unacceptably high risk of failure under the No Action Alternative. The potential environmental, economic, and human consequences of dam failure could be extremely high.

Under the No Action Alternative, the Corps would not mitigate for impacts of the Isabella Lake DSM Project because construction would not be conducted, and project related impacts would not occur on USFS administration and recreation facilities. Noise and vibration generated effects would not occur from the DSM project or relocation actions.

### Proposed Action

Project generated noise and vibration from heavy truck, dozer and grading equipment would occur above 6 dBA at the fire response station site, the KWC site and the recreation areas listed above. The noise and vibration generated would be short-term, but could create direct and substantial noise to the adjacent residences and business on Huth Street, Balboa Street and Lakeland Street, to the Nui Cunni, and to recreationists adjacent to recreation areas undergoing restroom demolition, paving and grading. Noise decibels associated with heavy equipment conducting demolition, grading, site preparation, warm up of engines, vehicle backing and travel, dumping and associated activities, are expected to exceed ambient noise levels to nearby sensitive receptors and applicable standards (detail on construction noise decibels is found in Section 3.8.3 – 2012 EIS). Because construction would result in noise levels that exceed applicable standards, a substantial increase in ambient noise and other maximum instantaneous noise levels (e.g. back-up beepers, blasting), within the project vicinity, the noise would be noticeable to noise-sensitive receptors of residences and recreation areas during day-time hours.

In the immediate vicinity of the construction and grading sites, these direct effects could be adverse, high and potentially significant though they are temporary and intermittent. Demolition and the grading and site preparation phase of French Gulch Recreation Area is expected to continue for a period of four to six months. Removal of a large rock could potentially include a day with intermittent blasting activity. The intermittent noise of large equipment grading and preparing the site could constitute an annoyance to the Nui Cunni Center. However, hours of operation would occur only from 7:00 am to 7:00 pm, Monday through Friday, and would not interfere with weekend events at the center.

The construction period at the fire station response site is expected to continue for up to a year, though the louder decibels associated with grading and site preparation activities would not exceed two months. Direct construction-related vibration is possible from large construction equipment, but unlikely to cause noticeable impacts to sensitive receptors due to the softer surface substrate, irregular topography and distance from the closest residences. Long-term traffic generated noise is expected at the fire response station from fire engine, employee and visitor traffic. However, the majority of traffic is expected to exit and enter north of the station for access to Highway 178, and would not travel by the Kern County library or residences. Long-term and direct impacts to sensitive receptors near the fire response station could include

sirens and daily noise generated from fire engine equipment maintenance, and late night noise due to activity during the wildfire season that could include truck traffic. Summer and fall months would generate the greatest duration and intensity of noise produced by the fire response station in conjunction with the wildfire season and the VIC responding to Forest visitation. Winter is expected to be relatively quiet. However, indirect effects of noise levels of long-term operations and would be similar to ambient noise and levels generated from the nearby Kern County Sheriff Office and facilities, and existing traffic noise from State Route Highway 178 and Lake Isabella Blvd. Site development and construction would follow the KRVSP Noise Element policies. These policies include a limitation on construction from Monday through Saturday from 7:00 am to 7:00 pm, which would be further limited to Monday through Friday at recreation sites. Construction at recreation areas would not be conducted on holidays and during special events.

Building demolition, site preparation and construction noise at the KWC is at sufficient distance from sensitive receptors within the town of Kernville that noise and noise impacts are not expected to create annoyance outside the work center. Visitors walking along Kernville Rd. adjacent to the KWC may experience noise from site grading for up to a month, and from other noise resulting from construction of the new USFS administration and warehouse building. However, a high existing ambient noise level is provided by traffic on Kernville Rd., and other activities within the town of Kernville, and temporary construction activities are not expected to generate potentially significant impacts. Construction hours would be limited to Monday through Saturday, or Monday through Friday during important spring and summer weekend events, between the hours of 7:00 am to 7:00 pm. Noise effects upon sensitive receptors within the town center of Kernville would be reduced with the move of the USFS administration to the KWC.

Noise generated from demolition of restrooms, grading and paving of roadways in recreational areas could be sufficiently loud to create disturbance to nearby recreationists that are engaged in camping, sightseeing, swimming and boating activities. This noise, however, would be temporary and intermittent and is expected to be conducted according to the KRVSP Noise Element. It is expected that the proposed actions would be conducted on Mondays through Fridays from 7:00 am to 7 p.m., outside of federal holidays and special events.

Noise resulting from construction of the new facilities would be conducted under County noise thresholds, or would be permitted by the County for any disturbance outside of thresholds associated with noise exempt hours. Compliance with the KRVSP Noise Element would minimize short-term construction noise effects on sensitive receptors to less-than-significant. The proposed action is not expected to exceed the basis of significance regarding exposure of sensitive receptors 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. The proposed action

would also not cause exposure of sensitive receptors to, or cause generation of excessive ground borne vibration or ground borne noise levels; cause a substantial permanent increase in ambient noise levels in the project vicinity above levels without the project, or cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project. Mitigation measures and BMPs as listed below would be necessary to reduce effects of project actions. Incorporation of these mitigation measures is expected to reduce noise and vibration impacts to less-than-significant-with-mitigation.

### **3.4.4 Mitigation**

- The contractor would follow the Kern County Noise Control Ordinances.
- Construction hours would be limited to the normal daylight working hours of 7:00 am to 7:00 pm, Monday through Saturday, and may be limited to Monday through Friday as required by Kern County or in areas of high public weekend use.
- A contractor-prepared Construction Noise and Vibration Monitoring Plan would be prepared before commencing work as detailed in the 2012 EIS (Section 3.8.4).
- Noise monitoring would commence with repeated public nuisance complaints.
- Equip all equipment with noise control devices (e.g. mufflers), in accordance with manufacturer's specifications.
- Inspect all equipment periodically to ensure proper maintenance and presence of correct noise control devices.
- Locate all stationary equipment as far as feasible from nearby residences and equip with engine-housing enclosures as feasible.
- Use portable noise barriers to shield stationary equipment.
- Prevent excessive idling of equipment; maintain idling under 5 minutes wherever possible.
- Designate a noise coordinator and conspicuously post a 24-hour contact number around the project site, and supply to nearby residents. The disturbance coordinator would receive all public complaints and be responsible for determining the cause of the complaint and implementation of any feasible measures to alleviate the problem.
- Provide written notice of construction-related activities to nearby sensitive receptors identifying the type, duration and frequency of activities and a

mechanism to register complaints. Post these notices at the recreation areas and make available to occupants of nearby residences.

- Encourage the hauling of material along any sensitive routes close to sensitive receptors from 8 am to 5 pm.
- Discourage the use of engine braking (jake brakes) along routes with sensitive receptors.
- Encourage truckers to reduce engine noise when shifting in noise sensitive areas, and post these areas.
- Notify all residencies and businesses within 1,500 feet of construction of blasting activities prior to blasting.

### **3.5 TRAFFIC AND CIRCULATION**

#### **3.5.1 Regulatory Setting**

The traffic and Circulation section of the Draft EIS (Section 3.7) sufficiently characterizes the regulatory setting for this resource.

#### **3.5.2 Existing Conditions**

The Traffic and Circulation section of the Draft EIS (Section 3.7) sufficiently characterizes the affected environment for this resource. There have been no studies or new data generated to date that are relevant to the discussion of the affected environment.

#### **3.5.3 Effects**

##### Basis of Significance

An action would be considered to have a significant effect on transportation if it would:

- Cause an increase in traffic that is substantial in relation to the existing load and capacity of a roadway; cause an increase in safety hazards on area roadways, or;
- Cause substantial deterioration of the physical condition of area roadways.

## No Action

Under the No Action Alternative, there would be no Federal participation in remedial improvements to the Isabella main dam, spillway, or auxiliary dam. The Operating Restriction at elevation 2,589.26 NAVD88 (356,700 acre-feet) would become permanent. Initiated by the Corps in 2006, the Operating Restriction was intended as an emergency deviation from the Water Control Plan in order to lower the lake level to a safe elevation and capacity. It is possible that without dam safety modifications to reduce the risk of dam failure and life safety concerns, the Operating Restriction would further reduce the lake level. However, despite risk reduction measures, the Isabella Dams would still possess an unacceptably high risk of failure under the No Action Alternative. The potential environmental, economic, and human consequences of dam failure could be extremely high.

Under the No Action Alternative, the Corps would not mitigate for impacts of the Isabella Lake DSM Project because construction would not be conducted, and project related impacts would not occur on USFS administration and recreation facilities. There would be no construction related traffic effects and no changes in the current traffic levels or circulation.

## Proposed Action

Direct effects consist of a short-term and intermittent increase in traffic for up to six months, which is expected on Highways 155 and 178, and Lake Isabella Blvd.. These direct effects would be due to increased construction traffic to access the proposed actions at the recreation areas (Boat Launch 19, Auxiliary Dam, Old Isabella Rd., South Fork, and French Gulch), the KWC and the fire response station on Lake Isabella Blvd between years 2016 and 2019. The contractor at French Gulch would produce a traffic management plan to ensure safety and effective circulation of vehicles that access the Nui Cunni center and the recreation area during the construction period.

Variability in the relocation construction schedule does not allow scheduling of traffic, but up to twenty construction related truck trips per day could access each site for a limited period of time. Some traffic delay would be expected from construction vehicles entering and exiting the recreation areas from years 2017 to 2020, with an associated amount of safety hazard. The proposed actions are not expected to impact current traffic patterns significantly due to a relatively low base record of traffic, but they would contribute additional roadway and intersection traffic to the DSM project as assessed by the Draft 2012 EIS. Indirect effects include increased recreational traffic expected at the French Gulch Recreation Area from 2018 to 2022, resulting from the shift of Boat Launch 19 launch activities. Additional paving at this turn lane should provide sufficient clearance for vehicles turning from Highway 155, but southbound vehicles pulling boats could cause short delays or slowing of southbound traffic as they turn into



the French Gulch Recreation Area. Traffic effects are not expected at Recreation Areas off Highway 178.

The intersection at Highway 178 and Lake Isabella Blvd. would receive intermittent and temporary vehicle traffic from contractor vehicles during the construction period of the fire response station. During operation and particularly during fire season, the indirect effects of additional vehicles of employees and visitors accessing the fire station is not expected to increase substantially and would not exceed the intersection capacity. The existing level of service (LOS-A) at this intersection has sufficient capacity to accommodate these vehicles without raising the LOS to another category (EIS Section 3.7.3). However, increased use of the highway intersection could increase safety concerns. The Corps has coordinated with Kern County regarding the entrance off of Isabella Blvd. and would widen the roadway to one hundred feet in width to accommodate a turn lane for long-term traffic use. Substantial deterioration of the roadway surface is not expected due to the relatively low level of use.

Contractors constructing the USFS administrative site at the KWC would also not produce sufficient traffic to cause an increase that would be substantial in relation to the existing capacity of the roadway. An existing turn lane would provide safe road accommodation for visitor and employee traffic traveling on Kernville Rd. to the KWC. Based upon the expected intermittent and temporary increase in a relatively low traffic volume, significant effects are not expected to traffic patterns or roadway conditions.

### **3.5.4 Mitigation**

The contractor would be responsible for preparing a Construction Traffic Management Plan, including placement of appropriate signs, flaggers, barricades, and traffic delineation to minimize disruption and ensure public safety. Though only three to four trucks are expected to haul off-site material, it is recommended that the Traffic Management Plan direct this transport to disposal/recycling eastbound on State Route 178 towards Ridgecrest in order to avoid the more congested westbound State Route 178 into Bakersfield. This action would reduce short-term impacts on traffic.

The contractor would be required to obtain all necessary traffic-related permits prior to initiation of construction; these permits would include required terms and conditions during construction, including the preparation of the Construction Traffic Management Plan to avoid effects or reduce any short-term effects on traffic to less than significant and ensure public safety during construction.

## **3.6 RECREATION**

### **3.6.1 Regulatory Setting**

The recreation section of the Draft EIS (Section 3.12.2) sufficiently characterizes the regulatory setting for this resource. Since the release of the EIS and draft Recreation Report, the Corps, in coordination with the Office of Management and Budget concluded that sufficient authority from a 1964 MOA exists to allow the Corps to use its appropriated funds to relocate in-kind services of USFS facilities impacted by the Isabella Lake DSM Project (see Section 1.4 and Section 1.5) as mitigative actions, and an intrinsic part of the Isabella Lake DSM project. With these mitigations, permanent loss of recreational facilities, opportunities or resources would not occur.

### **3.6.2 Existing Conditions**

The Draft EIS (Section 3.12.3) details the existing conditions of Isabella Lake recreation and a summary of existing sites is found in the Recreation Report in Appendix A of this SEA. A detailed summary of facilities found at each site is also listed in Appendix B. Information on existing conditions was additionally provided in the Final Report, Isabella Lake Recreation Data Collection (Corps 2013).

#### **Boat Launch 19 (Main Dam Boat Launch)**

Boat Launch 19, also referred to as the Main Dam Boat Launch, is located east of the Main Dam and between the Main and Auxiliary dams on the western side of Engineers Point. Access from Highway 155 to the launch is via Ponderosa and Barlow Roads. The site is used primarily for launching of small non-motorized and motorized watercraft, and consists of a long, steep boat ramp leading into a relatively deep part of the lake, parking and restroom facilities. In addition, a courtesy dock of 8 ft. by 80 ft. is located here which is adjusted with fluctuating water levels. With recent low lake levels, Boat Launch 19 was periodically unusable due to low water levels and a sand bar located at the base of the launch after mid-July of 2013. The USFS has responded by working to facilitate continued, limited use of this ramp since July 2013. This launch is also used by first responders in public safety emergencies when sufficient water is present to launch.

There are two paved parking lots adjacent to Boat Launch 19. In addition to parking for visitors and boaters, the paved parking areas are used as the staging area for bass tournaments. The lower parking lot has 58 spaces (14 regular spaces, 43 long spaces for vehicles with trailers, and one handicap space). The upper parking lot has 18 parking spaces (nine regular spaces, seven long spaces for vehicles with boat trailers, and two handicap spaces). A restroom facility

is located near the upper lot with separate men's and women's toilet, sinks, and electrical lighting.

### French Gulch Recreation Area

The French Gulch Recreation Area is accessed directly from Highway 155 from the west side of Isabella Lake. The site is a popular day-use recreation area for paddle boarding and swimming in addition to launching boats and jet skis. The Kern County Lake Patrol staff office and floating boat docks are located along the top southwestern edge of the site. A group camping area is available by reservation only.

The site includes several paved parking areas, restrooms, and trash receptacles. Two large paved parking lots provide car and boat trailer parking. The upper lot provides access to the existing restroom and the Kern County boat registration station. The lower parking lot and use area provides car and trailer parking in addition to boat launching. A constructed launch is not available here so visitors use the shoreline for launching watercraft.

The Nuui Cunni Native American Inter-Tribal Culture Center (Nuui Cunni Center) is located within the French Gulch Recreation Site, where it houses a museum, library, gift shop, and Visitors' Center. The Center includes 5.6 acres of grounds with native plant exhibits and tribal artifacts. The Center is operated by the Kern River Paiute Council through a Special Use Permit from the USFS. Native crafts are made here on Wednesday nights and a seasonal farmer's market uses the Center grounds on Saturdays.

### Auxiliary Dam Recreation Area

The Auxiliary Dam Recreation Site is accessed from Highway 178 on the east side of the lake. This recreation area incurs the greatest amount of recreational use of recreation areas within the dam vicinity during summer months. Visitors primarily utilize the shoreline areas to camp in recreational vehicles and tents. Visitors also participate in day-use recreation including site seeing, sun-bathing, swimming, picnicking boating, jet skiing, wind surfing and kite boarding. The ground surface for the Auxiliary Dam, Old Isabella Road, and South Fork Recreation Areas is exposed mineral soil, sand and rock. The sites consist primarily of open expanses of sands with small amounts of scattered ruderal and intermittent native shrub vegetation. Dryland shrub types such as yellow rabbitbrush (*Chrysothamnus viscidiflorus*), California buckwheat (*Eriogonum fasciculatum*), and nonnative grasses are present above the flood zone. Wetland vegetation is not found here due to frequent lake fluctuation and xeric soil conditions.

Facilities at the site include three restrooms above the lake's flood control pool elevation. Portable toilets, that are moved as the water level fluctuates, are placed by the USFS below the flood control pool elevation. Picnic sites with tables and outdoor cooking grills are present above the flood control pool elevation. The entrance to the recreation area has a ranger kiosk and a pad for the campground host to park a trailer with power and water. The site provides an RV dumping station and trash receptacles. The dump station is currently on an honor fee system. A USFS Daily or Annual Southern Sierra Pass is required for day use or camping, and the kiosk is staffed on high use weekends to issue these passes to visitors.

### Old Isabella Road Recreation Area

Located adjacent to the Auxiliary Dam Recreation Area on the east side of the lake and accessed by Highway 178, Old Isabella Road Recreation Site provides camping and day-use for lake visitors. Windsurfing, kite boarding and other water activities are popular at this site. Similar to Auxiliary Dam Recreation site, boat trailers, RVs, and other types of camping vehicles are pulled up to approximately 2,225 feet of rocky linear shoreline for camping. A smaller amount of open space for camping is available here and roads are rough and can be more difficult to traverse. Two 48 ft. wide grooved concrete boat launches, one for high water and one for low water with a 8 by 40 ft. floating courtesy dock are provided by the USFS at this site. These launches are considered less functional than other launches. Approximately 180 car and/or trailer asphalt spaces cover approximately 1.7 acres of paved parking for vehicles and boat trailers. One cinder block restroom with flush toilets and electrical fixtures, and one single vault toilet building provide sanitary facilities.

### South Fork Recreation Area

The South Fork Recreation site, accessed from Highway 178, is located east of the Old Isabella Road Recreation Site and west of Paradise Cove. Boating and camping are popular along the shoreline. A Daily or Annual Southern Sierra Pass is required for day use or camping at this area. The South Fork boat launch was the only operable boat launch throughout the summer of year 2013. Until July 2013, a commercial facility, Red's Marina, was located at this site, providing marina services, a deli, and docks for boats, including several sailboats. As a result of the low water levels, the marina was moved to the east end of the Old Isabella Road Recreation Site and may return once higher water levels are present. A restroom facility and unpaved parking is currently provided at the South Fork Recreation Site. Additional features include picnic tables, fire rings, potable water, portable toilets and trash receptacles.

### Main Dam Campground

Main Dam Campground is a site directly off Highway 155, located adjacent to the Main Isabella Dam. The campground has been closed for approximately six years due to infrastructure issues, Corps DSM project work and dam security. During this time maintenance has not occurred to existing structures in the campground. Due to its proximity to the Main Dam outflow, the area was used primarily for camping and fishing. Paved roadways access approximately sixty-three designated camp sites with tables and grills, and one cinder block restroom with flush toilets, sinks, mirrors and electrical connections. Large trees provide shade and visual screening for visitors with a terrain of rolling hills. Vegetation at the site consists of a diverse understory of non-native ruderal plants, native shrubs and mature exotic and native trees. Non-native Aleppo pine (*Pinus halapensis*) exists here with native trees such as Fremont cottonwood (*Salix fremontii*), blue oak (*Quercus douglasii*), gray pine (*Pinus sabiniana*), canyon live oak (*Quercus chrysolepis*) and interior live oak (*Quercus wislizenii*). Native understory native species include yellow rabbitbrush, California buckwheat, mulefat (*Baccharis viminea*), buckthorn (*Ceanothus cuneatus*), beavertail cactus (*Opuntia basilaris*) and Parry's beargrass (*Nolina parryi*).

### **3.6.3 Effects**

#### Basis of Significance

An action would be considered to have a significant effect on recreation if it would:

- Result in a permanent loss of recreational opportunities or resources;
- Severely restrict or eliminate access to recreational opportunities and facilities;
- Cause a substantial disruption in a recreational use or activity; or
- Substantially diminish the quality of the recreational experience.

#### No Action

Under the No Action Alternative, there would be no Federal participation in remedial improvements to the Isabella main dam, spillway, or auxiliary dam. The Operating Restriction at elevation 2,589.26 NAVD88 (356,700 acre-feet) would become permanent. Initiated by the Corps in 2006, the Operating Restriction was intended as an emergency deviation from the Water Control Plan in order to lower the lake level to a safe elevation and capacity. It is possible that without dam safety modifications to reduce the risk of dam failure and life safety concerns, the Operating Restriction would further reduce the lake level. However, despite risk reduction measures, the Isabella Dams would still possess an unacceptably high risk of failure

under the No Action Alternative. The potential environmental, economic, and human consequences of dam failure could be extremely high.

Under the No Action Alternative, the Corps would not mitigate for impacts of the Isabella Lake DSM Project because construction would not be conducted, and project related impacts would not occur on USFS administration and recreation facilities. Reduced lake levels for dam safety purposes may have some adverse effect on recreation aesthetics and water-based recreation such as fishing. Fishing success has been related to high lake water levels (see Recreation Section 3.12.2 in the 2012 Draft EIS).

Proposed Action

The Draft EIS (Section 3.12.3) details the potential impacts of the Isabella Lake DSM Project on recreational facilities and opportunities. These recreation impacts were identified to be significant and the proposed actions of this SEA are the mitigation actions which would reduce the DSM project actions on recreation to less-than-significant.

The estimated time line for the proposed actions is shown in Table 3 below. These estimated construction times below may vary due to lake elevations, contract flexibility, and contractor schedules. Significant direct or indirect effects are not expected on recreation from the relocation of existing facilities and construction activities. A substantial disruption in a recreational uses and activities is not expected. Construction would be conducted primarily during winter months during the lowest visitor use period of the year, and after the Labor Day holiday. Indirect impacts could include some confusion and temporary adjustment to availability of new boat launch and recreation facilities as relocation actions are completed. Construction work within recreation areas would not be conducted on weekends, holidays or special events.

**Table 3. Estimated Recreation Construction Timeline.**

<b>Recreation Area</b>	<b>Estimated Duration</b>	<b>Start Date</b>
<b>Phase 1</b>		
Auxiliary Dam Rec Area - Replacement and Facilities Construction	4 months	January 2018
Old Isabella Road Rec Area -Boulder Clearing and Facilities	2 months	January 2018
French Gulch Rec Area - Facilities Construction	4-6 months	Sept. or May 2016

South Fork Rec Area – Facilities Construction	2 months	Sept. 2018
<b>Phase 2</b>		
Auxiliary Dam Rec Area – Road Construction to Old Isabella Road Rec Area	2 months	January 2018
Main Dam Campground - Restoration Construction	4 months	December 2020
Launch 19 Post Construction Parking Restoration	4 months	January 2022

Construction actions would not severely restrict or eliminate recreational access. All recreation area facilities would be replaced before loss of existing facilities occurs, however, some facilities may be temporarily unavailable during the actual installation of new restrooms and new asphalt access paving. However, facilities and boat launches in more than one recreation area would be consistently available to the recreating public. Before the closure of Boat Launch 19 for DSM project construction, new launch facilities would be in place at French Gulch. The interim substitution of launch facilities at French Gulch would not impact recreational boating opportunities. Indirect effects regarding the quality of the recreational experience is not expected to substantially diminish as a result of short-term construction within the recreation areas. After Launch 19 reopens, following DSM project completion, the USFS would have the option to continue operation of the launch and restroom facilities at French Gulch as they would not be removed by the Corps, which could provide a beneficial result of increasing the current number of launch facilities.

No permanent loss of recreational opportunities or resources is expected. The relocation of the recreational facilities in Auxiliary Dam Recreation Area to the northward site would be conducted before the contractor utilizes the site as a staging area. Any permanent loss of recreational acres and facilities in this area due to contractor use and the extension of the Auxiliary Dam would be mitigated by the new and additional facilities at Old Isabella Road Recreation Area and South Fork Recreation Area. Boulder clearing of the Old Isabella Road Recreation Area would open up the shoreline for camping and other recreation activities as in-kind replacement for the loss of recreational acreages at Auxiliary Dam Recreation Area.

Main Dam Campground, closed to the public since 2006, would be changed from individual to group campsites to accommodate the demand for group camping. Permanent recreational opportunities would increase at this site, compared to the current closed status of the facility and unmaintained condition of facilities. The Main Dam Campground is expected to



open to the public permanently after January 2021.

The Whiskey Flat Days carnival rides occur annually over a weekend at the KWC and would be displaced by the new USFS administration building and warehouse as an indirect impact. The event annually solicits a permit from the USFS to hold carnival rides on the KWC site and would need to be held elsewhere. However, the new visitor information center at the KWC would provide long-term services and access to Forest visitors seeking Forest recreation information, as well as USFS administrative functions.

All in-kind services, to be provided for recreation areas would be in new condition (launch facility, restrooms, access roads), and would be an improvement over existing worn restroom and parking facilities. The USFS has requested that vault toilets be installed by the Corps instead of current flush toilets due to maintenance concerns. Some recreational visitors may not appreciate vault toilets and could miss the convenience of inside sinks and mirrors, however, this would not be considered to significantly diminish the recreation experience.

The replacement and installation of new facilities, such as restrooms, and new asphalt parking, could directly inconvenience recreationists on a short-term basis. As a restroom is demolished and then replaced at site with a waiting modular unit, this installation time may inconvenience recreationists at a specific campground for up to a week. The placement of new asphalt on entry and roadways may also disrupt vehicle travel of recreationists for up to a week. The presence of construction equipment may create a short-term aesthetic impact (discussed in Section 3.8) and noise impact (Section 3.4), but it is not expected to permanently diminish the recreation experience or permanently restrict visitors from recreational facilities. A range of facilities and opportunities would be consistently available to recreationists along the linear shoreline of Auxiliary Dam Recreation Area to South Fork Recreation area, or at French Gulch during weekdays and on weekends and holidays. With incorporation of the following mitigations, the following impacts would not occur: permanent loss of recreational opportunities, severe restriction or elimination of recreation areas, or substantial disruption or diminishing of the recreational experience. Significant impacts to recreation are not expected with the following mitigations.

### **3.6.4 Mitigation**

- Cease construction operations in recreational areas on weekends and holidays to avoid disruption and provide for safety of visitors.
- Cease construction operations in recreation areas during special recreation events (long weekends), including the Annual Isabella Lake Fishing Derby, and July 4<sup>th</sup> weekend.

- Provide schedules and keep the USFS closely advised on recreation area construction activities.
- Complete construction actions in one recreation site before conducting construction actions in other recreation sites to avoid short-term displacement of visitors.
- Maintain contained and orderly construction sites to reduce visual impacts.

## **3.7 WATER QUALITY**

### **3.7.1 Regulatory Setting**

The Water Resources Section of the Isabella Lake DSM Project Draft EIS (Section 3.6.1) sufficiently characterizes the regulatory setting for this resource.

### **3.7.2 Existing Conditions**

The Water Resources Section of the Isabella Lake DSM Project DEIS (Section 3.6.2) sufficiently characterizes the affected environment for this resource. There have been few additional revisions, studies, or new data relevant to the discussion of the affected environment. Two exceptions include the placement below high water level of the new boat launch ramp at French Gulch and the construction of an aggregate connector road from Auxiliary Dam Recreation Area to Isabella Old Road Recreation Area.

### **3.7.3 Effects**

#### Basis of significance

A significant effect would involve a substantial degradation of water quality, contamination of water supply, substantially degrade or deplete ground water resources, interfere with ground water recharge or expose special status species or humans to substantial pollutant concentrations.

#### No Action

Under the No Action Alternative, there would be no Federal participation in remedial improvements to the Isabella main dam, spillway, or auxiliary dam. The Operating Restriction at elevation 2,589.26 NAVD88 (356,700 acre-feet) would become permanent. Initiated by the Corps in 2006, the Operating Restriction was intended as an emergency deviation from the Water Control Plan in order to lower the lake level to a safe elevation and capacity. It is possible that without dam safety modifications to reduce the risk of dam failure and life safety concerns, the Operating Restriction would further reduce the lake level. However, despite risk reduction measures, the Isabella Dams would still possess an unacceptably high risk of failure under the No Action Alternative. The potential environmental, economic, and human consequences of dam failure could be extremely high. Based on Corps studies, one or both dams have unacceptably high risk. The timing and nature of a potential dam failure cannot be specified, but the loss of one or both dams would likely flood areas between Isabella Lake and Bakersfield and beyond. The indirect impacts would substantially degrade water quality, contaminate water supply, and expose humans or special status species to substantial pollutant concentrations. The No Action alternative would have a significant, long-term adverse effect to water quality.

### Proposed Action

While there would be no construction conducted in the water (in-the-wet) for the proposed action, the proposed boat launch at the French Gulch Recreation Area and aggregate connector road between Auxiliary Dam Recreation Area and Old Isabella Road Recreation Area would be constructed below the high water mark during low lake levels. No direct impact from in-the-wet water work is expected at French Gulch as the lower sections of the launch ramp would be installed during low water levels, and concrete pour would be conducted in dry conditions. These areas have incurred prior soil disturbance, primarily by USFS and recreational uses, and could be contributing to soil erosion and direct runoff into water bodies. Additional disturbance of soil during site preparation, demolition, and construction of the structures near the lake could indirectly degrade local water quality due to increased surface runoff in areas adjacent to Isabella Lake and the Kern River. Indirect effects of inadvertent spills of oil or fuels from construction equipment could be a source of ground water contamination at work, staging areas or as a result of recreational boat launching at French Gulch. However, the project is not expected to increase indirect impacts from the number of boats launching and incidental spills from recreational activities. With mitigation stated below and compliance with water quality certifications, no water degradation is expected from the proposed action, and the project would constitute a less-than-significant impact-with-mitigation.

### **3.7.4 Mitigation**

The proposed project would result in the disturbance of more than one acre; therefore, the contractor would be required to prepare a National Pollutant Discharge Elimination System

(NPDES) storm water permit (Section 402 of the CWA) from the Central Valley Regional Water Quality Control Board (CVRWCB). The Construction NPDES Storm Water Permit covers storm water discharges from construction sites discharging to waters of the United States. A storm water pollution prevention plan (SWPPP) is typically required under this permit and would be the responsibility of the contractor. The SWPPP would be designed prior to groundbreaking and include necessary BMPs to prevent potential pollutants from leaving the construction site during a storm event. Fugitive dust control measures are also included as part of the SWPPP. The contractor would be responsible for implementing, maintaining, and monitoring BMPs during demolition.

There would be a minor amount of project fill to the Lake associated with the boat launch at French Gulch and Auxiliary Dam Recreation Area connector road, therefore, a Federal Clean Water Act (CWA) Section 404b documentation would be required. In addition, water quality thresholds for the boat launch and aggregate connector road would be thoroughly assessed and monitored. Compliance with the CWA would be conducted with a State CWA Section 401 Certification. With implementation of the Section 401 Certification, no significant effects are expected on water quality.

## **3.8 AESTHETICS**

### **3.8.1 Regulatory Setting**

The Aesthetics Resources section of the Draft EIS (Section 3.13) characterized the regulatory setting for this resource.

### **3.8.2 Existing Conditions**

The Aesthetics Resource section of the Draft EIS (Section 3.13) characterizes the affected general environment for this resource. There have been no additional revisions, studies or new data generated that are relevant to the discussion of the affected environment.

### **3.8.3 Effects**

#### **Basis of Significance**

An alternative would be considered to have a significant effect on visual resource if changes in the landform, vegetation, or structural features substantially increased levels of visual contrast as compared to surrounding conditions.

### No Action

Under the No Action Alternative, there would be no Federal participation in remedial improvements to the Isabella main dam, spillway, or auxiliary dam. The Operating Restriction at elevation 2,589.26 NAVD88 (356,700 acre-feet) would become permanent. Initiated by the Corps in 2006, the Operating Restriction was intended as an emergency deviation from the Water Control Plan in order to lower the lake level to a safe elevation and capacity. It is possible that without dam safety modifications to reduce the risk of dam failure and life safety concerns, the Operating Restriction would further reduce the lake level. However, despite risk reduction measures, the Isabella Dams would still possess an unacceptably high risk of failure under the No Action Alternative. The potential environmental, economic, and human consequences of dam failure could be extremely high.

The timing and nature of a potential dam failure cannot be specified, but the loss of one or both dams would likely flood areas between Isabella Lake and Bakersfield. The catastrophic loss of one or both dams would significantly cause a long-term alteration of the visual landscape for the Isabella Lake basin, as well as the San Joaquin Valley, due to flooding of the areas between Isabella Lake and Bakersfield. This would be considered a significant adverse impact on visual resources. Also, under the No Action alternative, recreational and administrative relocations would not occur and would not result in visual effects to the area.

### Proposed Action

This alternative would produce both short- and long-term direct effects on local viewsheds, as a result of recreation and administrative facility demolition and construction. Long-term effects would result from permanent installations of administrative and recreational facilities. Short-term disturbance of the natural landscape would occur during active construction, primarily affecting recreational users within the recreational areas.

The presence of large and varied construction equipment working intermittently for up to four months at some recreational areas, including French Gulch, Auxiliary Dam, Old Isabella Rd., and South Fork, would be the primary cause to adversely and directly affect the natural landscape view. Recreationists would be in visual alignment with construction activities as they enter the recreation areas and access facilities, but the construction activities would not interfere with shoreline visuals. Sharp geometric angles, glare from reflective surfaces, and artificial bright colors of construction equipment, safety flagging and delineations would contrast sharply

with muted colors, shapes and forms of the natural environment. Construction materials, material piles, lights and debris would affect visual resources by adding a noticeable level of commotion to areas with low levels of activity. Visitors on weekends would be less affected by equipment as construction work would cease on weekend days in these areas. Visual impacts would reduce the level of recreational experience for visitors expecting minimal visual disturbances.

Visual contrasts resulting from project construction actions would be temporary. After facilities are completed, area visuals are expected to improve. Replacement of older, dirty or degrading restrooms, with new structures would provide an attractive or cleaner aesthetic visual for recreationists. Colors and textures of the restrooms, kiosks and other structures would be designed to reflect the grays and brown of the rocks and soil in the surrounding landscape, producing less of a visual contrast. New entry and parking areas may initially produce a sharp visual contrast with black asphalt, but the color would quickly soften as sand and dirt is tracked onto the surface. Solar powered lighting would be installed in compliance with the Kern County Dark Sky ordinance (Section 19.81 of the Kern County Zoning Ordinance). Native vegetative plantings would further soften artificial lines and angles of parking areas and structures. Because the recreation construction phase is interim and short-term, and aesthetic visuals would return to prior or an improved status, the effects would not be significant with mitigation listed below.

Construction of administrative structures at the KWC would be of reduced visual contrast due to conformity with adjacent uses and structures. The KWC is situated directly across the street from Kernville with commercial buildings, landscaped borders and parking lots. Currently, the site surface for the administrative building is bare soil and scattered with ruderal plants and exotic grass species. A line of cypress trees borders the Kernville Road and KWC entrance road. The construction period of the administrative office, warehouse and associated parking lots is expected to last up to a year. The office and warehouse would be most visible to street views, but the duplex demolition and parking lot construction would not be as visible to the street or to surrounding properties. The adjacent Kern River is densely vegetated with riparian vegetation and drops below the visual line of the KVC facility sites and would not be expected to impact recreationist views on the river. A line of approximately eight mature cypress trees and a few scattered non-native trees would be removed to enable warehouse construction, which would constitute an adverse visual to individuals preferring tree views.

The results of facility construction and landscaping with native plant species could be expected to produce a positive visual response as the USFS office would be relocated in a more welcoming, visual and identifiable location for Forest visitors searching for information. The new and updated design of the USFS office would be painted in muted tones consistent with USFS standards. The designed roof line, also in conjunction with USFS architectural standards, would support a staggered roof line on a single story building reaching 32 feet in height and set

back from the street. As a result, the office building is not expected to create an overwhelming or blocky architectural view from the street. Landscaping would reduce the contrast of bare soil and weedy vegetation on the site and provide a more ordered and consistent visual with commercial enterprises along Kernville Rd. in downtown Kernville. Lighting would be consistent with the Kern County Dark Skies Ordinance and would not cause excessive glare to street traffic. This administrative office and warehouse relocation is not expected to produce significant aesthetic effects, and would likely improve the current visual aesthetics of the USFS KWC.

Construction activities at the fire response station would create short-term temporary visual effects similar to those described for the recreation areas. The landscape visuals of low native vegetation shrub and grasses would change to a long-term view of a developed facility with angular structures and vertical projections on a site of 4.1 acres. However, nearby recreational visitors and businesses are not juxtaposed such that they would incur adverse visuals from the proposed station. Residences to the southeast of the site would be in direct visual line of ongoing construction activities, which could constitute a short-term interruption to their view of the natural landscape. Long-term visual impacts to these residences may also result as the fire response station complex could interrupt, but would not impede, an open northwest view towards the lake.

Along the linear aspect of Lake Isabella Blvd., similar type facilities and structures are situated to the south of the fire response station site, and an open undeveloped natural landscape is present to the north. The proposed fire response station is consistent with the southward visual along Isabella Blvd., which consists of a California Water Services Company commercial building, the Kern County library, Sheriff's office and Administration Buildings and a commercial zone along Lake Isabella proper. The fire response station structures with the addition of rock and native plantings would in effect transition the developed edge to a natural landscape.

A range of high hills and gray pine to the southeast of the proposed station, frames the rolling landscape of the project site along Isabella Lake Blvd. Despite irregular topography between the residential area of Huff Drive and the proposed station, the station building and other structures would be visible from the residential area and Lake Isabella Blvd. Additional station structures would consist of an open-lattice fire hose tower of 55-feet in height; a fire response building with a roofline up to 24-feet in height, and six, 38-foot high vertical-axis turbines (VAWT) (see Appendix C for photograph). The main building roofline would be aesthetically staggered in height with outside walls of muted colors that correspond with the surrounding landscape. A rock-like wainscoting would encircle the exterior walls. Fire engines and other facilities, such as radio antennas, would also be visible from the adjacent roadway and residential area, but these features would not be considered significant as they are visually



consistent with other structures to the south along Lake Isabella Blvd. Installed lighting would be consistent with the Kern County Dark Skies Ordinance and would not cause excessive glare to street traffic or the view shed. Native vegetation and rock would be planted and landscaped to reflect that of the surrounding landscape with vegetation screening additionally installed between the residential area and the station.

The most disruptive direct impacts to be introduced to the viewshed would likely consist of the six VAWTs, which would be white in color with moving blades of approximately 13 feet in width. The movement of the blades, and color and height of each turbine pole supporting the blades would present a high visual contrast. Though these VAWTS are considered small and contained in size in comparison to horizontal turbines, they would present a new visual element that is not consistent with the northward landscape, but consistent with the development to the south along Lake Isabella Blvd. However, the VAWTs and other fire response station structures would not impede the local view shed, and would not be considered significant.

Other recreation and administrative structures would not impede the local view shed within the project area, nor would they cause a substantial increase in levels of visual contrast as compared to the surrounding conditions. The inclusion of the mitigation measures below would reduce visual impacts, and the proposed actions would not be considered significant with mitigation.

#### **3.8.4 Mitigation**

- Select locations and alignments for earthwork that fit into the landforms to minimize the size of cuts and fills.
- Retain existing native vegetation where possible.
- Plant a vegetative screen of gray pine and other native plants between the station and the residential area.
- Use materials and treatments on surfaces that blend into the landscape where possible to reduce color contrast. If function is not impaired by application, consider muted colors for the thirty foot VAWTS poles to reduce visual contrast.
- Use colors in construction materials that match the color of the characteristic landscape surface.

- Treat surfaces of all project structures and buildings visible to the public so that their colors minimize visual contrast by blending with the characteristic landscape colors and their colors and finishes do not create excessive glare.
- Ensure that lighting does not cause excessive reflected glare and direct lighting complies with the Kern County Dark Sky ordinance.
- Define routes of travel to and from the project site and prohibit cross-county vehicle and equipment traffic outside designated work areas.
- Provide a restoration plan prior to the commencement of the project, covering all areas subject to temporary disturbance.

### **3.9 VEGETATION AND WILDLIFE**

#### **3.9.1 Regulatory Setting**

The Biological Resources section of the Draft EIS (Section 3.10.1) sufficiently characterizes the regulatory setting for this resource.

#### **3.9.2 Existing Conditions**

The Biological Resources section of the Draft EIS (Section 3.10) and Final EIS (Section 3.8) sufficiently characterizes the general affected environment for this resource within the DSM project area. A final Fish and Wildlife Coordination Act Report (Appendix C of the Final EIS) provided by the U.S. Fish and Wildlife Service (USFWS) provides recommendations and vegetation compensation needs for wildlife habitat affected by construction of features associated with the Isabella Lake DSM Project and 4.1 acres off of Isabella Lake Blvd. Wildlife and vegetation species and effects are addressed for the recreation areas. However, the report did not address potential effects to vegetation and wildlife resources affected by relocation and construction of new facilities at the KWC and the 4.1 acres of the proposed fire response station site along Isabella Blvd.

The USFS prepared a Biological Resources Report (Evaluation for Plants and Animals, Management Indicator Species and Migratory Land Bird Conservation Assessment) for the KWC and Isabella Blvd. fire response station site (Appendix D). Field surveys were conducted in November and December of 2014. The following new information for the KWC and the

Isabella fire response station sites is summarized below from the USFS Biological Resources Report.

### Vegetation

The KWC is a disturbed site with little vegetation cover, which has been graded each year for the past three to four years. Scattered ponderosa pine, cypress and tree of heaven compose overstory species with an infestation of non-native puncture vine. This site was previously surveyed for Mojave tar plant with negative results. No special status plant species were observed in the site survey conducted by the USFS.

Portions of the 4.1 acre Isabella Blvd. site show evidence of heavy equipment used to grade and move rocks. The site is dominated by annual non-native grasses and a moderate shrub cover, primarily coyote bush. There is potential for sensitive mosses at this site (Appendix D), which would require survey during months of precipitation.

### Wildlife

At the KWC site, there was considerable gopher activity and signs of use by rabbits, coyote, and possibly bobcat. This developed area is not productive for wildlife nor does it contain a diversity of species due to surrounding development and lack of vegetative diversity. Existing wildlife would be expected to travel from and along the Kern River corridor situated on the north side of the KWC. The 4.1 acre Isabella Blvd site incurs similar wildlife use as listed for the KWC (see Appendix D). Neither site is known or expected to support populations of special status species.

## **3.9.3 Effects**

### Basis of Significance

Effects on vegetation and wildlife would be considered significant if the alternative would result in substantial loss, degradation, or fragmentation of any natural vegetation communities or wildlife habitat and/or interfere with the movement of any resident or migratory wildlife species.

### No Action

Under the No Action Alternative, there would be no Federal participation in remedial improvements to the Isabella main dam, spillway, or auxiliary dam. The Operating Restriction at elevation 2,589.26 NAVD88 (356,700 acre-feet) would become permanent. It is possible that

without dam safety modifications to reduce the risk of dam failure and life safety concerns, the Operating Restriction would further reduce the lake level. However, despite risk reduction measures, the Isabella Dams would still possess an unacceptably high risk of failure under the No Action Alternative. The potential environmental, economic, and human consequences of dam failure could be extremely high. Based on Corps studies, one or both dams have unacceptably high risk. The timing and nature of a potential dam failure cannot be specified, but the loss of one or both dams would likely flood areas between Isabella Lake and Bakersfield and beyond.

Under the No Action Alternative, there would be no substantial loss, degradation, or fragmentation of natural vegetation communities or wildlife habitat within the project area, nor would the No Action Alternative interfere with the movement of resident or migratory wildlife species beyond impacts of those associated with normal operations. However, if dam failure occurred, resulting flood waters could damage downstream habitats and cause indirect and direct impacts to wildlife species and habitat. Indirect impacts would also result as routine flood reduction and water storage operations at Isabella Dam and Lake sometimes result in prolonged inundation of riparian vegetation along the North and South Fork Kern River delta areas and this process would be interrupted by dam failure or reduced water levels. A vegetation profile with fewer wetland and riparian species would be expected as a result of dam failure.

### Proposed Action

The proposed action would result in direct impacts and long-term loss of approximately 2.5 acres of invasive grasses and ruderal vegetation at the KWC, and removal of up to 8 medium size (under 1 ft. diameter) cypress trees and tree of heaven. Native vegetation installed after construction would be expected to improve the diversity of vegetation, however, the increase of human activity and disturbance would likely cause indirect impacts of decreasing use by ground squirrels and larger mammals. The Kern River corridor is not expected to be affected by the project on a long-term basis. No wetlands are present at this site.

At the Lake Isabella Blvd. site, approximately 4.1 acres of grassland and shrub, primarily coyote bush, would incur direct impact by removal for the installation of structures, parking area, septic system and landscaping. This vegetation loss would be mitigated at the South Fork Wildlife Area site within the 85 acres of shrub and grassland mitigation to be conducted there per the USFWS CAR, and would not be considered a significant impact. No wetlands are present at this site. Approximately four acres of oak woodlands would be removed at the French Gulch Recreation Area. These acres would be mitigated at the South Fork Wildlife Area, included within the total 85 mitigation acres to be conducted for the DSM Project, and would not be considered a significant effect. Incorporating vertical structure, trees, into the native plantings of

the site may indirectly affect the bird species composition at the site, creating habitat for tree nesting and roosting species.

Additional effects on wildlife and vegetation within the recreation areas have been addressed under the Biological Resources section of the Draft EIS (Section 3.10) and Final EIS (Section 3.8). The periods of construction activity at each recreation area (French Gulch, Auxiliary Dam, Old Isabella Rd., South Fork, and Main Dam Campground) would cause disturbance to wildlife on a short-term basis. Minimal vegetation removal would occur at these sites with the exception of tree removal at French Gulch. Short-term adverse impacts would result from shoreline displacement of wildlife from noise, fugitive dust, human activity, and vibration. Since these effects are expected to be short-term, post-construction wildlife access should resume at pre-construction levels. However, effects from current recreation uses currently preclude much wildlife use of shoreline and shrub habitat. Though a temporary southward shift in recreation use is expected, it would not result cause an indirect impact of increased number of visitors to recreation areas. Permanent indirect impacts resulting from the recreation facilities relocation are not expected.

These project actions would not remove habitat elements for migratory land birds, with the exception of the direct tree removals at the KWC and French Gulch Recreation Area. The vegetation mitigation projects at the South Fork Wildlife refuge would provide compensation for indirect effects of tree removal by increasing acreage of woodland cover, shrubs and ground nesting habitat. With application of mitigation actions listed below to address protections specified by the Migratory Bird Treaty Act, significant impacts are not expected for migratory birds.

Six vertical-axis wind turbines (VAWT) of 38 feet in height are expected to be installed at the Lake Isabella site. Available bird and bat mortality studies pertain to large scale wind farms employing horizontal-axis wind turbines (HAWTs). From these studies, it has been demonstrated that HAWT wind turbines can adversely impact bird and particularly bat populations which do not detect rotating turbine blades as a source of mortality. Mortality of small passerines (song birds) and raptors is caused by rotor strike when birds fly directly into the rotation blades. Most known bat mortality occurs not from collision with rotating blades, but from a phenomenon known as barotrauma, which is caused by a swatch of low pressure left behind turning blades. As bats fly in to the low pressure area, internal airways expand rapidly, and cause internal bleeding resulting in mortality. All HAWT studies of bat impacts have demonstrated that fatalities peak in late summer and early fall, coinciding with the migration of many species. Bat fatalities also occur during spring migration for some species at particular facilities.

Turbine-caused mortality on birds and bats is well documented in the literature for large horizontal-axis turbines (USFWS 2012; USGS 2012; USACE 2013), but little documentation exists for the small VAWTs. VAWTs are considered less impacting to birds and bats than horizontal-axis wind turbines, which are considered to be a fundamentally different machine due to the differences in orientation and mechanics (USFWS 2012; USACE 2013). There is evidence that turbines on shorter towers and with smaller aerial footprints may reduce impact to flying wildlife (Barclay et al. 2007) because VAWTs have a much smaller profile than their horizontal counterparts, producing a smaller hazard to birds and bats. Large HAWT projects are intentionally placed in established wind corridors, which are the same corridors used by migratory birds. Smaller VAWTs, such as that proposed for Lake Isabella, are concentrated within a relatively small area, they are not large structures, and they would not be placed in known migration corridors. VAWTs have much smaller and isolated areas of lower pressure, and are much less likely to cause barotrauma for bats than large HAWT structures. The highest rates of mortality which have been studied occurred with turbine towers of 65 meters in height and taller, in contrast to the 38 foot heights of the VAWTs proposed for the fire response station. However bird and bat interactions with smaller wind turbines (power output of about 5 kW) have not been well documented (Andersen 2008), and details of bat and bird interactions with wind turbines are not well understood for the many variables associated with turbines of any size (Boyles et al. 2011).

The most applicable studies conducted for impacts by similarly sized (under 40 feet in height) VAWTs, was conducted by the National Park Service for five VAWT at Crissy Field in San Francisco (Golden Gate National Parks Conservancy 2012). Over a study duration of two years, a total of two birds incurred mortality after collision with either the towers or rotating blades (Ogders, Pers. Comm. 2015). No bat mortality was reported. Two additional periods of VAWT monitoring occurred at Fort Funston in the eastern U.S., with turbines under 40 feet in height. These VAWTs incurred no bat or bird mortality, but the turbines did not operate during night hours in order to avoid bat impacts (USACE 2013). Several species of tree roosting bats are identified as particularly vulnerable to collisions with HAWTs. Three migratory tree-roosting bat species seem to be particularly vulnerable: the hoary bat (*Lasiurus cinereus*), Eastern red bat (*Lasiurus borealis*), and silver-haired bat (*Lasionycteris noctivagans*) (USFWS 2012). Tree roosting bats have not been documented in the vicinity of the 4.1 acre site, but could possibly forage within the area. Special status bat species are addressed below in Section 3.10.

Among bird species, studies have documented that passerines are most at risk of flying into the line of rotating turbines, and this would most likely be applicable for the shorter and smaller VAWT turbines. Special status passerines are not expected to be within the vicinity of the turbines because habitat is not present for them at the site. The VAWT site off of Isabella Lake Blvd. does not provide attributes that would support populations or breeding habitats of special status species known in the vicinity of Isabella Lake. Mortality to any special status

species would be considered unusual and incidental resulting from travel during foraging or migration.

Reducing the availability of perch sites on older HAWTs, has been found to decrease bird mortality. The fifty-foot fire tower, adjacent to the VAWTs, could potentially serve as an attractive perch site for raptors and passerines, and it would be necessary to deter birds from roosting on this structure while turbines are active to avoid potential mortality. Vegetation would not be planted around the vicinity of the turbines to lessen the possibility of a bird flying from shrubs or trees directly into a turbine.

Guidelines established by the U.S. Fish and Wildlife Service Land-Based Wind Energy Guidelines (USFSW 2012) would be followed as applicable to meet compliances with the Endangered Species Act and the Migratory Bird Treaty Act. Measures from the California Guidelines for Reducing Impacts to Birds and Bats from Wind Energy Development (CDFG 2009) would be utilized as applicable. Specific bat protecting mitigations have been identified for HAWTs, such as operating turbines only when wind speeds exceed 5 to 6 meters per second, but these mitigations have not yet been applied or assessed relative to VAWTs. General mitigations and Best Management Practices would be documented in a Bird and Bat Conservation Strategy (USFWS 2012). While no mortality is expected due to the low risk at this location, monitoring would be conducted to document any incidence of mortality to avian or bat species due to the use of VAWTs. Due to the lack of information on site knowledge of bats at the 4.1 acre site off of Isabella Blvd., additional surveys would be conducted for bats.

Direct and indirect effects and habitat loss caused by the proposed administrative and recreational relocations would not result in substantial loss, degradation or fragmentation of natural vegetation communities or wildlife habitat. Implementation of the proposed action is not expected to interfere with the movement of any resident or migratory wildlife species. Incorporating the mitigations listed below would ensure that the project is not-significant-with-mitigation.

### **3.9.4 Mitigation**

Effects to vegetation, habitat and wildlife would be avoided or minimized by the following measures.

- Limit equipment and vehicles to the project construction site. Delineate boundaries for vehicles and construction activities with flagging, fencing or other suitable markers.



- Delineate vegetation areas and trees to be protected from construction activities with flagging, fencing or other suitable markers.
- To avoid any potential effects to migratory birds, conduct the following actions:
  - A qualified biologist would survey the project area within one-half mile of the project area prior to initiation of construction. If the survey finds a pair of nesting raptors present, the Corps would coordinate with CDFG and USFWS for proper avoidance and minimization measures. Monitoring may be required for raptor nests.
  - A qualified biologist would survey the project area for nests one week prior to construction to determine the presence of any nests that are occupied with eggs or chicks. Surveys must be conducted throughout the nesting season to identify new nests. Occupied nests are protected by the MBTA and must be protected in place, or relocated/removed under USFWS permit.
  - Trees that are identified for removal due to conflict with project actions, must be removed outside of the avian nesting season, March to September. Under guidance of a qualified biologist and USFWS, passerine nests without any chicks/eggs, would be removed if they cannot be protected without causing project delay.
- Implement Best Management Practices that would inhibit the establishment of weed species (USFS 2001;USFS 2005).
- Follow General mitigations and Best Management Practices from the USFS Land-Based Wind Energy Guidelines (USFWS 2012), and California State Guidelines (2009) as applicable to the site.
- Produce a Bird and Bat Conservation Strategy (USFWS 2012) for the administrative and recreation relocation sites with emphasis on the MBTA and survey and management of the wind turbine site.
- Monitor the VAWT turbines for a minimum of 7 months during bat and bird migratory and breeding seasons. Conduct surveys to identify any bat foraging and movements within the vicinity of the fire station response site.

- Place bird deterrents upon the fifty- foot hose drying tower to prevent birds from perching on the structure near the VAWT.
- Do not plant trees and shrubs in the vicinity of the VAWTs.
- Where construction activities result in the removal or disturbance of vegetation or disturbance of soils and are not replaced with landscaping, seed with native grass seed, wood fiber mulch and tackifier per the USFS specified application rates below:

Native Grass Seed Type and Application Rates:

- Three weeks fescue (*Vulpia microstachys*) or equivalent, 8 lbs/acre;
- Nodding needlegrass (*Nassella cernua*) or equivalent, 7 lbs/acre;
- Pine bluegrass (*Poa secunda*) or equivalent, 6 lbs/acre;
- Desert needlegrass (*Achnatherum speciosa*) or equivalent, 20 lbs/acre;
- Indian ricegrass (*Achnatherum hymenoides*) or equivalent, 4 lbs/acre, and;
- Squirreltail (*Elymus elymoides*) or equivalent, 5 lbs/acre.
- Wood Fiber Mulch (EcoFibre® or equivalent), 2,000 lbs/acre.
- Tackifier (PLANTAGO® Binder or equivalent), 200 lbs/acre.

### 3.10 SPECIAL STATUS SPECIES

#### 3.10.1 Regulatory Setting

The Biological Resources section of the Draft EIS (Section 3.10) and Final EIS (Section 3.8) characterize the general regulatory setting and existing condition for this resource with the exception of the KWC and the Lake Isabella Blvd. site for the proposed fire response station. Special Status species include:

- Species considered endangered, threatened or of special concern by the USFWS
- Species considered sensitive by the USFS.
- Species considered threatened, endangered, or fully protected by CDFG.
- Species considered threatened by the California Native Plant Society.

The Isabella Lake DSM Project was found in full compliance with the Endangered Species Act (ESA). A U.S. Fish and Wildlife Service (USFWS) biological opinion (BO) was included in Appendix C of the Final EIS. Changes to the regulatory setting for this resource since release of the Final EIS are described below:

#### Southwestern Willow Flycatcher

The USFWS designated revised critical habitat for the southwestern willow flycatcher (*Empidonax traillii extimus*) under the ESA (USFWS 2013b) on January 3, 2013. The revised critical habitat designation for the Kern Management Unit includes a 14.6-mile portion of the South Fork Kern River (including the upper 0.6-mile portion of Isabella Lake) and a 1.0-mile segment of Canebrake Creek in Kern County, California. Along this segment of the South Fork Kern River, two pieces of private land that were woven within this segment, the privately owned and operated Hafenfeld Ranch (0.2-mile of stream on the south side of the river) and Audubon California's Sprague Ranch (2.5-mile of stream on the north side of the river) are excluded from the final designation.

#### Western Yellow-Billed Cuckoo

On October 3, 2013, USFWS formally proposed that the Western Distinct Population Segment of the yellow-billed cuckoo (*Coccyzus americanus*) be listed as a federally threatened species and protected under the ESA (USFWS 2013a). On October 3, 2014, the proposed rule became effective and finalized the USFWS determination for listing the western yellow-billed cuckoo but not its critical habitat (USFWS 2014). Yellow-billed cuckoos are recognized as state endangered in California.

USFWS announced a proposal to designate critical habitat for the western distinct population segment of the yellow-billed cuckoo under the ESA on August 5, 2014. The proposed critical habitat proximity to Isabella Lake is similar to that designated for the southwestern willow flycatcher. The public comment period for this proposed rule was reopened on November 12, 2014 and closed on January 12, 2015. Comments and information received from concerned Federal and State agencies, the scientific community, and other interested parties regarding the proposed critical habitat designation are currently under consideration by USFWS.

#### Valley Longhorn Elderberry Beetle

The USFWS announced a proposal to remove the Valley elderberry longhorn beetle (*Desmocerus californicus*) (VELB) from the federal list of endangered and threatened wildlife under the ESA on October 2, 2012. The public comment period for this proposed rule was reopened on January 23, 2013 and closed on February 22, 2013.

On September 17, 2014, the USFWS withdrew the proposed rule to remove the VELB from the federal list under the ESA. This withdrawal was based on the determination that the proposed rule did not fully analyze the best available information. This information indicated that the threats to the species and its habitat had not been reduced to the point where the species no longer meets the statutory definition of an endangered or threatened species. However, the information also indicated that the range of the VELB is now considered to be smaller than what was described in the proposed delisting rule. As such, the counties of Kern, King and Tulare are no longer considered within the range of the species, and projects proposed in those counties no longer need to consult with the USFWS for VELB conservation.

### **3.10.2 Existing Conditions**

Since release of the Final EIS, the affected environment has been updated with focus on the areas directly affected by the actions described in this document and relevant to the discussion of the affected environment. An updated list of special status species for this project area is included in Appendix D.

Several reconnaissance site visits were conducted by a Corps biologist from March through October 2014 on recreation and administrative site areas. Surveys were conducted by a USFS biologist for special status species (Appendix D), and no federally listed or other special status species were found during site investigation. Habitat was found to be primarily of non-native, and ruderal vegetation with no known suitable habitat for special status species in the immediate vicinity of the proposed relocation projects. No critical habitat or wetlands are found within the proposed project areas.

Surveys conducted on site by the USFS for a Biological Assessment of the KVC and the fire response station site (Appendix D), did not find special status plant or wildlife species, however, these surveys were conducted during dry months which may possibly have precluded discovery. Additional surveys during periods of precipitation and the spring season could be conducted for any potential special status moss or flowering vascular plant species to establish additional certainty or presence or absence of species.

### **3.10.3 Effects**

#### **Basis of Significance**

Effects on special status species would be considered significant if the proposed action would result in harm or “take” of listed species or their habitat; or if it affected a population of a

non-listed species to the point where it became listed or a candidate for listing, or resulted in loss of wetlands or other waters of the US that could not be mitigated.

### No Action

Under the No Action Alternative, there would be no Federal participation in remedial improvements to the Isabella main dam, spillway, or auxiliary dam. The Operating Restriction at elevation 2,589.26 NAVD88 (356,700 acre-feet) would become permanent. Initiated by the Corps in 2006, the Operating Restriction was intended as an emergency deviation from the Water Control Plan in order to lower the lake level to a safe elevation and capacity. It is possible that without dam safety modifications to reduce the risk of dam failure and life safety concerns, the Operating Restriction would further reduce the lake level. However, despite risk reduction measures, the Isabella Dams would still possess an unacceptably high risk of failure under the No Action Alternative. The potential environmental, economic, and human consequences of dam failure could be extremely high. Based on Corps studies, one or both dams have unacceptably high risk. The timing and nature of a potential dam failure cannot be specified, but the loss of one or both dams would likely flood areas between Isabella Lake and Bakersfield and beyond.

Under the No Action Alternative, there would be no substantial loss, degradation, or fragmentation of natural vegetation communities or wildlife habitat, nor would the No Action Alternative interfere with the movement of resident or migratory wildlife species beyond impacts of those associated with normal operations in the project area. However, if dam failure occurred, resulting flood waters could damage downstream habitats and remove sensitive status species.

### Proposed Action

The action area considered within this SEA is not within the immediate range of federally listed threatened or endangered species habitat. If any special status plant species are found during spring surveys, they would be avoided during construction. The USFS Administration and Recreation Facilities Relocation as proposed in this SEA is not expected to significantly affect special status plant species with incorporation of mitigation measures specified below.

Effects are not expected to special status species from the proposed project due to the expected absence of species and habitat. Incidental travel by special status species through the FS fire response station off Lake Isabella Blvd. has a very low risk for potential impacts due to the proposed VAWT. These risks are not expected to be significant to special status species with mitigation. Special status passerines are not expected to be within the vicinity of the turbines because habitat is not present for them at the site. The VAWT site at the proposed fire response

station does not provide attributes that would support populations or breeding habitats of special status species known elsewhere in the vicinity of Isabella Lake area. No tree roosting bats are known to be common to the project area, but two sensitive status species, the Pallid bat (*Antrozous pallidus*) and Townsend's big-eared bat (*Corynorhius townsendii townsendii*) could potentially pass through the area while foraging or migrating. Bald eagles and other raptors could potentially sit on the turbines to roost or perch for foraging, but this is considered unlikely due to movement of the turbine blades and lack of available roosting space. VAWTs are not expected to attract or affect sensitive status species due to the relatively small rotor size and installation over a small acreage not known to incur sensitive species use. Mortality to any special status species would be considered unusual and incidental resulting from travel during foraging or migration. However, due to limited studies on VAWTS, monitoring is recommended to document the little known impacts of VAWTs and potential effects on any species. Additional potential impacts from turbines and mitigations are discussed in the Vegetation and Wildlife Section 3.9.

#### **3.10.4 Mitigation**

Effects to special status species and MBTA species would be avoided or minimized by following the mitigations listed below.

- Follow General mitigations and Best Management Practices from the USFS Land-Based Wind Energy Guidelines (USFWS 2012), and California State Guidelines (2009) as applicable to the site.
- Produce a Bird and Bat Conservation Strategy (USFWS 2012) for the administrative and recreation relocation sites with emphasis on the MBTA and survey and management of the wind turbine site.
- Monitor the VAWT turbines for a minimum of 8 months during bat and bird migratory and breeding seasons. Conduct surveys to identify any bat foraging and movements within the vicinity of the fire station response site.
- Conduct additional spring surveys for mosses and sensitive plant species at the Isabella Lake Blvd site.
- Place bird deterrents upon the fifty-foot hose drying tower to prevent birds from perching on the structure near the VAWT, and remove tree and shrub vegetation in the vicinity of the VAWTs.

## 3.11 CULTURAL RESOURCES

### 3.11.1 Regulatory Setting

The Cultural Resources section of the Draft EIS (Section 3.14) sufficiently characterizes the regulatory setting for this resource. For further discussion of Traditional Cultural Properties, as well as the regulatory setting for compliance with the Archaeological Resources Protection Act and the Native American Graves Protection and Repatriation Act refer to pages 3-319 through 3-323 of the Draft EIS. An additional cultural resource inventory reference for the survey and evaluation of the USFS Lake Isabella Office and compound, Corps operation and maintenance facility, and other structures, may be found in Chapter 4 of the Final EIS.

### 3.11.2 Existing Condition

Record Search. The entire area discussed in this document has been subject to a record search at the Sequoia National Forest and Southern San Joaquin Valley Information Center. In addition, archaeological surveys of the entire area were performed between 2014 and 2015 by either Sequoia National Forest or Corps archaeologists. All historic age buildings have been evaluated for their eligibility for listing in the NRHP.

Known Cultural Resources. The following individual summaries compile current information regarding each of the cultural resources identified within the survey area. No Traditional Cultural Properties have been identified.

- **CA-KER-12** is a large prehistoric habitation site with multiple bedrock milling features. The site extends over an area of 60 x 250 meters and was originally recorded as having areas of dark soil, fire altered cobbles, and surface artifacts. The surface presence of the site has lessened over the years due to use of the area. The most recent recording of the site indicates that it contains up to 16 bedrock milling rock features with up to 120 bedrock mortars and milling slicks. Midden is not evident over most of the site, but a small concentration has been identified near a cluster of bedrock milling features. Obsidian artifacts were initially recorded on the surface, but it appears that flaked stone tools and manufacturing debris were never a major site constituent.
- **05-13-54-0700** consists of two separate granite rock milling features. The first feature is a large, exposed granite boulder with two incipient mortar cups and six milling slicks. The second is a single, small, low lying rock with a single milling slick. There are no other artifacts or evidence of midden soil—the only features



remaining at the site are these two rocks. The site is just below the high gross pool line of the Isabella Reservoir and appears to have been severely impacted by wave action. The site has been, and continues to be, impacted by recreational use of the exposed shoreline.

- **05-13-54-0701** consists of six granite rock outcrops and a number of separate milling features. The site has an estimated size of 98 feet north-south by 98 feet east-west. Recorded milling features include both conical and saucer shaped bedrock mortar holes, as well as several milling slicks. This appears to have been a major site prior to construction of the reservoir.

Site 05-13-54-701 is just above the reservoir high water line but has been severely damaged by road construction and recreational use on and adjacent to the site. In fact, sites 05-13-54-700 and 05-13-54-701 at one time may have belonged to a single site with all connecting cultural material removed by the construction/use of the adjacent travel ways, recreational use and reservoir wave action.

- **05-13-54-0920** was originally recorded as a isolated milling slick with no associated artifacts in 2014. Additional test excavation at this site conducted in October 2015 identified buried deposits at the site. Based on these preliminary measures the site does not appear to be eligible for listing in the National Register of Historic Places, however, investigations are ongoing.
- The **Kernville Work Center** currently consists of 18 buildings, structures, and features scattered over approximately 10.7 acres. The Work Center is located at the intersection of Kernville Road and Sierra Way (Forest Highway 99). Nine of the buildings fall into the period of significance and are of age to be treated as historic properties—the remainder are considered non-contributing to the historical significance of the property. Three buildings have been removed over the years.
- **CA-KER-418** was recorded in 1975 as a “small eroded pictograph on underside of single granite boulder”. An update in 1977 noted the presence of red pigment along the outer margin of the overhang. The field inventory conducted by Dillon in 1983 was unable to locate this site. He noted that campfire smoke may have blackened the panel or that the site may have eroded away. A Desert side-notched projectile point suggesting a Late Period date was noted on the Dillon site form in 1984.

The field inventory conducted by Basin Research Associates, Inc. in September 2009 appears to have located the site. The field team is fairly confident that the correct boulder, based on a review of the 1977 site records, was found. Traces of a possible red pigment pictograph (Munsell 10YR 4/6 red on granite) were observed; however the granite surface has eroded to the point where identification is not positive.

The Corps used DStretch, software which allows color values to be adjusted and pictographs to be highlighted and analyzed on photographs from the Basin Research recordation. While red traces are present on the image, no elements recognizable as pictographs common to the region could be identified. It appears that any remaining red coloration is due to natural staining on the rock.

- **CA-KER-1683** is a bedrock boulder with one grinding slick—as recorded in 1983. The slick dimensions are 28 cm X 20 cm. Dillon suggests that the site may be an outlier associated with KER-16 to the northeast. The field inventory conducted by Basin Research Associates, Inc. in August 2009 relocated the site. The site appears as described by Dillon and seems to be in the same condition today; no additional cultural material was observed.
- **CA-KER-1684** is a grouping of granite boulders that appear to be in a highly disturbed context, bisected by a road and ringed with out-of-context granite boulders; these boulders were likely brought to the site during the construction of the surrounding campsite. A field inventory conducted by Basin Research Associates, Inc. in September 2009 relocated the site and Features A, B, and C—Features D and E were not located. The site has been subjected to landscaping since the 1983 record was completed and many smaller boulders have apparently been moved or removed. The 1983 sketch map does not reflect the current conditions.

The site was relocated by USACE on 03/31/15. The USACE positively identified boulders A, C, and D relying on the maps, drawings, and photographs presented in Dillon. The USACE is uncertain if the boulder identified by them as B is the correct boulder or if the boulder has since been removed from the site; however, no other boulder matching the description and the location was present. A fifth boulder, that was mapped but not identified by letter or drawing by Dillon, was also located by the USACE. Only the latter boulder had any evidence of use wear, a small slick towards the southern end of the boulder.

Each boulder was photographed as part of the relocation effort. No artifacts or midden soil were noted near or between any of the boulders. Also, this area has been extensively disturbed by landscaping, recreational use, and construction of Highway 78.

- The **Edward M. Kern Historic Marker**, California Landmark Site No. 742 (P-15-007767) (CAL/OHP 1990:73), is located on the east side of the lake at the Old Isabella Road Recreation Area near Post Mile 44.8, approximately two miles north of Lake Isabella, CA. The plaque is in good condition.

Campsite of Edward M. Kern, approved June 17, 1960 as California Historic Landmark #742; narrative of listing “Campsite of Edward M. Kern—Name of

Historical Point—Fork of North Fork and South Fork of Kern River, Kern County, California. At this point, after coming westward over Walkers Pass, the Kern-Talbot division of the Fremont Expedition waited for some time expecting to contact Fremont, who had moved directly west from Walker Lake to the San Joaquin Valley. The fork is now deep under the waters of the Isabella Lake, a water control project”.

### Consultation

**State Historic Preservation Officer.** The Corps initiated consultation with the State Historic Preservation Officer (SHPO) concerning the eligibility and/or effects to resources within the areas covered under this EA on April 29, 2015. On July 24, 2015 the SHPO concurred with the Corps determination of that CA-KER-418, CA-KER-1683, CA-KER-1684 and the Edward M. Kern Historic Monument are not eligible for the national register. Additionally, they concurred that there would be no effect to either 05-13-54-0700 or 05-13-54-0701, both of which were assumed eligible. Finally, the SHPO did not concur with the Corps determination that the Kernville Work Center was not eligible based on the submitted information and the Corps is continuing consultation on this resources under the Programmatic Agreement for this project. Efforts to evaluate CA-Ker-12 and 05-13-54-0920 are ongoing and will continue as prescribed in the PA for the project.

**Native American Consultation.** Native American consultation for this project is ongoing, both through a series of ongoing meetings, and through written communication. Tribes with interest in the area, including Tule River Indian Reservation, Santa Rosa Rancheria-Tachi Yokuts, Bishop Paiute Tribe, Tejon Indian Tribe, Tubatulabal, Kern Valley Indian Community, and Kawaiisu Tribe were provided with information concerning the sites located within the areas covered by this EA, both in a letter dated April 29, 2015 and via the Sequoia National Forest Tribal Forums held quarterly. No comments or requests for additional information have been received.

### Assessment Methods

Analysis of the potential impacts was based on evaluation of changes to historic properties within the study area that may result from implementation of the project. The term “historic property” refers to any cultural resource that has been found eligible for listing, or is listed, in the NRHP. Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA), outlines the process in which Federal agencies are required to determine the effects of their undertakings on historic properties. In making a determination of the effects to historic properties, consideration was given to:

- Specific changes in the characteristics of historic properties in the study area.

- The temporary or permanent nature of changes to historic properties and the visual study area around the historic properties.
- The existing integrity considerations of historic properties in the study area and how the integrity was related to the specific criterion that makes a historic property eligible for listing in the NRHP.

### **3.11.3 Effects**

#### Basis of Significance

Any adverse effects on cultural resources that are listed or eligible for listing in the NRHP (i.e., historic properties) are considered to be significant. Effects are considered to be adverse if they:

- Alter, directly or indirectly, any of the characteristics of a cultural resource that qualify that resource for the NRHP so that the integrity of the resource's location, design, setting, materials, workmanship, feeling, or association is diminished.

#### No Action

This alternative would have no effect on existing cultural resources in the project area because current conditions would remain unaltered.

#### Proposed Action

Effects to cultural resources would be from four types of construction related actions: (1) effects to the integrity of the visual and physical setting of historic properties; (2) effects to the structural integrity of historic buildings and structures from demolition; (3) effects from earth moving activities; and (4) effects from clearing, grubbing, and follow-on planting. Any cultural resources found during construction would be evaluated and consulted on as stipulated in the Programmatic Agreement.

- Regarding site CA-KER-12, the site has unknown integrity and is currently being evaluated. Additional actions concerning this site will be consulted on with the SHPO and Native American Tribes as proscribed in the PA and may include avoidance, monitoring, data recovery, or a combination of these actions.
- Regarding site 05-13-54-0700, the hard rock milling features are in good condition while the associated soils appear to have been removed by wave action from the reservoir. This site

will be avoided by the project and the Corps has determined and SHPO concurred that the current project will have no effect on this site.

- Regarding site 05-13-54-0701, there is a potential for subsurface deposits although no associated artifacts are apparent. This site will be avoided by the project and the Corps has determined and SHPO concurred that the current project will have no effect on this site.
- Regarding site 05-13-54-0920, there are known subsurface deposits and evaluation of this site is ongoing. Additional actions concerning this site will be consulted on with the SHPO and Native American Tribes as prescribed in the PA and may include avoidance, monitoring, data recovery, or a combination of these actions.
- Regarding the Kernville Work Center site, although it is a unique facility it, the Corps has determined that it lacks the combination of historical significance and integrity necessary to be eligible for listing in National Register of Historic Places (National Register). The proposed demolition of components of the facility (e.g. The 1013 building) and construction of new offices and warehouses would therefore not affect historic properties as defined under 36 CFR 800.16.
- Regarding site CA-KER-418, there is considerable erosion to the surface present; the Corps has determined and SHPO concurred that it is not eligible for listing in the National Register.
- Regarding site CA-KER-1683, the Corps has determined and SHPO concurred that it is not eligible for the National Register under any of the criteria.
- Regarding site CA-KER-1684, the current condition of the site has been recorded and only one slick was identified. The Corps determined and SHPO concurred that the resource is not eligible listing in the National Register due to four of the five features not exhibiting cultural use, a lack of associated artifacts, and a loss of integrity from damage caused by landscaping, recreational use and construction of the adjacent highway.
- Regarding the Edward M. Kern Historic Marker site, the Corps has determined and the SHPO concurred that it is not eligible for listing in the National Register.

#### **3.11.4 Mitigation**

The Corps will prepare a Historic Property Treatment Plan to guide efforts to include procedures to avoid or mitigate effects to historic properties (those assumed to be eligible properties as outlined below) during construction, in compliance with Stipulation VIII of the PA (Corps 2012).

- CA-KER-12 and 05-13-54-0920 will be evaluated and if eligible will be subject to mitigation actions pursuant to the PA. Monitoring of project actions within or adjacent to these sites will be monitored during all construction actions.
- Both 05-13-54-0700 and 05-13-54-0701 will be avoided and there will be no effect to either resource.
- Although not eligible, the Edward M. Kern Historic Monument will be avoided by project activities.

These mitigation measures will reduce effects to historic properties to less than significant.

Should construction plans change, the Corps will reopen consultation with the SHPO and Native American Tribes as stipulated in the PA.

## CHAPTER 4.0 CUMULATIVE AND GROWTH-INDUCING EFFECTS

The NEPA regulations require an EA to discuss project effects that, when combined with the effects of other projects, result in significant cumulative effects. The NEPA regulations define a cumulative effect as:

*“The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonable foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor or collectively significant actions taken over a period of time”* (40 CFR 1508.7).

NEPA requires an environmental evaluation to discuss cumulative projects effects. The effects of the proposed Phase II Real Estate Acquisition and Relocation action would result in minor net cumulative effects for some resources. Resources such as wildlife habitat would be affected somewhat during construction, but should recover to comparable levels over the long term as a result of mitigation measures.

The proposed activities would likely have no adverse cumulative effects on geology, soils and seismicity, socioeconomics, recreation, aesthetics, cultural resources, or special-status species. There would be short term cumulative effects on traffic and air quality. The amounts of traffic and emissions would increase due to the operation of construction, and mitigation measures would be implemented to reduce the effects.

Additional information on cumulative effects is included in the Isabella Lake DSM Project EIS (Corps 2012a, Corps 2012b). Mitigation of significant cumulative effects could be accomplished by rescheduling actions of proposed projects and adopting different technologies to meet compliance. Significance of cumulative effects is determined by meeting Federal mandates and specified criteria identified in this document for affected resources.

### 4.1 LOCAL PROJECTS

This section briefly considers other major local, State and Federal projects near the project area for which evaluation is required. In addition, mitigation or compensation measures must be developed to avoid or reduce any adverse effects to less-than- significant based on Federal and local agency criteria. Those effects that cannot be avoided or reduced to less-than-significant are more likely to contribute to cumulative effects in the area. The exact construction timing and sequencing of these projects are not yet determined or may depend on uncertain funding sources.

Isabella Lake DSM Project. The Isabella Lake DSM Project is a federal action approved to remediate significant seismic, seepage, and hydrologic dam safety concerns at the Isabella Lake Main and Auxiliary Dams. The planned features of the Isabella Lake DSM Project are listed below:

- *Phase I Relocations.* Summer 2014 to summer 2017. Preparation for the Phase II dams and spillways and Phase III Borel Canal realignment. Major work includes acquisition of affected private lands, relocation of affected residents, relocation of the USFS Lake Isabella Office, fire station, and Corps OM Facility, replacing affected recreation facilities, and vegetation mitigation activities.
- *Phase II Dams and Spillways.* Spring 2017 to summer 2020. Major work includes staging area setup, haul route construction, emergency spillway preparation, auxiliary dam foundation preparation, auxiliary dam embankment and buttress construction, existing spillway wall extension, emergency spillway labyrinth construction, emergency spillway apron and excavation, main dam excavation, auxiliary dam buttress construction, and main dam foundation and buttress construction.
- *Phase III Borel Canal.* Fall 2019 to fall 2022. Major work includes the Borel Canal upstream coffer dam and tunnel construction, upstream portal construction, Borel Canal control tower removal, concrete canal lining installation, Borel Canal access roads construction, Borel Canal coffer dam removal, and material disposal on Engineers Point.
- *Demobilization and Site Restoration.* Spring 2022 to fall 2022.
- *Return to Routine and Long Term Operations at Isabella Dams.* Spring 2023.

#### **4.1.1 Additional Projected Cumulative Actions**

USFS Motorized Travel Management EIS (USFS October 2009);

USFS Giant Sequoia Monument Management Plan EIS (USFS August 2010);

Kern River Valley Specific Plan (Kern County July 2011);

Kern River Preserve (ongoing);

Borel Hydroelectric Project (ongoing);



Isabella Partners Hydroelectric Project (ongoing);

Bakersfield Resource Management Plan (ongoing);

Weldon Ranch Solar Project (ongoing) and;

Weldon (Foresight) Solar Projects.

The actions on the above list were assessed as to their relevance for inclusion in this cumulative impact analysis based on their geographic area of influence, proximity to Isabella Lake, and time frame as a viable action and/or planning period involved. Detailed descriptions of these projects can be found in Section 4.3 of the Isabella Lake DSM Project Draft EIS.

## **4.2 ANALYSIS OF POTENTIAL CUMULATIVE EFFECTS**

### **4.2.1 Noise**

Projects with the potential to cause additional noise effects in the project vicinity include various portions of the Isabella Lake DSM Project, the Borel Hydroelectric Project and the Isabella Partners Hydroelectric Project. The proposed project would not produce significant noise impacts in the project vicinity and would take place during daytime hours commensurate with County thresholds. Cumulative noise impacts are not expected at sensitive receptors, such as residences on Huff Road and vicinity, due to the distance from the DSM project. Similar construction activities include: earthwork, concrete work, and truck hauling operations. Noise impacts may disturb recreational visitors seeking solitude and quiet in recreation experiences, but these noise impacts would not be permanent and such objectives are usually sought at other recreation areas around the lake that do not carry such high visitor use.

DSM project noise levels in conjunction with construction noise created as part of the relocation project would remain within County thresholds during daytime hours and would not be significant. The Isabella Lake DSM Project activities have mitigation measures to minimize noise impacts and are anticipated to reduce the impacts to a less than significant level. Other cumulative projects would occur outside the project area and these projects would be responsible for minimizing their own noise levels. Noise generated from the proposed project would be temporary and short term, and would occur during daytime hours. The proposed project is not expected to contribute to a significant cumulative noise impact.

### **4.2.2 Traffic**

The proposed administrative and recreation relocation actions would likely overlap with portions of the Isabella Lake DSM Project Phase I Relocation activities, which would provide the greatest contribution of traffic to the area. Traffic levels from the relocation construction actions would not be substantial. Traffic increases would result primarily from low to moderate levels of contractor employee transport and the hauling of equipment and material to and from the proposed project sites. The proposed construction activities would temporarily increase traffic levels on some local and regional roadways. Since traffic levels of service (LOS) as identified in the EIS can accommodate substantial increases in amounts of cumulative traffic without changing LOS levels or causing safety issues, significant impacts are not expected. Additionally, due to the dispersed and short term nature of the project, significant contributions are not expected to cumulative traffic in the project vicinity.

### **4.2.3 Air Quality**

There is the potential for accumulation of air pollutants with overlap of activities during the proposed project and the Isabella Lake DSM Project Phase I relocations. Also, the proposed future construction-related activities would result in a direct effect on air quality from project-generated criteria air pollutant (PM<sub>10</sub>) and precursor emissions (ROG and NO<sub>x</sub>) from heavy-duty truck travel on proposed haul routes; and from heavy-duty construction equipment at the proposed dam construction, staging, and excavation sites. However, projected emissions from the relocation efforts are relatively small in quantity. Indirect effects are not expected from construction activities. Recent elimination of the project to realign State and County highways and roads originally scheduled during the proposed project timeframe has effectively reduced the overall mitigated construction emissions of NO<sub>x</sub> to less- than-significant. All other years of air quality pollutant emissions were also projected to remain below the significant thresholds.

### **4.2.4 Recreation**

The Draft EIS (Section 3.12.3) details the potential impacts of the Isabella Lake DSM Project on recreation. These recreation impacts were identified to be significant and the proposed actions of this SEA are the mitigation actions which would reduce the DSM project actions to less-than-significant. Short-term, direct and indirect recreation impacts could occur when both the DSM project and the relocation projects are in simultaneous construction mode producing detracting noise and visuals to those visitors seeking recreational solitude. However, the relocation construction actions are short-term, there are other recreational areas that can be utilized within the immediate area, and relocation construction would be conducted on weekdays primarily through the winter months. Cumulative impacts upon recreation would not be significant as the mitigation measures within this SEA sufficiently compensate to provide

additional in-kind recreation experiences and facilities. Additional in-kind acreage which is available for camping and shoreline activities would be provided in addition to launch facilities, restroom structures, parking lots, paved access and landscaping. Relocation construction would provide upgrades in visitor services and recreational structures such as restrooms, access roads, and parking lots. New visitor centers off Isabella Lake Blvd. and Kernville Rd. would provide a benefit of increased direct access to recreation information. Any overlap of other activities listed above are not expected to further compromise recreation around the project area, and no significant effects are expected cumulatively.

### **4.3 GROWTH-INDUCING EFFECTS**

The proposed action would not directly induce growth in or near the project area. New development must be consistent with existing Kern County general plan policies and zoning ordinances regarding land use, open space, conservation, flood protection, and public health and safety. Local population growth and development would be consistent with the Land Use Element of the Kern River Valley Specific Plan. Construction activities associated with the proposed action would not result in a substantial increase in the number of permanent workers or employees or a need for additional permanent housing and local services.

## CHAPTER 5.0 COMPLIANCE WITH ENVIRONMENTAL LAWS AND REGULATIONS

This chapter addressed Federal statutes, implementing regulations, and Executive Orders potentially applicable to the proposed USFS Administration and Recreation Facilities Relocation Project. Additional description on environmental laws and regulations is found in the 2012 Draft EIS.

### 5.1 FEDERAL LAWS AND REGULATIONS

#### Federal Laws

**Clean Air Act, as amended and recodified (42 U.S.C. 7401 et seq.)** *Compliance.* The primary objective of the Clean Air Act is to establish Federal standards for various pollutants from both stationary and mobile sources and to provide for the regulation of polluting emissions via state implementation plans. The project is not expected to exceed or contribute towards the exceedance of any Federal or State thresholds for emissions. As a result, the project would remain in compliance with Federal air quality standards and would not hinder the attainment of air quality objectives in the local air basin.

**Clean Water Act (33 U.S.C. 1251 et seq.)** *Compliance.* The Clean Water Act establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. Though construction would not be conducted in water, a Section 404(b) assessment or a section 401 water quality certification application is required because the project would involve the placement of fill below the high water line in jurisdictional waters of the United States. Because the project would result in more than one acre of construction-related land disturbance, the Contractor would be required to pursue a General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit, 99-08-DWQ).

**Endangered Species Act (16 U.S.C. 1531 et seq.)** *Compliance.* There are known special-status species that incidentally occur in or near the proposed action area. No federal endangered or threatened species are currently known in the area and project actions are not expected to affect these species. No proposed or designated critical habitat exists in or near the proposed action area. No protected or candidate species are expected to be affected by the implementation of the proposed action.

**Fish and Wildlife Coordination Act (16 U.S.C. 661, et seq.)** *Compliance.* This act requires Federal agencies to consult with the USFWS and the California Department of Fish and Wildlife before undertaking projects that control or modify surface water. Consultation was not

required for the proposed action, as no modification to surface waters would occur as a result of the proposed action.

**Farmland Protection Policy Act (7 U.S.C. 4201 et seq.)** *Compliance.* This Act requires a Federal agency to consider the effects of its actions and programs on the Nation's farmlands. The proposed action will not result in any effects on any areas of potential prime or statewide important farmland.

**Migratory Bird Treaty Act, as amended (16 U.S.C 703 et seq.)** *Partial Compliance.* The Migratory Bird Treaty Act implements various treaties and conventions between the United States, Canada, Japan, Mexico, and Russia, providing protection for migratory birds as defined in 16 U.S.C. 715j. The construction could temporarily disturb existing habitat in the project action area for migratory birds, however, mitigation measures would minimize or negate these effects. The implementations of the proposed action would have no significant effect on this habitat. Additional assessment is required to document impacts of vertical-axis wind turbines on birds and bats to assure long-term compliance with the provisions of the Act.

**National Environmental Policy Act (42 U.S.C 4321 et seq.)** *Partial Compliance.* Public comments received during the public review period will be included and incorporated into the Final SEA. The submittal of the Final SEA and the signed FONSI would complete the NEPA process and fully comply with this Act.

**National Historic Preservation Act of 1966, as amended (16 U.S.C. 470 et seq.).** *Partial Compliance.* *National Historic Preservation Act of 1966, as amended (16 U.S.C. 470 et seq.).* Section 106 of the NRHP requires a Federal agency to consider the effects of Federal undertakings on historic properties, i.e., cultural resources that are listed in, or are eligible for listing in, the National Register of Historic Places. The implementing regulation for Section 106 is 36 CFR Part 800 (revised 2004), "Protection of Historic Properties," which requires Federal agencies to initiate Section 106 consultation with the California SHPO. The Corps is consulting under a Programmatic Agreement with the SHPO for this project. The SHPO concurred with the Corps findings concerning all resources except the eligibility of the Kernville Work Center on July 24, 2015, which the Corps is still consulting on. Any additional communication regarding historic and archaeological resources will be included in the Final SEA.

### Executive Orders

#### ***Executive Order 11990, Protection of Wetlands***

This order directs the Corps to provide leadership and take action to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands in implementing Civil Works projects. Construction of the proposed project would not adversely affect any wetlands in the reservoir area.

**Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations.** *Compliance.* The order directs all Federal agencies to identify and address adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations. There are no effects on minority or low-income populations.

## **5.2 COORDINATION AND REVIEW OF THE SEA**

The Draft SEA will be circulated for 30 calendar days to interested Federal, State, and local agencies, organizations, and the public. All comments received in the 30 day period will be considered and incorporated into the Final SEA as appropriate.

## **5.3 FINDINGS**

Based on information in this SEA, this proposed action is not expected to result in significant adverse effects on the environmental resources in or in the vicinity of the action area. Following the public review period, a determination will be made whether a FONSI is warranted or whether preparation of an EIS is necessary.

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## **PERSONAL CONTACTS**

Odgers, Tom. 06 October 2015. Project Manager, Golden Gate National Parks Conservancy. Personal communication regarding VAWT wildlife study.

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## **APPENDIX A – Draft Recreation Report**

# Isabella Lake Dam Safety Modification Project

Isabella Lake, Kern County, California

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## DRAFT Recreation Report

February 27, 2014

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**US Army Corps  
of Engineers**®  
Sacramento District

Prepared by the  
U.S. Army Corps of Engineers  
Sacramento District  
In coordination with the  
U.S. Department of Agriculture,  
Sequoia National Forest,  
Kern River Ranger District



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## **1.0 INTRODUCTION**

The Isabella Lake Dam Safety Modification (Isabella Lake DSM) Project Draft Recreation Report (Report) is being prepared by the U.S. Army Corps of Engineers (Corps), in coordination with the U.S. Forest Service (USFS) Sequoia National Forest, and in consultation with local, State and Federal agencies, stakeholders and the public. In accordance with 33 C.F.R. §230.13(d), this Report contains supplemental information on the recreation impacts discussed in the Isabella Lake DSM Project Environmental Impact Statement (EIS) and will not be officially filed with the Environmental Protection Agency (EPA). The purpose of the Report is to further explore and identify options that could be applied to offset adverse effects on recreation resulting from construction of the Isabella Lake DSM Project. Currently, the Corps is working with the USFS to resolve questions regarding implementation authority.

The Isabella Lake DSM Project draft and final EISs, which were released in March 2012 and October of 2012 respectively, describe the impacts to the recreation facilities around Isabella Lake. Based on the findings in the final EIS, it is anticipated that the visitor experience will be substantially diminished at certain areas near the lake during construction of the Isabella Lake DSM Project if no mitigation measures are implemented to offset recreation impacts. Furthermore, it is anticipated that the safety of visitors could be jeopardized by a failure to mitigate for closures. Increased visitation in the areas adjacent to the closed recreational facilities would likely encounter visitor use conflict, increased vandalism, overcrowding of bathroom and parking facilities, traffic congestion and circulation issues and other health and safety issues. The Report discusses areas that will be directly impacted from either a temporary or permanent closure due to the construction of the Isabella Lake DSM Project, or indirectly impacted by increased use as a result of the closures.

The development of this Report was a commitment in the Isabella Lake DSM Project Record of Decision (ROD) signed December 2012. The purpose of the Report, as described in the ROD, is to “identify options for mitigation to offset adverse effects on recreation resulting from construction of the Isabella Lake DSM Project.” The Report will not recommend any specific alternative to offset impacts; rather, it will be used as a scoping tool to collect input for the forthcoming Isabella Lake DSM Project Recreation Environmental Assessment (EA) scheduled for public release in late 2014. The purpose of the scoping process is to help the agency determine the scope of the Recreation EA and to ensure that problems or issues are identified early.

In compliance with the National Environmental Policy Act (NEPA), the draft Recreation EA will be a concise document that supplements the EIS analysis of potential environmental effects of the Isabella Lake DSM Project on recreation. It will present a final array of mitigation alternatives for public review and comment. Once the authority issues are resolved, the

## Isabella Lake DSM Project – DRAFT Recreation Report

Recreation EA will be finalized with a decision resulting in a Finding of No Significant Impact (FONSI) or whether additional analysis is necessary.

Additional information may be obtained by contacting the Sacramento District Public Affairs office at (916) 557-5100.

### **1.1 Background of Isabella Lake DSM Project**

In 2005, the Corps determined through a screening-level risk assessment process that the Isabella Dams posed an unacceptable level of flood risk from failure of the dam(s). The Isabella Lake DSM Study was completed in December 2012. It recommended a plan to reduce the probability of dam failure associated with hydrologic, seismic and seepage issues and its associated consequences. The features of the approved plan presented in the Isabella Lake DSM Report and EIS are summarized as follows:

- A full height filter and drain (with an approximately 16-foot crest raise);
- Improvements to the existing spillway;
- A new emergency spillway;
- An 80-foot downstream buttress at the Auxiliary Dam with an approximately 16-foot crest raise; and
- Shallow foundation treatment at the downstream toe of Auxiliary Dam.

In addition, the approved project includes realignment of the Borel Canal conduit through the right abutment of Auxiliary Dam, relocations of California State Route 178 and Lake Isabella Blvd, and a gate closure structure along California State Route 155 to accommodate the 16-foot crest raise. An illustration of the Project features is presented in Figure 1.






# ISABELLA DAM SAFETY MODIFICATION PROJECT

## Current Features

- 1 - Main Dam
- 2 - Existing Spillway
- 3 - Auxiliary Dam
- 4 - Borel Canal
- 5 - Highway 178
- 6 - Highway 155

## Project Features & Sites

- Potential Staging Areas**
- Dam Modifications**
- Emergency Spillway**
- Highway Relocations**
- Borel Canal Relocations**

-  Unaffected Campground
-  Affected Campground
-  Affected Boat Launch

Highway Relocation (Approx. 1 mile)  
OR installation of flood gate (with no relocation)

## Project Benefits

- Improve public safety
- Reduce flood risk from dam failure to downstream communities
- Increase stability and reduce risk from seismic event or fault rupture
- Minimize potential of dam overtopping with crest raise and emergency spillway
- Filtering and drainage system to safely control seepage
- Extend infrastructure lifespan
- Remove current pool restriction (implemented in 2006)

Highway Relocation (Less than 1 mile)



Scanning the barcode above will connect you to our project website.

Free QR barcode readers can easily be downloaded to your mobile device. Search on the internet for "free QR code readers."

Current as of October 2013



Figure 1 – Isabella Lake DSM Project illustration, dated Oct 2013

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## **1.2 Isabella Lake DSM Project Authorization**

The initial study for the Isabella project on the Kern River was authorized by the Flood Control Act of 1936, Public Law (Pub. L.) No. 74-738, § 6, 49 Stat. 1579 (1936). This study provided a preliminary examination and survey of the Sacramento and San Joaquin Valleys. Separate studies were done on various sub-basins in the two watersheds. Construction of Isabella Dam and Lake was proposed in a Chief of Engineers Report in House Document 513, January 26, 1944.

The original construction of Isabella Lake Reservoir and Dams was authorized under the Flood Control Act of 1944, Pub. L. 78-534, § 10, 58 Stat. 887, 901 (1944). That authority reads:

*The project for the Isabella Reservoir on the Kern River for flood control and other purposes in the San Joaquin Valley, California, is hereby authorized substantially in accordance with the recommendations of the Chief of Engineers in his report dated January 26, 1944, contained in House Document Numbered 513, Seventy-eighth Congress, second session, at an estimated cost of \$6,800,000. (58 Stat. 901)*

Section 4 of the Flood Control Act of 1944 (16 USC 460d) authorizes the Chief of Engineers to construct, maintain, and operate public parks and recreational facilities in reservoirs under the control of the War Department, and to permit the construction, maintenance, and operation of such facilities.

Recreation was authorized under the Federal Water Project Recreation Act of 1965, Pub. L. 89-72, 79 Stat. 213, 214, 16 USC 460l-12 et seq., as amended by the Water Resources Development Act of 1974, Pub. L. 102-575, Title XXVIII, 106 Stat. 4690, 16 United States Code (USC) 460l-31 – 460l-34. In part, 16 USC §460l -12 reads:

*It is the policy of Congress and the intent of this Act that in investigating and planning any Federal navigation, flood control, reclamation, hydroelectric, or multipurpose water resource project that consideration shall be given to the opportunities, if any, which the project affords for outdoor recreation and for fish and wildlife enhancement...*

The Isabella Lake DSM Report was approved on December 18, 2012 without needing additional Congressional authorization, because the proposed modifications remained within the Chief of Engineers' discretionary authority to operate and maintain the dam. The proposed dam safety modifications ensure the project will continue to operate and provide the same purposes as congressionally-authorized in 1944.

## **1.3 Comments and Responses from Isabella Lake DSM Project Draft and Final EIS**

Since becoming aware of the dam safety concern, the Corps continues to engage and inform the public of the Project, and of the potential impacts that it might have on recreation resources. The Corps engaged the public through the NEPA public engagement process of collecting and addressing comments on the Isabella Lake DSM Study draft and final EIS.

During the draft EIS public review period, a total of 435 comments were received from the public and agencies. Comments were received from 145 different parties, including 3 Federal agencies, 1 State of California agency, 12 local agencies and organizations, and 129 private citizens. Although the public was engaged on a variety of issues, by a large margin the most important issue identified by the public was concern about periods of lake lowering during construction and their impact on recreation, the local economy, water quality, and air quality. See the final EIS, Chapter 6 (Public and Agency Review of draft EIS) for an overview of the public and agency review, the issues identified during the public comment period, and the Corps responses to those recurring comments that were of concern to many commentators. Appendix A of the final EIS presents a table that summarizes all comments received.

#### **1.4 Agency Coordination and Public Involvement in Mitigation Measures**

The Corps and the USFS have coordinated throughout the study phase of the Isabella Lake DSM Project and continue to coordinate during the pre-construction engineering and design (PED) phase to provide an accurate description of effects and include potential mitigation measures. Coordination includes conference calls, site visits, and communication through e-mail.

A survey of recreation visitors was conducted by the Corps (contracted to Gulf South Research Corporation) during the 2013 recreation season that aimed to capture the perspective of the visitors from outside of the Kern River Valley. The survey indicated the location of lake access, the type of recreation use, the concerns of visitors, and suggestions for possible mitigation measures to address project effects. Information gathered on the type and volume of visitor use contributes to a more complete understanding of the impacts to recreation resources at Isabella Lake and the Kern River Valley, and to the potential measures that could be implemented to mitigate those impacts.

Two public information gathering meetings were held by the Corps and the USFS on September 25 and 26, 2013 to discuss the potential impacts of the project with local residents. During these meetings, the public, particularly the residents of the Kern River Valley, were encouraged to provide input using the same survey questions as the visitor use survey. In addition, comment cards were provided and communication with the public and the Kern River Valley recreation stakeholders is ongoing through the development of this Report.

Future public meetings and continued stakeholder engagement are planned for fall 2014 when the Draft Recreation EA is released.

## **2.0 Purpose and Need**

The purpose of the Report, as described in the ROD, is to “identify options for mitigation to offset adverse effects on recreation resulting from construction of the Isabella Lake DSM Project.” The options (a.k.a. measures or alternatives) described in this Report will be assessed in the Recreation EA if determined a Federal action will be implemented. The ROD is included as Appendix A of this Report.

## **3.0 Isabella Lake Recreation Overview**

### **3.1 Facility Management and Authority**

The Corps operates the dams for the primary authorized purpose of flood risk management (flood control). Recreation is not an authorized purpose for the dams, but is considered a beneficial use of the project. The Corps’ management of Isabella Lake is limited to the dams (Auxiliary Dam and Main Dam) and spillways, their associated outlet works, and the immediate adjacent lands.

Management of the recreation facilities at the lake was transferred from the Corps to USFS in 1991. USFS retains title to the facilities and surrounding lands. USFS is also responsible for security, management, operation, and maintenance of recreation facilities surrounding Isabella Lake and the lake itself.

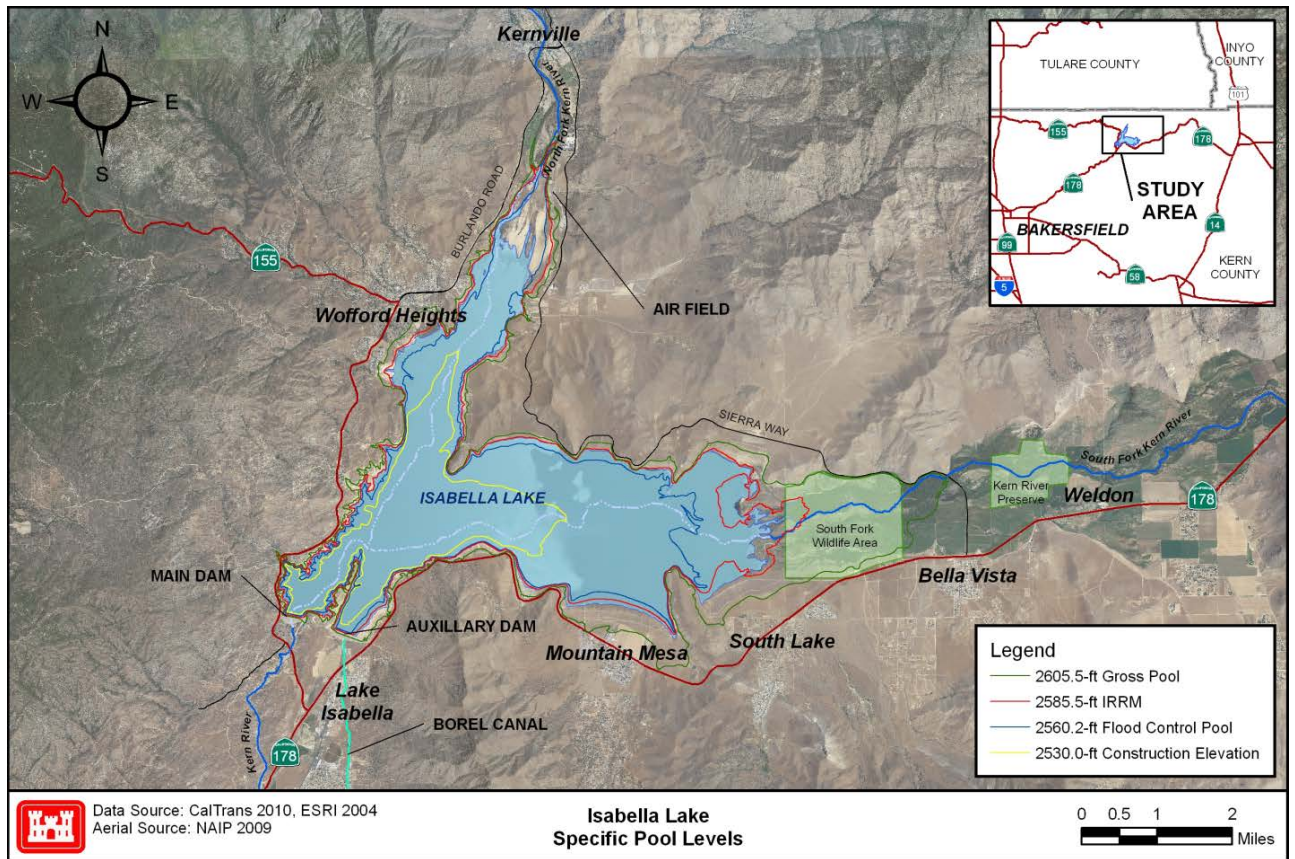
The Bureau of Land Management (BLM) Bakersfield Office manages the Keyesville South and Slippery Rock boat launch on the lower Kern River below the Main Dam. Kern County Parks and Recreation (County) patrols the lake. Their offices are located at French Gulch Campground. The County uses Launch 19 on a regular basis for ingress and egress. The California Department of Fish and Wildlife stocks fish in the lake. CalTrans is responsible for maintenance of State Route 155 and State Route 178.

### **3.2 Project Area Description**

The Kern River Valley is surrounded by mountains that reach an elevation of approximately 7,000 feet, bounded by low rolling hills of the Greenhorn Mountains to the west and southwest, the Tehachapi Mountains to the south, high alpine mountains of the Sierra

## Isabella Lake DSM Project – DRAFT Recreation Report

Nevada to the north, and El Paso Mountains to the east. The valley is considered a gateway to the Giant Sequoia National Monument, the Sequoia National Forest, and other nearby public lands. In 1987, the following were designated as Wild and Scenic River Segments; segments of the North Fork Kern River, from the Tulare-Kern County line to its headwaters in Sequoia National Park, and the South Fork Kern River from its headwaters in the Inyo National Forest to the southern boundary of the Domeland Wilderness in the Sequoia National Forest. Downstream of the Isabella Dams, the Kern River flows through the Kern River Gorge and the Kern River Valley, into the San Joaquin Valley. From the mouth of the canyon, the Kern River flows 85 miles to its terminus at the Tulare Lakebed.



**Figure 2: Isabella Lake area map with pool levels**

Isabella Lake consists of a Main Dam on the Kern River and an Auxiliary Dam directly to the east in the adjacent Hot Springs Valley. The construction of the Isabella Lake dams began in March 1948; the dams were placed in full operation in February 1953. The major physical features of the Isabella Lake DSM Project include embankments, outlet works, a small hydroelectric plant, a spillway, and the Borel Canal.



A private hydroelectric plant, owned and operated by Isabella Partners, is located on the downstream toe of the Main Dam. The Borel Canal passes through the Auxiliary Dam and supplies water directly to another hydroelectric plant operated by Southern California Edison on the Kern River, six miles south of the Auxiliary Dam.

The Isabella Lake dams provide flood risk management (flood control), water conservation (irrigation), and other benefits to the residents and business owners of the town of Lake Isabella, Kern River Valley, and Bakersfield (see Figure 2 map). Water stored in Isabella Lake is used for irrigation and to recharge the groundwater basin. An exception to this can be found in years with exceptionally large runoff, when the Tulare Lake basin is threatened with flooding. During those years, all or a portion of the runoff is diverted to the California Aqueduct via the Kern River-California Aqueduct Intertie.

### **3.3 Recreation Use and Management on Isabella Lake and the Kern River**

#### **3.3.1 Historic Recreation Use**

Isabella Lake became fully operational in 1953. Although recreation is not a Federally-authorized purpose, it is acknowledged as a benefit as evidenced in the *Preliminary Report on Recreation Potentialities* created by the National Park Service in 1946, at the request of the Corps' Sacramento District Engineer.

The *Agreement for Establishment and Maintenance of a Minimum Recreation Pool of 30,000 Acre-Feet in Isabella Lake*, dated November 8, 1963 was signed by the local water users. Under this agreement, 30,000 acre-feet is designated for recreation. The release of the 30,000 acre-feet is made only if required for flood reduction or by mutual agreement of the water rights holders. This agreement was incorporated and made a part of the 1964 Contract between the United States government and the downstream water districts.

In May 1991, through an interchange of lands agreement, the USFS assumed management responsibilities of operation and maintenance of all recreational resources and facilities at Isabella Lake.

#### **3.3.2 Current Recreation Use**

Recreation at Isabella Lake and vicinity includes a variety of water and land-based activities, including: picnicking, camping, lake boating and whitewater boating, swimming, fishing, hiking, off-road motorcycling, hunting, sightseeing, mountain biking, road cycling, wind

surfing and horseback riding. Most water-oriented visitor use originates at permanent or portable facilities developed along the western shore of the North Fork area and the southern shore of the South Fork area, where the water surface is relatively accessible at all lake stages due to the ability of the marine docks to move and adjust to the lake level.

Twenty-six developed sites in the immediate vicinity of the Isabella Lake DSM Project are available for recreation. They are operated and maintained by the USFS, BLM, Kern County Parks and Recreation, the California Department of Boating and Waterways, and the California Wildlife Conservation Board. These areas provide opportunities for picnicking, camping, boating, swimming, hiking, cycling, and horseback riding.

The USFS-managed facilities in the area include the following developed day use recreation sites on the Lower Kern River: Live Oak, Lower Rich Bar, Upper Rich Bar, Miracle; at Lake Isabella: Launch 19, Old Isabella Boat Launch, South Fork Boat Launch, and Camp 9; and the following developed overnight recreation sites at Lake Isabella: Auxiliary Dam, Old Isabella, South Fork, and Camp 9. Additionally, several designated dispersed camping areas offer undeveloped camping opportunities at Isabella Lake and on the Upper Kern River, north of Isabella Lake.

Other private operators providing recreation services in the immediate area include three private marina operators at Isabella Lake and four outfitter guides that operate on the Lower Kern River below the dams. Outfitters also provide kayak lessons on Isabella Lake. All private operators conduct services under Special Use Permits with the Sequoia National Forest.

Most visitors are from Southern California. According to the 2013 recreation survey and data collection effort, 95 percent of the 308 respondents interviewed were from zip codes in the southern California region, mostly from Los Angeles or Bakersfield (only 15 percent of the 95 percent were from within the Kern River Valley areas). The remaining five percent of visitors interviewed were either from Northern California or from outside of the state.

#### **4.0 Affected Recreation Environment**

This section illustrates and briefly describes the recreation facilities and resources that will be affected during and/or after the period of construction. The period of construction is anticipated to occur from 2017 to 2022. During this time, recreation facilities in the Isabella Lake DSM Project area will be closed. Some facilities will be reopened after construction is complete and others will remain permanently closed (see Section 5 for details). Figure 3 shows the current design features of the Isabella Lake DSM Project and impacted areas in the vicinity of the action area. Figure 4 shows the current Isabella Lake DSM Project construction schedule.

## Isabella Lake DSM Project – DRAFT Recreation Report

A more comprehensive description of the affected environment can be found in section 3.12 of the March 2012 draft EIS (pages 3-258 – 3-291) and section 3.10 of the October 2012 final EIS (pages 3-30 – 3-33).

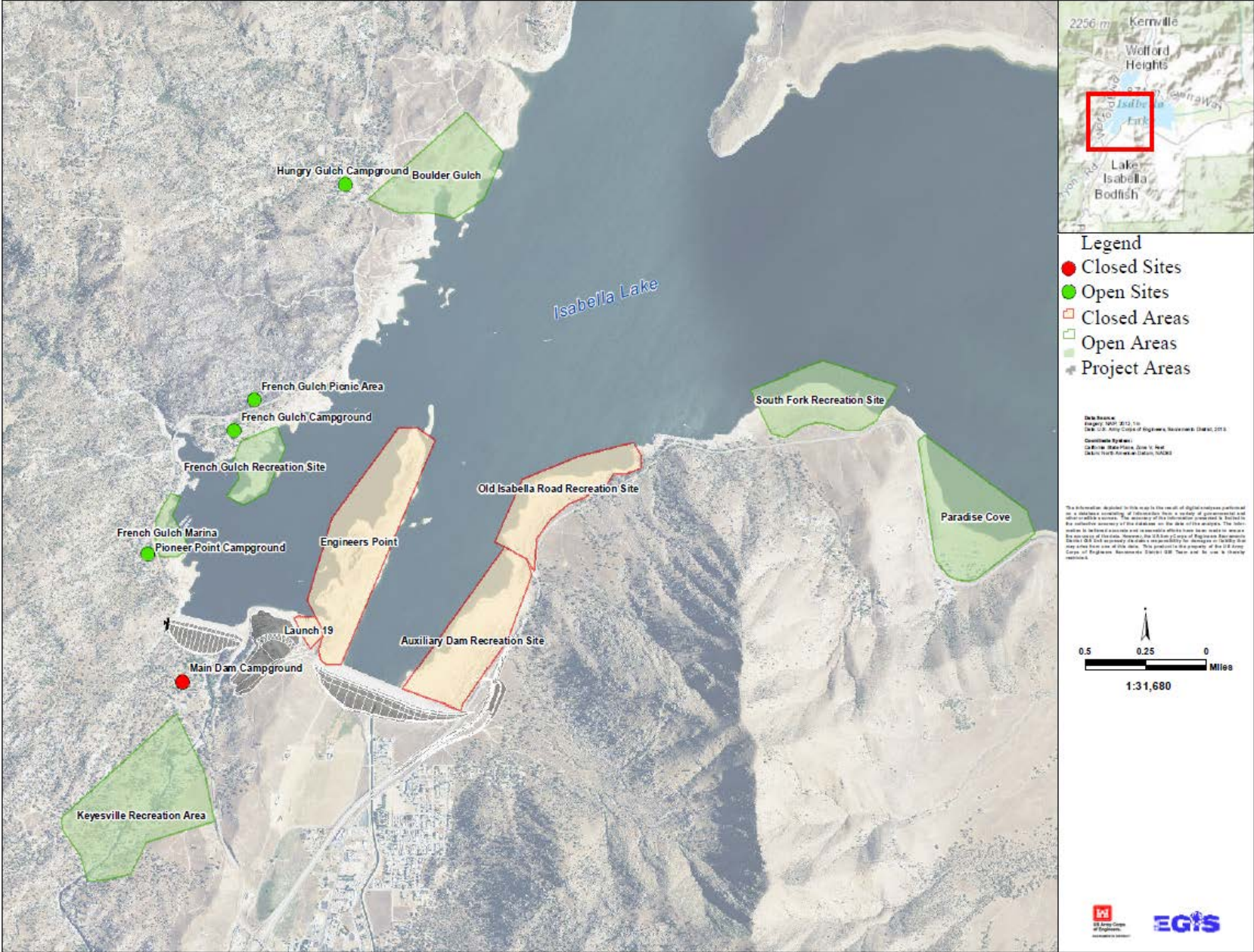


Figure 3: Isabella Lake DSM Project - Recreation Impacts Map

## Tentative Project Schedule

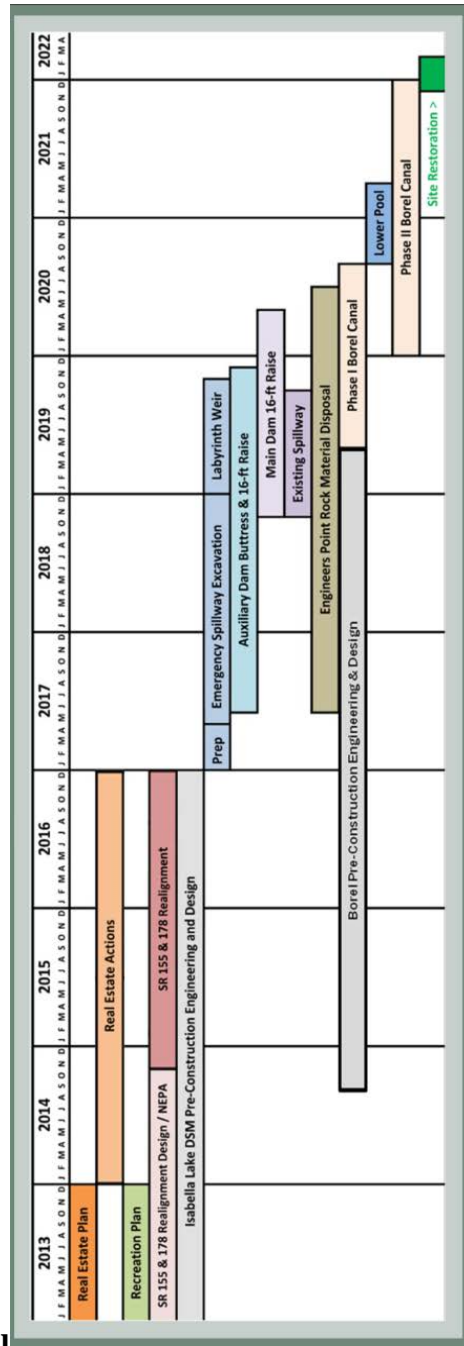


Figure 4 – Isabella DSM Project construction schedule

#### **4.1 Boat Launch 19**

The Main Dam Boat Launch, also known as Launch 19, is centrally located near the current Corps and USFS offices. Launch 19 is the most popular and well-developed boat launch at Isabella Lake. It is in the deepest portion of the lake, allowing ingress and egress at low lake levels. This area is designed to accommodate use by motorized boats with parking for vehicles and trailers. It also includes an Architectural Barriers Act (ABA) accessible bathroom. Launch 19 also is used by patrol officers to watch the lake.

#### **4.2 Auxiliary Dam Recreation Site**

The Auxiliary Dam Recreation Site is an open beach area with almost no boulders and thus, is the most heavily used area for recreational vehicle (RV) parking and camping, as well as small motorized craft launching (jet skis). It is also used as the central staging area for large special use events, such as the annual Lake Isabella Fishing Derby. An RV dump station and three restroom facilities – two providing sinks and flush toilets, and one providing showers in addition to the sinks and toilets – are located above high water level. The entrance to the site also has a visitor kiosk that is staffed during high use periods as an entrance station to provide visitor information and issue passes for camping and day use activities.

#### **4.3 Engineers Point Recreation Site**

The peninsula of land between the two dams, known as Engineers Point, is popular for walking and fishing and is used for many of the larger special use events. It is the staging area for the annual Fourth of July fireworks display.

#### **4.4 Main Dam Campground**

The Main Dam Campground, at the toe of the Main Dam, is a wooded developed campground. It is currently closed while the Isabella Lake DSM Project is in PED phase and planned for use as a staging area during construction.

#### **4.5 Old Isabella Recreation Site**

The Old Isabella Recreation Site is located just to the north and east of the Auxiliary Dam Recreation Site. The boulder-strewn beach is prohibitive to large recreational vehicle

traffic, but smaller vehicles are often parked near the lake edge. It is a popular wind- and kite-surfing destination and the only inland windsurfing location with reliable conditions.

#### **4.6 Visitor Services (USFS Lake Isabella Office)**

In addition to the administrative offices and fire services, the USFS Lake Isabella Office provides visitor services, to include campfire permits, special use permits, area recreation information, and a small gift shop.

#### **4.7 Keyesville South and Slippery Rock Put-In**

The areas to the south of Main Dam Campground are managed by BLM and consist of a vault toilet, developed and undeveloped camping and river access for rafting concessions, fishing, and other river recreation use.

### **5.0 Consequences to Impacted Areas**

The Isabella Lake DSM Project final EIS lists criteria that would create significant impacts to recreation if the Project actions do any of the following:

- result in a permanent loss of recreational opportunities or resources
- severely restrict or eliminate access to recreational opportunities and facilities
- cause a substantial disruption in a recreational use or activity
- substantially diminish the quality of the recreational experience

Below is a list of the significantly impacted areas and the consequences to recreation without mitigation.

#### **5.1 Boat Launch 19**

All facilities at Boat Launch 19 will be closed temporarily for the period of construction. Facilities at this site might be preserved and reopened after construction is complete, but it is uncertain at this time. This is a significant impact to recreation, as there are no other developed low-water or ABA-accessible boat access points.

#### **5.2 Auxiliary Dam Recreation Site**

The Auxiliary Dam Recreation Site is proposed as a staging area for the construction of the Isabella Lake DSM Project and will be closed during construction. After construction is complete, it will be graded and restored to its former uses for day use, recreational vehicle parking and camping. However, as this site is the most popular and heavily-used area on the lake - and the only area on the south side of the lake with a dump station and showers - displacement of visitors during construction is likely going to cause visitor use conflict in other areas. Amenities that are impacted during construction could be made available at alternate locations. Recent survey data indicate that visitors to the Auxiliary Dam Recreation Site would most likely move up the beach to the Old Isabella Recreation Site in the event of the former being closed to recreation. Currently, the facilities at Old Isabella Recreation Site are not adequate to absorb the anticipated visitor use increase from such a closure.

### **5.3 Engineers Point Recreation Site**

The closure of the peninsula between the dams, known as Engineers Point, is expected to impact special use permits and popular weekend events, such as the Independence Day fireworks show and the annual Lake Isabella Fishing Derby. It is anticipated that the land will be reopened to the public for recreation use after construction of the Project and that access will be available by land or water. The Corps is currently assessing dam safety security requirements that will dictate whether this area will be reopened after construction.

### **5.4 Main Dam Campground**

The Main Dam Campground is currently closed and is expected to remain closed throughout construction of the Project. The site is proposed as a staging area and will be within the blasting restriction zone for the construction of the new emergency spillway. As part of the Isabella Lake DSM Project PED phase, the Corps is currently assessing dam safety security requirements that will dictate whether the campground can be reopened after construction. The stilling basin that is located on the Main Dam Campground property is anticipated to stay intact and operational, enabling the continued operation of bathrooms at nearby Pioneer Point Campground.

### **5.5 Old Isabella Recreation Site**

The Old Isabella Recreation Site will be impacted by increased traffic and mixed recreation use as a result of the closure of the adjacent Auxiliary Dam Recreation Site. The concentration of different types of recreation use, the limited availability of space for recreation activities (day use, camping, RV parking, boat launching, etc.), and increased mixed use of motorized and non-motorized watercraft will present management challenges and visitor use



conflict. Additionally, there may be a safety concern with increased traffic entering and exiting the area on State Route 178, as there is not currently a turn lane into the area.

### **5.6 Visitor Services (USFS Lake Isabella Office)**

The USFS Lake Isabella Office will be demolished as a result of the construction of the new emergency spillway. The services provided to the public through this office will be directly impacted by the closure.

### **5.7 Keyesville South and Slippery Rock Put-In**

Tent camping near the river can be found at nearby Slippery Rock and Keyesville State Recreation Area. Parking off the dirt road and camping in undeveloped riverside areas would likely continue, but construction noise may discourage use. Rafting entities will still be able to access the area and use it as a put-in during construction. Some road closures may present traffic delays. Fishing access will not be disturbed, but the construction noise may negatively affect the recreation experience.

## **6.0 Potential Mitigation Measures**

This section presents a summary of the potential mitigation measures proposed by agencies, visitors and recreation stakeholders, drawing from comments to the draft and final EIS, survey results and recommendations, public information meetings, and correspondence with Kern River Valley residents.

In general, mitigation measures are expected to be in-kind and on-site. However, at this early phase of analysis, a broad range of potential measures are being discussed.

Many measures have been proposed by agencies and the public to accommodate the loss of recreation resources from indirect actions. Indirect actions, such as shifting use from one recreation site to another, do not correlate directly with the impacts caused by closures from the Project. Nonetheless, measures are included here for consideration, along with all other proposed measures that directly address the loss of resources from the Project. These measures include changes to fisheries management, removal of exposed tree stumps from the lake bottom, development of bike trails around the lake, construction of a mini-golf course, construction of hotel accommodations for construction workers, and installation of viewing platforms. Screening and evaluation of proposed recreation measures is not the intent or purpose of this Report but will instead be addressed in the Recreation EA.

An environmental analysis of these measures will be presented in the Recreation EA. This Report will be used to inform the EA and will be appended to that document scheduled for late 2014.

### **6.1 Boat Launch 19**

Due to impacts to recreational lake access as well as operational functions (i.e. lake patrol), mitigation measures need to address parking, launching and adequate space for vehicles with trailers to turn around. Additionally, any mitigation measures must meet ABA guidelines for accessibility. Considered mitigation measures are:

- Improve boat access at Old Isabella Recreation Site
- Develop additional parking and bathroom facilities at Old Isabella Recreation Site
- Create a turn lane for large vehicle traffic at State Route 178 near Old Isabella Recreation Site
- Develop a boat launch and improve parking areas at the French Gulch Recreation Site
- Develop a boat launch and improve parking areas at the French Gulch Marina area

Appropriate signage is recommended to be posted at recreation sites indicating the rules and regulations of the lake, information about the area, launch ramp closures, and to direct traffic to an appropriate alternative location.

Installation of floating bathrooms is proposed as a means of accommodating bathroom closures at Launch 19. Floating bathrooms are a convenient and sanitary option, as boaters do not need to come in off the water to use facilities. It is not determined at this time where floating bathrooms might be located.

Once construction is complete, it is proposed that Launch 19 be returned to its former state as a boat launch, as the prevailing winds and deep water make it uniquely suitable to launching boats. Currently, it is not known whether the area can be returned to its former state. Also, due to anticipated impacts from construction, the launch, parking lots, bathrooms and other facilities or utilities may need to be entirely rebuilt. The Recreation EA will evaluate whether the area can be returned to its former state. If it is determined it is not possible, one of the mitigation measures listed above may be considered for implementation.

### **6.2 Auxiliary Dam Recreation Site**

As stated, the closure of the Auxiliary Dam Recreation Site is temporary during the period of construction. The site will be reopened when construction is complete. However, due

to the significant short-term impacts to day use, recreational vehicle parking and camping, and water-related activities, considered mitigation measures are:

- Partial closures instead of permanent closures
- Develop additional camping and vehicle parking facilities during construction at one or more of the alternate areas near the closed site (Old Isabella Recreation Site, South Fork Recreation Site, and/or Paradise Cove)
- Allow beachside parking and/or overnight camping at Paradise Cove during construction
- Develop Boulder Gulch as an alternate camping spot to accommodate the campers displaced from the Auxiliary Dam Recreation Site

It is recommended that an RV dump station be developed at any alternate locations that absorb displaced use.

### **6.3 Engineers Point Recreation Area**

The closure of Engineers Point Recreation Area is not significant during normal use days within the recreation season, but it is a significant impact on holiday and major event weekends. It is suggested that Engineers Point might be made accessible on weekends during construction if construction traffic would allow access. It is anticipated that the land will be reopened to the public for recreation use after construction of the Project, and that access will be available by land. After construction, there may be an opportunity to grade the area for future improvements to recreation access and development; however, this opportunity may be limited by the amount of material placed at Engineers Point during construction.

### **6.4 Main Dam Campground**

As previously stated, the assessment of whether the campground can be reopened after construction is underway. If it is determined the site cannot be reopened, the potential alternate camp sites are: the Auxiliary Dam Recreation Site, the Live Oak Campground and the Keyesville Recreation Area on the Kern River below the Main Dam, which is currently managed by the BLM.

### **6.5 Old Isabella Recreation Site**

Although it is not directly affected by closure, the Old Isabella Recreation Site is expected to see increased use due to the closure of the adjacent Auxiliary Dam Recreation Site.

Improvements to this area are suggested by agency representatives, visitors, and area residents. Proposed improvements to the Old Isabella Recreation Site are:

- Widen and lengthen the boat ramp to accommodate increased motorized boat use
- Provide a turn lane for increased traffic
- Grade and remove boulders from the area to accommodate recreational vehicles at the water's edge
- Increase parking capacity and provide room for turnarounds
- Add permanent restroom facilities (vault toilets)
- Adding temporary restroom facilities for the period of construction

Windsurfers and other non-motorized watercraft users proposed management measures to limit motorized boat traffic in the Old Isabella Recreation area. The mixed use currently presents conflicts and safety concerns, and the expected increased use from closure of the Auxiliary Dam Recreation Site would likely worsen this conflict.

#### **6.6 Visitor Services (USFS Lake Isabella Office)**

The location of the USFS Lake Isabella Office will be evaluated and addressed in the Real Estate EA. The USFS visitor services administered through the current office may be accommodated through alternate non-USFS facilities. The local community proposed that the visitor services be provided as a part of a “gateway center” that is currently under consideration.

#### **6.7 Keyesville South and Slippery Rock Put-In**

To address anticipated increase in camping use from closures of other recreation areas in the vicinity, a recommendation has been made to improve access and bathroom facilities in the areas along either or both sides of the Kern River in the Keyesville South Recreation Area.

#### **6.8 Mitigation Measures Summary**

The following table displays the potential mitigation measures discussed above.

Table 2. Mitigation Summary.

Recreation Site	Potential Mitigation Measure			
	Partial Closure	Temporary Replacement Facilities	Temporarily Change Use	RV Dump Station
Launch 19		X		

Recreation Site	Potential Mitigation Measure			
	Partial Closure	Temporary Replacement Facilities	Temporarily Change Use	RV Dump Station
Auxiliary Dam	X	X	X	X
Engineers Point	X			
Main Dam Campground		X		
Old Isabella Rd.		X	X	
Visitor Services		X		
Keyesville		X		

## 7.0 Conclusion

### 7.1 Alternatives Evaluation and Implementation

This Report is a working draft document that aids consideration and determination of feasible and acceptable mitigation measures to offset significant impacts to recreation from the Project. It does not recommend an alternative but rather provides the array of potential mitigation measures from which a selection may be made.

### 7.2 Recreation EA

If authority issues are resolved and a Federal Action is proposed, the Recreation EA will be completed that will assess the impacts to the environment for implementing recreation measures. The Report will be included in the recreation EA. If required, a draft Recreation EA will be released to the public in the fall of 2014, and a final EA by the end of 2014.

#### 7.2.1 Implementation of Alternatives

The USFS is the Federal agency responsible for the management of the recreation mission at Isabella Lake. At this time, no decision has been made with regards to the appropriate authority mechanism for implementation of recreation mitigation measures at Isabella Lake. As previously stated, the Corps is working with the USFS to resolve questions regarding implementation authority.

## **8.0 References**

Corps of Engineers. 2012. Isabella Lake Dam Safety Modification Project Draft Environmental Impact Statement. March 2012.

Corps of Engineers. 2012. Isabella Lake Dam Safety Modification Project Final Environmental Impact Statement. November 2012.

ER 200-2-2 – Procedures for Implementing NEPA. 1988.

ER 1105-2-100 - Planning Guidance Notebook. 2000.

EC 1165-2-214 - Civil Works Review. 2014.

United States Forest Service, Sequoia National Forest. Lake Isabella Camping. Accessed 2014.

## **9.0 Appendices**

- A. Corps of Engineers, 2012. Isabella Lake Dam Safety Modification Project Record of Decision
- B. Recreation Survey Report
- C. Summary Table of Recreation Impacts

## **APPENDIX B – USFS Facilities**

**USFS LAKE ISABELLA OFFICE AND FIRE RESPONSE STATION  
RELOCATION**

**Facilities Detail Summary**

<b>Existing Condition</b>	<b>Proposed</b>
<p><u>USFS Lake Isabella Office.</u> Located on Ponderosa Way with a view of the reservoir, this administrative and visitor center complex serves about 12,000 visitors each year with focus on Isabella Lake recreation. The Lake Isabella Office consists of a wood framed building of 5,707 square feet (built in the early 1950s by the USACE) and currently houses 13 permanent employees. The USFS Lake Isabella Office includes a 450 SF visitor center integrated into the building lobby.</p>	<p><u>KWC.</u> Located on an unimproved portion of land at the existing KWC complex, a new 5,514 SF Administrative Building would be constructed to serve the administrative function of the displaced Lake Isabella Office in like kind and capacity. The Administrative building would be LEED certified with supplemental solar. Solar panels would be placed on building rooftops or adjacent gravel/ruderal vegetation areas. An addition to the Administrative Building of approximately 4,271 SF would be funded by the USFS. The building will be heated and cooled by a central air system. New POV and GOV parking would be provided. All facilities would meet or exceed ADA, UBC, and ANSI standards.</p>
<p><u>USFS Fire Response Station.</u> A 7-person fire engine module (Engine 47) is located in the vicinity of the USFS Lake Isabella Office. High-country fire engines also winter over at this location. The fire response station consists of 2,184 square feet. Other fire-related facilities at the fire response station include 32,240 SF of parking and fire equipment storage for an Incident Response Command Center (IRCC) strike team. Dedicated restroom facilities for fire strike teams and a helitack rappel training tower are also present.</p>	<p>The KWC improvements would include a 2,700 SF multi-bay warehouse with storage, unisex restroom/shower and cache storage for additional engines to replace Lake Isabella Office shop facilities. A duplex of 2,224 square feet would be demolished, and an additional parking lot with approximately twelve vehicle spaces would be constructed in the duplex footprint.</p>
<p><u>Shop Facilities.</u> Shop facilities in the USFS Lake Isabella Office maintenance area are comprised of a wood (sign) shop, welding shop, electrical and plumbing shop, storage and a parking lot. All facilities including the parking lot take up 4,638 square feet.</p>	<p>All new facilities include electrical and communication utilities, septic tank and leach field system, and hookup to existing water supply. <u>USFS VIC/Fire Response Station Complex.</u> The proposed location would be at an undeveloped 4.1-acre USFS lands on Isabella Blvd. adjacent to Kern Co. Govt. Offices.</p>
<p><u>KWC.</u> Located at the intersection of Kernville Road and Sierra Way in the town of Kernville, the KWC currently consists of 18 buildings, structures and features scattered over approximately 10.7 acres. This facility periodically serves as a fire camp and incident command post (ICP) for wildland fires on FS lands, as well as</p>	<p>A 450 SF modular trailer would be placed on the IRCC strike team asphalt parking lot for temporary replacement of the existing visitor center.</p>



<p>providing for USFS storage and a native plant nursery.</p>	<p>A modernized 4,000 SF two-bay fire station with associated support facilities, such as 28,500 SF of paving related to fire station storage, vehicle parking, turning radii, and 17,900 SF of parking and storage for IRCC strike team activities would be constructed. All facilities would meet or exceed ADA, UBC, and ANSI standards. Six (6) vertical axis wind turbines on 30-foot poles at the Lake Isabella Visitor Information Center/Fire Response Station Complex in support of Executive Order 13423 – renewable energy will be constructed. All new facilities include electrical and communication utilities, septic tank and leach field system, and hookup to existing water supply.</p>
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**USFS LAKE ISABELLA RECREATION FACILITIES  
RELOCATION**

**Facilities Detail Summary**

<b>Location</b>	<b>Existing Condition</b>	<b>Proposed</b>
Launch 19	<p><u>Parking:</u> 82 car and/or trailer asphalt spaces with approximately 2% accessible design. Approximately 1.5 total acres of paved parking on two different elevation lots.</p> <p><u>Launch Ramp:</u> 48-foot wide grooved concrete at 12-14% slope for reservoir elevation operation range from gross pool (elevation 2609' NAVD88) to Elevation 2548 NAVD 88 ft. Includes one accessible boat loading ramp and one, 8'x40' floating courtesy dock with ramp.</p> <p><u>Sanitary:</u> One cinder block men/women restrooms with flush toilets, sinks, mirrors and electrical connections and septic tank with leach field. Currently meets applicable ADA, UBC, and ANSI standards for public restrooms.</p>	<p><u>Parking:</u> Equivalent parking of 82 car and/or trailer asphalt spaces to be constructed after project. Two separate lots would be combined into one at upper lot level with an approximate elevation of 2609.26' NAVD88.</p> <p><u>Permanent Launch Ramp:</u> The existing ramp would be protected in place at Launch 19 and reopened upon completion of DSM Project.</p> <p><u>Sanitary:</u> One equivalent capacity and sized modular vault restroom would be installed to meet or exceeds ADA, UBC, and ANSI standards. No mirrors, sinks or electrical lights would be provided inside the restroom. One faucet would be provided outdoors. Solar powered security ancillary lighting would be provided.</p>
<p>French Gulch Recreation Area</p> <p>French Gulch Recreation Area (continued)</p>	<p><u>Parking:</u> Approximately one acre asphalt unmarked parking on lower level (not including Nuui Cunni Cultural Center, Group Use Area, or Kern Co. asphalt parking above and away from lake.</p> <p><u>Launch Ramp:</u> None exists – car top launch only.</p>	<p><u>Parking:</u> Approximately 0.5 acres of paved surface marked parking on the lower level would be installed. Existing lower and upper level asphalt parking would be marked for parking and used for boat trailer &amp; vehicle parking. The existing Nui Cunni dirt parking lot would be paved and marked for parking. The entry and exit to the Recreation</p>

	<p><u>Sanitary:</u> One cinder block men/women restroom with flush toilets, sinks, mirrors and electrical fixtures package with septic tank. Effluent is pumped to oxidation pond at Main Dam Campground. Currently meets applicable ADA, UBC, and ANSI standards for public restrooms.</p>	<p>Area from the Highway would be paved.</p> <p><u>Interim Launch Ramp:</u> A 48-foot wide grooved Portland cement concrete boat ramp at 12-14% slope would be constructed for 2,589-foot (361,250 acre-feet) to 2,539-foot (59,775 acre-feet) (NAVD 88) reservoir elevation operation range. An ADA passenger accessible boat loading ramp would be installed. The 8'x40' floating courtesy dock will be transferred with ramp includes an asphalt concrete access road to the boat ramp.</p> <p><u>Sanitary:</u> The existing restroom facility would be removed and replaced with four vault toilets with lighting and an exterior faucet. The current septic field would be protected in place for other existing facilities.</p>
<p>Auxiliary Dam Recreation Area</p>	<p><u>Entrance Area:</u> Asphalt entry to fee kiosk (with electrical connection) and camp host site (water, power, septic).</p> <p><u>Camping/Day Use:</u> Approximately 3,570 linear feet of sandy shoreline for public use. Limited tables or grills.</p>	<p><u>Entrance Area:</u> An asphalt concrete entry road would be constructed to a new pre-manufactured fee kiosk, and camp host site with equivalent design and features.</p> <p><u>Camping:</u> Approximately 1,550 linear feet of shoreline camping in the northern portion would be maintained during DSM construction. Connectivity to the Old Isabella Road Recreation Area would be installed via a new aggregate base access road above restricted pool 2,589.26 feet NAVD 88 (361,250 acre feet). The permanent loss of approximately seven acres of upland area within the recreation</p>

	<p><u>Sanitary:</u> Three cinder block men/women restrooms (one w/shower) with flush toilets, sinks, mirrors and electrical connections on septic tank/leach field. One RV dump station (1,500 gals.); joint water system with Old Isabella Road Recreation Area).</p>	<p>footprint resulting from the Aux Dam left abutment extension, would be offset with an equivalent amount of area made usable and accessible at Old Isabella Road Recreation Area.</p> <p><u>Sanitary:</u> Replacement would be conducted for three existing restrooms with three modular vault restrooms units of eight stalls that collectively would total 24 stalls. Ancillary solar lighting and two outdoor faucets would be installed for each unit to meet or exceed ADA, UBC, and ANSI standards. No mirrors/shower/sinks or electrical outlets would be replaced. The RV dump station would be relocated permanently to Old Isabella Road Recreation Area.</p>
<p>Old Isabella Road Recreation Area</p>	<p><u>Entrance Area:</u> Asphalt entry with no left turn lane/restricted visibility.</p> <p><u>Camping/Day Use:</u> Limited access to approximately 2,225 linear feet of rocky shoreline for undeveloped recreational use.</p> <p><u>Sanitary:</u> One cinder block men/women restroom with</p>	<p><u>Entrance Area:</u> An asphalt concrete entry would be installed to a new kiosk or an unmanned fee collection station. Recreation Area connectivity would be made with Aux Dam Rec Area via a new aggregate base access road above the restricted pool 2,589.26 feet NAVD 88 (361,250 acre feet).</p> <p><u>Camping/Day Use:</u> Shoreline boulders greater than 6” in area would be cleared to produce an area that is equal to the temporary and permanent Aux Dam Rec Area displacement. Access would be improved with the addition of an aggregate base road from a paved parking lot to a new restroom turn-around.</p> <p><u>Sanitary:</u> One cinder block restroom on the septic system</p>

	<p>flush toilets, sinks, mirrors and electrical connections and a septic tank/leach field system. (1) CXT single vault toilet building (1,000 gal); (1) vertical well with a 40,000 gal storage tank; and 6 connections (also serves Auxiliary Dam</p> <p><u>Parking:</u> 180 car and/or trailer asphalt spaces with approximately 2% accessible design. Approximately 1.7 total acres of paved parking on one elevation lot.</p> <p><u>Launch Ramp:</u> 48-foot wide grooved concrete at 12-14% slope. Includes (1) 8'x40' floating courtesy dock with ramp.</p>	<p>would be replaced with a Sani Star RV dump station to utilize the existing septic system. One existing single vault toilet building would be retained in place and two additional 4-stall modular vault restrooms with a solar package would be added to meet or exceed ADA, UBC, and ANSI standards. No mirrors/shower or electrical fixtures would be included. Three faucets would be provided outdoors. The 40,000 gallon storage tank would remain in place.</p> <p><u>Parking:</u> The existing facilities of the 180 car and/or trailer asphalt parking lot would be retained.</p> <p><u>Launch Ramp:</u> The existing launch ramp facilities would be maintained.</p>
<p>South Fork Recreation Area</p>	<p><u>Camping/Day Use:</u> Approximately 3,570 linear feet of sandy shoreline for public use. No tables or grills.</p> <p><u>Launch Ramp:</u> 72-foot wide grooved concrete at 12-14% slope for operation over a wide range of reservoir operations. Includes (1) 8'x40' floating courtesy dock with ramp.</p>	<p><u>Camping/Day Use:</u> Maintain same existing facilities.</p> <p><u>Launch Ramp:</u> Maintain existing launch ramp facilities.</p> <p><u>Sanitary:</u> One existing cinder block men/women restroom may be retained in place, or a 4 stall vault toilet may be installed. The well would be retained. No</p>

	<p><u>Sanitary:</u> One cinder block men/women restroom with flush toilets, sinks, mirrors and electrical connections on a septic tank/leach field system. One vertical well with a 550 gal storage tank; and 11 connections. Restroom currently meets applicable ADA, UBC, and ANSI standards for public restrooms.</p> <p><u>Parking:</u> (190) car and/or trailer dirt spaces for launch/marina parking. No accessible parking at restroom.</p>	<p>mirrors/showers/electrical would be included with modular vault toilet. One or two outdoor faucets would be added, supplied by the existing well. Solar powered ancillary lighting would be provided, without inside electrical fixtures. Meets or exceeds ADA, UBC, and ANSI standards.</p> <p><u>Parking:</u> Existing facilities would be retained with ADA accessible parking added at both restrooms.</p>
Main Dam Campground	<p><u>Camping:</u> Sixty-three designated camping sites with tables and grills.</p> <p><u>Sanitary:</u> One cinder block men/women restroom with flush toilets, sinks, mirrors and electrical connection, and a septic tank with oxidation pond discharge (shared with Pioneer Point Campground and French Gulch Marina). Water piped from the potable storage tank above Pioneer Point Campground. Restroom may not currently meet applicable ADA, UBC, and ANSI standards for public restrooms.</p>	<p><u>Camping:</u> Three to four group camp sites with sun shelters would be constructed. Each group site would be installed with a large community pedestal grill and sufficient tables in such kind and quantity as would provide levels of service and/or access at least equivalent to the existing condition.</p> <p><u>Sanitary:</u> One cinder block restroom may be replaced with four stall modular vault restrooms to meet or exceed ADA, UBC, and ANSI standards. No sinks/mirrors to be replaced. One or two faucets would be added outdoors. The external piped water source would be retained or replaced with either an in-camp well and/or storage tank. Solar powered ancillary lighting would replace nonfunctional electric lighting.</p>

## **APPENDIX C – Vertical-Axis Wind Turbine Photo**





## **APPENDIX D – USFS Biological Evaluation**



# Isabella Dam Safety Mitigation Project

United States  
Department of  
Agriculture

Vegetation Mitigation sites  
Forest Service Admin. Services Relocation sites  
Recreation Mitigation Sites

Forest  
Service

January 2015

## Biological Resources Report



Biological Evaluation for Plants and Animals  
Management Indicator Species  
Migratory Land Bird Conservation Assessment

**Kern River Ranger District, Sequoia National Forest  
Kern County, California  
Sections 14, 15, 20, 22, 23 and 24, Township 24 South, Range 34 East, MDB&M**

Prepared by:

Prepared for:

/s/ Steven W. Anderson January 2,  
2015

U.S. Army Corps of Engineers, Sacramento  
District

Steven W. Anderson, Resource Officer

1325 J Street, Sacramento, CA 95814

Kern River Ranger District, Sequoia National  
Forest

Contact: Mitchell Stewart, 916-557-6734

### SUMMARY:

This biological resource report documents analysis of effects of land disturbance associated with development of two vegetation mitigation sites, two administrative use sites and three recreation mitigation sites on National Forest System (NFS) Lands as a result of the Isabella Dam Safety Mitigation Project. Effects are addressed for Threatened, Endangered Species and their critical habitats as listed under the protection of the Endangered Species Act; Pacific Southwest Region, Forest Service Sensitive animals; management indicator species habitats and conservation of migratory land birds in compliance with the Migratory Bird treaty Act. Analysis of effects is tiered to the Sequoia National Forest Land and Resource Management Plan (USDA-FS, 1988) as amended by the Sierra Nevada Forest Plan Amendment (USDA-FS, 2004). Federally listed species protected under the Endangered Species Act are addressed in this document with a determination of no effect. Since there is a determination of

no effect, a biological assessment will not be prepared and consultation is not required. Forest Service sensitive species addressed in detail and effects are summarized in table 1.

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# INTRODUCTION

Table 1 indicates species listed for protection under the Endangered Species Act of 1973 (Threatened, Endangered and species proposed for listing (TEP)) and Forest Service sensitive species (S) that may be affected by the proposed action. A full list of identified species at risk that may be found within or indirectly affected by actions within the Sequoia National Forest are listed in Appendix A with the rationale for inclusion in this document for detailed analysis or not.

This report meets the requirements of a biological evaluation (BE) and is prepared in accordance with legal requirements set forth under Section 7 of the Endangered Species Act (19 U.S.C. 1536 c) and follows the standards established in Forest Service Manual direction (FSM 2672.42) (USDA-FS, 2011).

Management indicator species (MIS) for the Sequoia National Forest and their associated habitats are listed in Table 2. No adverse effects on MIS species or their habitats are anticipated as a result of these projects.

**Table 1: Threatened, Endangered and Forest Service Sensitive Species Addressed.**

Species	Status	Determination
Kern Canyon. slender salamander ( <i>Batrachoceps simatus</i> )	FS	Not likely to lead to listing or loss of viability (may benefit)
Breckenridge (Relictual) slender salamander ( <i>Batrachoceps relictus</i> )	FS	Not likely to lead to listing or loss of viability (may benefit)
Greenhorn Mtns slender salamander ( <i>Batrachoceps altasierrae</i> )	FS	Not likely to lead to listing or loss of viability (may benefit)
Yellow blotched ensatiina ( <i>Ensatina croceator croceator</i> )	FS	Not likely to lead to listing or loss of viability (may benefit)
Sw pond turtle ( <i>Emmys marmorata</i> )	FS	Not likely to lead to listing or loss of viability (may benefit)
Hardhead minnow ( <i>Mylopharodon conecephalus</i> )	FS	Not likely to lead to listing or loss of viability (may benefit)
California legless lizard ( <i>Annelia pulchra</i> )	FS	Not likely to lead to listing or loss of viability (may benefit)
<b>Yellow-billed Cuckoo (WDPS) (<i>Coccyzus americanus occidentalis</i>) and Critical Habitat</b>	<b>FT</b>	No effect
<b>SW Willow flycatcher (<i>Empidonax trailii eximus.</i>)</b>	<b>FE</b>	No effect
<b>California condor (<i>Gymnogyps californianus.</i>)</b>	<b>FE</b>	No effect
Alkali mariposa lily <i>Calochortus striatus</i>	FS	Not likely to lead to listing or loss of viability (may benefit)
Tracy's eriastrum ( <i>Eriastrum tracyii</i> )	FS	Not likely to lead to listing or loss of viability
Mojave tar plant ( <i>Deinandra mohavensis</i> )	FS	Not likely to lead to listing or loss of viability
rose-flowered larkspur <i>Delphinium purpusii</i>	FS	Not likely to lead to listing or loss of viability
Bakersfield cactus <i>Opuntia basilaris treleaseii</i> )	FE	No effect
Shevock's (Kern Cyn.) false goldenaster <i>Heterotheca shevockii</i>	FS	Not likely to lead to listing or loss of viability

<b>Listing Status Key: federal/state</b>	<b>FP</b> Federal Proposed	<b>SP</b> State Fully Protected
<b>FS</b> USFS Sensitive Species	<b>FT</b> Federal Threatened	<b>SE</b> State Endangered
<b>FC</b> Federal Candidate	<b>FE</b> Federal Endangered	<b>ST</b> State Threatened
<b>LI</b> Local Interest	<b>NDPS</b> Northern District Population	<b>SC</b> CA Species of Special Concern

Segment

## DESCRIPTION OF THE PROPOSED PROJECT

The proposed action includes several separate but connected actions associated with mitigation of effects of remediation of dam safety issues associated with Isabella dam. These include:

**Oak woodland and elderberry habitat mitigation:** Habitat lost during actions associated with the Isabella Dam Safety Modification Project will be mitigated by development of replacement habitat and transplanting elderberry shrubs. Two sites (see maps A and B) totaling approximately 85 acres have been identified. The first parcel is approximately 72 acres within the South Fork Wildlife Area (SFWA) at Isabella Lake. The other parcel is approximately 14 acres in the lower Kern River at Black Gulch South. Both sites will be surrounded by a deer resistant fence approximately 10 feet high for five years to aid establishment of the replacement habitat. Each site will have a water system with drip irrigation for distribution. A mix of native species including blue oak, shrubs and perennial bunch grasses will be established. The SFWA site will also have transplanted elderberry shrubs and a fuel break. The fuel break will be maintained annually between the established vegetation and the adjacent private property for at least the first five years.

**Administrative Site Relocation:** The Forest Service Administrative site at Isabella Lake will be removed to accommodate spill way construction associated with dam remediation. Replacement facilities will be constructed on two parcels of NFS lands (see maps C and D). The administrative office will be replaced on NFS lands at the Kernville Work Center. This is a heavily disturbed site within an administrative complex. A replacement fire station and visitor center will be constructed on a vacant parcel at the north end of the town of Lake Isabella. This parcel also shows signs of past heavy equipment use.

**Recreation Site Mitigation:** Several high use recreation sites around the lake will be impacted or removed during activities during remediation of safety issues associated with Isabella Dam. Areas affected include: relocation of parking and boat launching facilities to the French Gulch area and construction of recreation facility improvements at Old Isabella and the South Fork Recreation Area. Old Isabella and South Fork Recreation area are previously disturbed sites with high existing recreational use. The French gulch area will involve disturbance of approximately 4 acres of oak woodland habitat above the maximum pool and development of paved parking and a boat ramp below maximum pool. Some minor clearing of rocks and sandbars below the ramp within the inlet will have to be completed to provide boat access to the facility during low water years.

## CONSULTATION TO DATE

The forest-wide list of proposed, endangered, and threatened species (species list), which may occur in or be affected by projects in the area of the Sequoia National Forest, was updated from the USDI, Fish and Wildlife Service (USFWS), Sacramento Field Office web site ([http://www.fws.gov/sacramento/es/spp\\_lists/NFActionPage.cfm](http://www.fws.gov/sacramento/es/spp_lists/NFActionPage.cfm)) as of December 15, 2014. The U.S. Army Corps of Engineers has consulted on routine operation of Isabella Lake for flood control and water storage as well as for activities associated with the Isabella Dam Repair and associated projects.

The Vegetation Mitigation Project is a mitigation of effects of dam repair actions affecting oak woodland and initial determination of effects on valley elderberry, long-horned beetle. Elderberry long-horned beetles in this area have since been determined to be a different species that is not protected. No further consultation under the Endangered Species Act is required since a determination of no effect is made for all listed species with potential for occurrence in the project area.

## **CURRENT MANAGEMENT DIRECTION**

This project is consistent with the management direction for Riparian Conservation Areas and meets the Riparian Conservation Objectives outlined in the Supplemental Environmental Impact Statement for the Sierra Nevada Forests Plan Amendment and Record of Decision (USDA-Forest Service 2004)

## **METHODS**

### **Record Search**

A search of District records, the U.S. Fish and Wildlife (USFWS) critical habitat and species list, California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDDB; within three miles of the project area), the California Native Plant Society's online Rare and Endangered Plant Inventory were also queried for the project area. The USFWS species lists for the affected map quadrangles included: delta smelt, western yellow-billed cuckoo, sw willow flycatcher, California condor, least Bell's vireo, California red-legged frog and a candidate species, fisher. There are no historical or current records of red-legged frog in the Kern River Valley. There are no historic or current roosts or foraging sites for condor in the project, although condors have been known to fly over the area. Delta smelt is found in the San Joaquin/ Sacramento delta and would not be affected since there is no flow of water from the Kern to the delta. There is no suitable habitat or known observations of fisher near the project. These species emanated from further study.

### **Field Survey**

Field surveys were conducted in November and December of 2014 by Steve Anderson, Resource Officer, Kern River Ranger District. Field surveys of sw willow flycatchers, western yellow-billed cuckoos and least Bell's vireos in the south Fork Kern have been ongoing since the late 1980s. Plant surveys of Black Gulch south were completed in 2011, 2012 and again in 2014, but results of all plant surveys in the annual grasslands for 2011 through 2014 have been inconclusive due to extreme drought conditions that have resulted in limited or no growth during this period in annual species. All parcels were visited in fall of 2014

## **EXISTING ENVIRONMENT AND GENERAL EFFECTS**

### **General Habitat Discussion**

**The Vegetation Mitigation Project is split into two parcels. One parcel is on relatively flat land within the South Fork Wildlife Area above maximum pool of the reservoir (2,606.5 feet elevation). This area is dominated by annual grasses and perennial shrubs, common species are buckwheat (*Eriogonum* spp.), rabbit brush (*Chrysothamnus* spp.). Most of this area was irrigated**



crop land prior to acquisition for the Isabella Dam project in the 1940s and 1950s. The other parcel is at Black Gulch South. This a steeper south western exposure also dominated by annual grass, with a shrub component of buck brush (*Ceanothus cuneatus*), rabbit brush (*C. nauseosus*) and scattered trees including foothill pine (*Pinus sabiniana*), scrub oak (*Quercus wislizenii*) and blue oak (*Q. douglassii*). The Black Gulch South Site was evaluated recently for scarification and closure of unapproved off highway routes. This project was completed in 2014 and will be complimented by this project. The South Fork Wildlife Area has known populations of alkali mariposa lily. There is potential for sensitive mosses on both sites.

The administrative office relocation is also split into two parcels. The Kernville Work Center is a disturbed site that has been graded each year for the past 3-4 years. Very little vegetation is on this site except scattered planted ponderosa pine and tree of heaven. There is a moderate infestation of puncture vine on this site. The Isabella administrative site is dominated by annual grasses and moderate shrub cover, mostly rabbit brush. There was considerable gopher activity and signs of use by rabbits, coyote and possible bobcat. Portions of the Isabella administrative site showed evidence of past heavy equipment use to grade the area and push rocks. No species of concern were observed. There are tar plants of unidentified species on site and populations of Tracy's eriastrum have been found within a mile of this parcel in similar habitat. There is potential for sensitive mosses on the Isabella administrative site. The Kernville administrative site is too disturbed to have mosses and was surveyed for Mojave tar plant prior to grading 4 years ago with negative results.

The Recreation mitigation sites are primarily below maximum pool elevation and as such have limited potential to support other than temporary vegetation development or sensitive animals.

## **BIOLOGICAL EVALUATION SPECIES ACCOUNTS**

Species accounts are summarized here with specific intent to focus on location or habitat preferences that may be affected by the proposed action. Greater detail is available on biology, range wide distribution and cumulative effects for these species In the Sierra Nevada Forest Plan Amendment (USDA-FS, 2001) (SNFPA) (the 2001 plan amendment is used in this context for reference rather than direction, direction is provided by the Record of Decision for the 2004 SNFPA supplemental EIS) FEIS volume 3 and the associated supplemental EIS and specialists' reports. Information in this section uses the California Wildlife Habitat Relationships (CWHR) program (CDFW 2007), California Natural Diversity Database (CNDDDB) (RAREFIND) (CDFW 2014), species accounts available from the USDI Fish and Wildlife Service, species accounts from the USDA PLANTS database, CALFLORA, the California Native Plant database, recent published literature and local survey or knowledge to provide a summary of species accounts.

### **Willow flycatcher (*Empidonax trailii extimus*)**

The southwest willow flycatcher (*Empidonax trailii extimus*) is a federally protected endangered species. Their breeding habitat is deciduous thickets, especially willows and often near water. They make a cup nest in a vertical fork in a shrub or tree. These birds migrate to Mexico and Central America, and in small numbers as far south as Ecuador in South America. They wait on a perch near the top of a shrub and fly out to catch insects in flight, also sometimes picking insects from foliage while hovering. Good quality nesting habitat includes willow habitat patches averaging 10-15 acres with shrub heights of 6-13 feet having foliar densities of 76% or more, near open water, marshy seeps, or saturated soils (Sogge, Marshall, Sferra, & Tibbitts,

1997) (Sogge, Marshall, Sferra, & Tibbitts, 1997). The willow flycatcher is a rare to locally uncommon, summer resident south of the Sierra Nevada through Arizona, New Mexico and southern California including the willow/ cottonwood riparian forest adjacent to the South Fork Wildlife Area vegetation mitigation site. The southwest willow flycatcher, *E. t. extimus*, has suffered severe declines in population.

**Direct and Indirect Effects of the Proposed Action:** The proposed vegetation mitigation site adjacent to the occupied nesting habitat for SW willow flycatcher would have no effect on the species or its critical habitat. Critical habitat for this species includes the extent of the riparian habitat along this section of the South Fork Kern River. The area affected by the vegetation mitigation site comprises drier sites at the edge of the riparian vegetation. It is likely within the 100 year flood plain of the river but lacks the density of mature riparian forest and standing water required by willow flycatchers for nesting habitat. As such it is adjacent to critical habitat but outside the definition of the final rule designating critical habitat for the species.

**Determination of effects:** The proposed action will have **no effect** on the SW willow flycatcher or its designated critical habitat.

**Rationale for effects determination:** No suitable breeding habitat or critical habitat for this species will be affected. Some dispersal or foraging habitat may be improved, but benefits are uncertain. No adverse effects will occur.

#### **Western Yellow-Billed Cuckoo *Coccyzus americanus occidentalis***

This sub species was recently listed for protection under the Endangered Species Act as Threatened with critical habitat designated in the South Fork Kern River. Western yellow-billed cuckoos breed in large blocks of riparian habitats, particularly woodlands with cottonwoods and willows. The South Fork wildlife Area is proposed for designation as Critical Habitat for this species.

The proposed vegetation mitigation site adjacent to the occupied nesting habitat for western yellow-billed cuckoo would have no effect on the species or its critical habitat. Proposed critical habitat for this species includes the extent of the riparian habitat along this section of the South Fork Kern River. The area affected by the vegetation mitigation site comprises drier sites at the edge of the riparian vegetation. The vegetation mitigation site is likely within the 100 year flood plain of the river but lacks the density of mature riparian forest for cuckoo nesting habitat. As such it is adjacent to proposed critical habitat but outside the definition of the proposed rule designating critical habitat for the species.

**Determination of effects:** The proposed action will have **no effect** on the western distinct population segment of yellow-billed cuckoo or its proposed critical habitat.

**Rationale for effects determination:** No suitable breeding habitat or critical habitat for this species will be affected. Some dispersal or foraging habitat may be improved, but benefits are uncertain. No adverse effects will occur.

#### **California Condor (*Gymnogyps californianus*)**

California condor are known to forage in the general vicinity of the southern San Joaquin Valley and occasionally roost in the Greenhorn Mountains north and west of the project or south in the Breckenridge Mountains. The proposed actions would not affect any known historic roosting or foraging areas.

**Determination of effects:** The proposed action will have **no effect** on California condor.

**Rationale for effects determination:** Condors are actively monitored. They have passed over the sites proposed for disturbance, but existing disturbance and close proximity to human influence limit potential for condor use and there are no historic condor roosts or foraging sites in or near the proposed projects.

### **Southwestern pond turtle (*emys marmorata*)**

SW pond turtles are found along the lower Kern River. They may travel up to 1 mile away from the river to lay eggs. The Black Gulch South and South Fork Wildlife Area project sites are within the area potentially used by this species. However, use of these areas by pond turtles is likely limited due to the heavy use of the Black Gulch South site for recreation and availability of better reproduction sites closer to the river at both sites. Disturbance on both of these sites are limited to construction of a fence and planting vegetation. Fencing may preclude use by turtles for egg laying, but higher value alternative sites existing in near proximity to the river and the fencing should not be a limiting factor for the species.

**Determination of effects:** The proposed action would **not cause or contribute to a trend leading to protection under the Endangered Species Act or loss of viability** for sw pond turtle.

**Rationale for effects determination:** Project is unlikely to have direct effects on the species and may benefit the species by reducing erosion and delivery of sediment to inhabited river segments.

### **Hardhead minnow (*Mylopharodon conocephalus*)**

Hardhead minnow are found adjacent to the Black Gulch Vegetation Mitigation Site in the lower Kern River. Hardhead minnow may be benefited indirectly by reducing sediment delivery to the river through restoration efforts.

**Determination of effects:** The proposed action would **not cause or contribute to a trend leading to protection under the Endangered Species Act or loss of viability** for hardhead minnow.

**Rationale for effects determination:** Project is would not have direct effects on the species and may benefit the species by reducing erosion and delivery of sediment to inhabited river segments.

## **Ensatina and slender salamanders**

**Kern Cyn. slender salamander** *Batrachoceps simatus*

**Relictual slender salamander** *Batrachoceps relictus*.

**Yellow blotched salamander** *Ensatina escholtzii croceator*

**Greenhorn Mtn s. salamander** *Batrachoceps altasierrae*

These species are generally found in moist areas and retreat underground during dry periods. No salamanders or ensatina were found, but they have been documented in Black Gulch Canyon, Erskine Creek and other locations in the lower Kern Canyon. The species names and ranges were recently revised. They are addressed as a group since habitat requirements and effects are similar. In general all of the affected sites appear to lack suitable habitat for these species. The vegetation mitigation sites may improve habitat for the species by increasing the volume of down woody debris and cover for these species in the long-term.

**Determination of effects:** The proposed action would **not cause or contribute to a trend leading to protection under the Endangered Species Act or loss of viability** for yellow-blotched ensatina, Kern Canyon slender salamander, relictual slender salamander and greenhorn Mountains slender salamander.

**Rationale for effects determination:** Project is would not have direct effects on the species and may benefit the species by increasing cover and down woody debris in the restoration sites over the long-term.

## **California Legless Lizard *Anniella pulchra***

This species is found in loose sandy soils with litter in chaparral and foothill woodland. Historical records exist for the Kernville and Erskine Creek areas. There is potential habitat within the project area, but there are no records of this species within the project areas. The species was recently split into several different species. The project areas are in an area where multiple species may exist in the area. Habitat requirements and effects are the same for all species of legless lizard. Each of the sites lacks the heavy detritus or mulch layer and cover favored by this species. Habitat elements favored by this species would be increased in the two vegetation mitigation sites. Sites below maximum pool, with heavy recreational use, heavily disturbed sites or sites with low ground cover are unlikely to support this species.

**Determination of effects:** The proposed action would **not cause or contribute to a trend leading to protection under the Endangered Species Act or loss of viability** for the California legless lizard.

**Rationale for effects determination:** Project is would not have direct effects on the species and may benefit the species by increasing cover and down woody debris in the restoration sites over the long-term.

## **Alkali mariposa lily (*Calochortus striatus*)**

Alkali mariposa lily is FS sensitive. It is found in shadscale shrub, chaparral and wetland habitats. There are occurrences of the alkali mariposa lily in the South Fork Kern River floodplain, below the Auxiliary Dam, and near the Kern Valley Airport). The plant is considered a facultative wetland (FACW) species according to USFWS. FACW plant species usually occur in wetlands (estimated probability 67% to 99%), but occasionally are found in non-wetlands. There are no wetlands within the proposed sites.

**Determination of effects:** The proposed action will have **no effect** on alkali mariposa lily.

**Rationale for effects determination:** The SFWA vegetation mitigation site is the only project site with potential for occurrence of this species. The vegetation mitigation site is primarily on dry uplands with low potential for occurrence of this species. Disturbance on this site will be minimal.

### **Mojave tarplant (*Deinandra mohavensis*)**

Mojave tarplant was listed as state endangered in 1981 and is FS sensitive. The Mojave tarplant grows in open moist sites in arid regions near the margins of the desert. Most known populations are within desert edge chaparral or coastal facing slopes. Most suitable habitat found on gentle slopes and low gradient stretches of streams in generally mountainous terrain. The most suitable sites occur in areas with mostly clay or silty soils that are saturated with water in winter and spring. Plants are found along grassy swales, intermittent creeks, and seeps. Occasional dwarfed plants are found in drier sites near occupied wet areas. This species seems to prefer areas where fairly substantial water supplies are available at rooting depths through the summer, but which are dry at the surface. All populations occur between 2,800 and 5,250 feet elevation, but most are located between 3,000 and 4,000 feet. An occurrence of Mojave tarplant has been documented near the North Fork Kern River above Isabella Lake. The Kernville Administrative site is within a few miles of the reported location. The site was surveyed for this species prior to grading approximately 5 years ago with negative results. The current site is graded and has no suitable habitat for this species. Other sites lack the suitable habitat conditions.

**Determination of effects:** The proposed action will have **no effect** on Mojave tarplant

**Rationale for effects determination:** The Kernville work Center site has the highest potential for occurrence. Prior surveys indicated that it is not present. Current conditions preclude colonization of the area by this species.

### **Tracy's eriastrum (*Eriastrum tracyi*)**

Tracy's eriastrum is an annual herb that is Forest Service sensitive. It is common to open areas on shale or alluvium, open woodland and chaparral from 1,300 to 3,280 feet. Tracy's eriastrum was recently found to occur along Hwy 178 on the east side of Isabella Lake and a rare plant survey conducted June 2012 found the species in highly disturbed areas, including gravel roadbeds, in the vicinity of Isabella Lake and proposed construction areas for the Isabella Lake DSM Project. Populations have been found in close proximity to the Isabella Administrative site, Old Isabella Recreation mitigation site and the South Fork Recreation Area mitigation site.

**Determination of effects:** The proposed project is **not likely to lead to loss of viability or contribute to a trend leading to federal protection** under the Endangered Species Act for Tracy's eriastrum provided that known populations are flagged and avoided or project activities occur during the dry/dormant season for this species.

**Rationale for effects determination:** The species is known to occur within or in near proximity to several sites. However, it is an annual species that is known to colonize disturbed areas and should have adequate seed reserves in the soil.

### **Bakersfield Cactus (*Opuntia baissaria treleaseii*)**

Bakersfield cactus is a subspecies of beavertail cactus. It is found in annual grassland from the mouth of the Kern Canyon south and west to Arvin. Nearest confirmed location is near the Hwy 178 hydroelectric Powerhouse at the mouth of the Kern River Canyon. A possible OPBAT plant has been located near lower Richbar. There are beavertail cactus near the Black Gulch South, Old Isabella Recreation and South Fork recreation sites, and Isabella Administrative site. Examination indicates that the cacti near the project areas are the more common *O. b. basilaris*, not *O. b. treleasei*.

**Determination of effects:** The proposed action will have **no effect** on Bakersfield cactus.

**Rationale for effects determination:** No plants have been found within the project area.

### **Shevock's golden-aster (*Heterotheca shevockii*)**

*Heterotheca shevockii* is a Forest Service designated sensitive perennial herb in the aster family known by the common names Kern Canyon false golden-aster and Shevock's golden-aster. It is endemic to Kern County where it grows along a 21-mile stretch of the Kern River. This plant grows in chaparral and woodland habitat in sandy soils in crevices and ditches near the river. There are about 8 populations of this plant, totaling 246 individuals. There are no known populations within the the project, but there are known locations along the river downstream of the Black Gulch south Vegetation mitigation site.

**Determination of effects:** The proposed project is **not likely to lead to loss of viability or contribute to a trend leading to federal protection** under the Endangered Species Act for *Heterotheca shevockii*.

**Rationale for effects determination:** There are no known populations that would be affected. The plant is a perennial herb that would be readily visible during surveys and project work, even in severe drought years. Therefore there is low potential for unknown populations within the area of potential effect. The areas of potential effect are generally drier site and there are none immediately adjacent to the river where this species occurs.

### **Rose-flowered larkspur (*Delphinium purpusii*)**

*Delphinium purpusii* is a perennial larkspur known by the common names Kern County larkspur and rose-flowered larkspur. It is endemic to Kern and Tulare Counties in the southern Sierra Nevada foothills. It grows on rocky cliffs and talus. There are several observations of this species within 1 to 4 miles west of the Black Gulch South and south of highway 178 in the vicinity of the Old Isabella, South Fork Recreation mitigation and Isabella Admin sites. It is a perennial erect herb that would be relatively easy to find during surveys or operations even in the off season or during severe drought effects.. This species was not found within the proposed sites and in general the sites lacked the rocky talus habitat favored by the species.

**Determination of effects:** The proposed project is **not likely to lead to loss of viability or contribute to a trend leading to federal protection** under the Endangered Species Act for *Delphinium purpusii*.

**Rationale for effects determination:** There are no known populations that would be directly affected. The plant is generally found in rocky areas where there would be low potential for effect. It is a perennial plant that would be identifiable during surveys even during drought years. The area of disturbance in any single location is relatively small such that seed reserves in the soil that would remain undisturbed if there were an inadvertent impact to an unknown population and recolonization would be likely

**Cumulative Effects Determination:** The contribution of the proposed action to cumulative effects on the above species is small in scale or proportion of potential habitat affected, intensity of the change. The areas are mostly in disturbed context and the proposed improvements will reduce off site impacts by providing toilet and garbage collection facilities with better and more focused access rather than the more diffuse and widespread impacts that currently exist. Primary cumulative effects derive from existing recreational use, grazing and wildfire. There are no proposed changes to these existing uses and there are reduced impacts from both this project and reduction of user created OHV trails in the Black Gulch North OHV trail restoration project.

## **Summary Of Determinations: Biological Evaluation**

It is my determination that the proposed action is not likely to lead to a trend toward federal listing under the Endangered Species Act for the following Forest Service sensitive species: SW pond turtle, hardhead minnow, yellow blotched ensatina, Kern Canyon slender salamander, Greenhorn Mtns.,

slender salamander, relictual slender salamander, California legless lizard, alkali mariposa lily, Mojave tarplant, Tracy's eriasterum, Shevock's false golden aster, and rose-flowered larkspur. A no effect determination is made for the federally protected species: sw willow flycatcher, western yellow-billed cuckoo, California condor, and Bakersfield cactus.

## MANAGEMENT INDICATOR SPECIES

Management Indicator Species (MIS) for the Sequoia NF are identified in the 2007 Sierra Nevada Forests Management Indicator Species (SNF MIS) Amendment (USDA Forest Service 2007a). The habitats and ecosystem components and associated MIS analyzed for this project were selected from the list of MIS indicated in the following table, which identifies the habitat or ecosystem components, CWHR type(s) defining each habitat/ecosystem component, associated MIS, and whether the MIS habitat is potentially affected by the project.

**Table 2: Project Level Selection of MIS**

Habitat or Ecosystem Component	CWHR Type(s) defining habitat or ecosystem component <sup>1</sup>	Sierra Nevada Forests MISs	Analysis Category <sup>2</sup>
Riverine & Lacustrine	lacustrine (LAC) and riverine (RIV)	aquatic macroinvertebrates	2
Shrubland (west-slope chaparral types)	montane chaparral (MCP), mixed chaparral (MCH), chamise-redshank chaparral (CRC)	fox sparrow <i>Passerella iliaca</i>	3
Oak-associated Hardwood & Hardwood/conifer	montane hardwood (MHW), montane hardwood-conifer (MHC)	mule deer <i>Odocoileus hemionus</i>	3
Riparian	montane riparian (MRI), valley foothill riparian (VRI)	yellow warbler <i>Dendroica petechia</i>	2
Wet Meadow	Wet meadow (WTM), freshwater emergent wetland (FEW)	Pacific tree frog <i>Pseudacris regilla</i>	2
Early Seral Coniferous Forest	ponderosa pine (PPN), Sierran mixed conifer (SMC), white fir (WFR), red fir (RFR), eastside pine (EPN), tree sizes 1, 2, and 3, all canopy closures	Mountain quail <i>Oreortyx pictus</i>	1
Mid Seral Coniferous Forest	ponderosa pine (PPN), Sierran mixed conifer (SMC), white fir (WFR), red fir (RFR), eastside pine (EPN), tree size 4, all canopy closures	Mountain quail <i>Oreortyx pictus</i>	1
Late Seral Open Canopy Coniferous Forest	ponderosa pine (PPN), Sierran mixed conifer (SMC), white fir (WFR), red fir (RFR), eastside pine (EPN), tree size 5, canopy closures S and P	Sooty (blue) grouse <i>Dendragapus obscurus</i>	1
Late Seral Closed Canopy Coniferous Forest	ponderosa pine (PPN), Sierran mixed conifer (SMC), white fir (WFR), red fir (RFR), tree size 5 (canopy closures M and D), and tree size 6.	California spotted owl <i>Strix occidentalis occidentalis</i>	1
		Pacific marten <i>Martes caurina</i>	
		northern flying squirrel <i>Glaucomys sabrinus</i>	
Snags in Green Forest	Medium and large snags in green forest	hairy woodpecker <i>Picoides villosus</i>	1
Snags in Burned Forest	Medium and large snags in burned forest (stand-replacing fire)	black-backed woodpecker <i>Picoides arcticus</i>	1

<sup>1</sup>All CWHR size classes and canopy closures are included unless otherwise specified; **dbh** = diameter at breast height; **Canopy Closure classifications:** S=Sparse Cover (10-24% canopy closure); P= Open cover (25-39% canopy closure); M= Moderate cover (40-59% canopy closure); D=

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Dense cover (60-100% canopy closure); **Tree size classes:** 1 (Seedling)( $<1''$  dbh); 2 (Sapling)( $1''-5.9''$  dbh); 3 (Pole)( $6''-10.9''$  dbh); 4 (Small tree)( $11''-23.9''$  dbh); 5 (Medium/Large tree)( $\geq 24''$  dbh); 6 (Multi-layered Tree) [In PPN and SMC] (Mayer and Laudenslayer 1988).

<sup>2</sup> **Category 1:** MIS whose habitat is not in or adjacent to the project area and would not be affected by the project.

**Category 2:** MIS whose habitat is in or adjacent to project area, but would not be either directly or indirectly affected by the project.

**Category 3:** MIS whose habitat would be either directly or indirectly affected by the project.

Approximately 4 acres of oak woodlands would be removed at the French gulch recreation mitigation site, however approximately 85 acres of suitable habitat would be created at south Fork Wildlife area and Black Gulch South. This effect would not be significant at the scales monitored. The indicator species for hardwood management, deer, would be excluded from use for 5 years to improve establishment. Shrub land habitat, with fox sparrow as the MIS, would also be improved on approximately 85 acres. This also would not be a significant effect. Approximately 4 acres of low shrub habitat would be removed on the Isabella Administrative Site, but the habitat is not west slope chaparral habitat suitable for fox sparrow and would be compensated in the vegetation mitigation sites. Planting of shrubs within the 85 acres of the vegetation mitigation sites may improve habitat for the fox sparrow, but generally would not be at high enough density to be highly suitable for this species or extensive enough to be significant at the scales monitored.

## **MIGRATORY BIRD TREATY ACT COMPLIANCE**

In 2008, a *Memorandum of Understanding between the USDA Forest Service and the US Fish and Wildlife Service to Promote the Conservation of Migratory Birds* was signed. The intent of the MOU is to strengthen migratory bird conservation through enhanced collaboration and cooperation between the Forest Service and the Fish and Wildlife Service as well as other federal, state, tribal and local governments. Within the National Forests, conservation of migratory birds focuses on providing a diversity of habitat conditions at multiple spatial scales and ensuring that bird conservation is addressed when planning for land management activities.

This project will not remove habitat elements for migratory land birds on the vegetation mitigation sites. The vegetation mitigation projects will improve habitat through increasing woodland cover, shrubs and conserving ground nesting opportunities. The Administrative relocation site at Isabella and the recreation mitigation sites at French Gulch, Old Isabella and South Fork Recreation Area will result in a total of approximately 10 acres of oak woodland and annual grass / low shrub habitat. With the exception of the administrative site at Isabella, the sites are heavily used recreation sites with low potential for nesting ground birds. Habitat disturbance should occur outside of the nesting season, March 1 to July 1, or be monitored by a biological monitor during disturbance of suitable nesting habitat. Compensation for the lost habitat has already been built into the project.

### **MAP A: Black Gulch South Vegetation Mitigation Site**

#### **Figure 3: Black Gulch South Mitigation Site**

### **MAP B: South Fork Wildlife Area Vegetation Mitigation Site**

#### **Figure 4: South Fork Wildlife Area Mitigation Site**



**MAP C: Isabella Administrative Site**

**Figure 5: Isabella Administrative Site**

**MAP D: Kernville Work Center Administrative Site**

**Figure 6: Kernville Work Center Administrative Site**

**MAP E: French Gulch Recreation Mitigation Site**

**Figure 7: *French Gulch Recreation Mitigation Site***

**MAP F: Old Isabella Recreation Mitigation Site**

**Figure 8: Old Isabella Recreation Mitigation Site**

**MAP G: South Fork Recreation Mitigation Site**

**Figure 9: South Fork Recreation Mitigation site**

## APPENDIX A: Species Considered in the Biological Evaluation

The following Pacific Southwest Region, USDA Forest Service, sensitive species and federally listed threatened, endangered and proposed species were reviewed for potential impacts. Species not addressed in detail are identified with a brief rationale for that determination.

**Table 3: Threatened Endangered, Proposed and Forest Service Sensitive Animals for the Sequoia National Forest.**

Common Name <sup>status</sup> <i>Scientific Name</i>	Habitat Requirements	Risk/Rationale
<b>Pallid bat</b> <sup>FS,SC</sup> <i>Antrozous pallidus</i>	Open habitats, rocky crevices, tree cavities, mines, caves, or buildings for maternity roosts. Deep crevices are important for day roosts	None, suitable habitat affected
<b>Townsend's. big eared bat</b> <sup>FS,SC</sup> <i>Corynorhinus townsendii townsendii</i>	Nocturnal, roosts in caves, uses wide variety of habitats although usually mesic areas for foraging	None, suitable habitat affected
<b>Tipton kangaroo rat</b> <sup>FE</sup> <i>Dipodomys nitratoides</i>	Alkali sinks and valley floor habitat	None, outside known historic range.
<b>California wolverine</b> <sup>FS,ST</sup> <i>Gulo luscus</i>	Remote habitats, sensitive to human presence. 4000' to 13,000' mixed habitats	None, no suitable habitat.
<b>Sierra marten</b> <sup>FS,SC</sup> <i>Martes caurina</i>	Dense forest >30% canopy cover, high number of large snags and down logs, close proximity to dense riparian corridors for movement, and an interspersions of small <1 acre openings with good ground cover for foraging. Potential occupied elevation 4,000-13,000 ft.	None, no suitable habitat.
<b>Pacific fisher</b> <sup>FS,SC, FC</sup> <i>Pekania pennanti</i>	Dense forest >40% canopy cover. High number of large snags and down logs, close proximity to dense riparian corridors for movement, and an interspersions of small <1 acre openings with good ground cover for foraging. Potential occupied elevation 3,500-8,500 ft.	None, no suitable habitat
<b>California bighorn sheep</b> <sup>FE</sup> <i>Ovis canadensis californiana</i>	Rugged mountain areas, mostly eastern Sierra with small historic range on western edge of Kern Drainage	None, outside known historic range.
<b>San Joaquin kit fox</b> <sup>FE</sup> <i>Vulpes macrotis mutica</i>	Valley floor annual grassland, alkali washes generally below 1,000'	None, outside historic range
<b>Sierra Nevada red fox</b> <sup>FS,ST</sup> <i>Vulpes vulpes necator</i>	Appears to prefer red fir and lodgepole forests in sub alpine and alpine zone. Forages in meadows & riparian zones. Mostly above 7,000'	None, outside known historic range.
<b>Northern goshawk</b> <sup>FS,SC</sup> <i>Accipiter gentiles</i>	Dense mixed conifer forest to open eastside pine	None, None. suitable habitat
<b>W yellow billed cuckoo</b> <sup>FE,SE, CH</sup> <i>Coccyzus americanus occidentalis</i>	Dense riparian forest. Only known from SFWA at Lake Isabella.	None, within proposed critical habitat but habitat and species not affected.
<b>SW Willow flycatcher</b> <sup>FE, CH</sup> <i>Empidonax trailii extimus</i>	Riparian forest and meadow with dense willow habitat and standing water.	None, within proposed critical habitat but habitat and species not affected
<b>Little Willow flycatcher</b> <sup>FS,SE</sup> <i>Empidonax trailii brewsterii</i>	Large meadow 15acre + complexes with dense willow and standing water, up to 8,000'	None, no suitable habitat
<b>American Peregrine Falcon</b> <sup>DL</sup> <i>Falco peregrinus anatum</i>	Cliff dwelling raptor associated with open habitats	No, None. suitable habitat affected
<b>California condor</b> <sup>FE</sup> <i>Gymnogyps californianus</i>	Mountain and foothill rangeland and forest habitats; nests on cliffs and in large trees.	None, outside known historic range.

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<b>Common Name</b> <sup>status</sup> <i>Scientific Name</i>	<b>Habitat Requirements</b>	<b>Risk/Rationale</b>
<b>Bald eagle</b> <sup>DL</sup> <i>Haliaeetus leucocephalus</i>	Lakes and open water; nests on large trees.	Low, wintering population in area.
<b>Great gray owl</b> <sup>FS,SC</sup> <i>Strix nebulosa</i>	Large meadows & openings 2,500 – 9,000'. Dense forest and large snags for nest area	None, outside known historic range.
<b>California spotted owl</b> <sup>FS,SC</sup> <i>Strix occidentalis occidentalis</i>	Dense forest >40% canopy closure, preference is shown for stands with ≥2 layers, but open enough to allow for observation and flying space to attack prey. Substantial amounts of dead woody debris are desirable.	None, outside known habitat.
<b>Least Bell's vireo</b> <sup>FE</sup> <i>Vireo bellii pusillus</i>	Riparian forest	None, rare visitor to adjacent habitat, no effect on habitat or species
<b>California legless lizard</b> <sup>FS</sup> <i>Anniella pulchra</i>	Loose, moist soil in chaparral and valley foothill woodland.	Low, within range, suitable habitat
<b>Southwestern pond turtle</b> <sup>FS</sup> <i>Actinemys marmorata</i>	Low gradient ponds and streams with basking sites. Can be found up to 1 mile from perennial water	Low, within range.
<b>Blunt-nosed leopard lizard</b> <sup>FE</sup> <i>Gambelia silius</i>	Open grassland, valley floor below 1,000'.	None, outside known historic range.
<b>Giant garter snake</b> <sup>FT</sup> <i>Thamnophis gigas</i>	Valley floor aquatic habitats	None, outside known historic range.
<b>Sierra night lizard</b> <sup>FS</sup> <i>Xantusia vigilis sierrae</i>	Annual grasslands near Granite Station, Kern County	None, outside known historic range.
<b>Inyo Mtn. slender salamander</b> <sup>FS, SC</sup> <i>Batrachoseps campi</i>	Down logs and moist areas	None, outside known historic range.
<b>Greenhorn Mtn s. salamander</b> <sup>FS,SC</sup> <i>Batrachoseps altasierrae</i>	Down logs and moist areas Lower Kern Cyn to Greenhorn Mtns.	Low, within potential range.
<b>Kern Cyn. slender salamander</b> <sup>FS,ST</sup> <i>Batrachoseps simatus</i>	Down logs and moist areas, below 3,500' Limited to Kern Canyon	Low, within potential range.
<b>Fairview slender salamander</b> <sup>FS</sup> <i>Batrachoseps bramei</i>	Down logs and moist areas, below 3,500' Limited to are around Fairview and Road's End	None, outside known historic range.
<b>Tehachapi slender salamander</b> <sup>FS</sup> <i>Batrachoseps stebbensii</i>	Down logs and moist areas, below 3,500'. Limited to canyon and desert areas Tehachapi to Caliente.	None, outside known historic range.
<b>Kern Plateau slender salamander</b> <sup>LI</sup> <i>Batrachoseps robustus</i>	Down logs and moist areas, ~7,000-8,000'. Limited to Kern Plateau	None, outside known historic range.
<b>Relictual slender salamander</b> <sup>FS</sup> <i>Batrachoseps relictus.</i>	Down logs and moist areas in the Breckenridge area.	Low, within range.
<b>Yellow blotched salamander</b> <sup>FS</sup> <i>Ensatina escholtzii croceator</i>	Valley foothill/hardwood habitats and conifer in the Breckenridge mtns. Moist habitats and down logs	Low, within potential range,
<b>California red-legged frog</b> <sup>FE</sup> <i>Rana aurora draytonii</i>	Low gradient streams and ponds with emergent vegetation	None, outside of known range
<b>Foothill yellow-legged frog</b> <sup>FS, SC</sup> <i>Rana boylei</i>	Low gradient streams and ponds generally below 6,000'	None, outside known range, potential habitat

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Common Name <sup>status</sup> <i>Scientific Name</i>	Habitat Requirements	Risk/Rationale
<b>Mountain yellow-legged frog</b> <sup>FE,SC</sup> <i>Rana muscosa</i>	4,500-12,000' aquatic habitats	None, outside known historic range.
<b>Delta smelt</b> <sup>*FT</sup> <i>Hypomesus transpacificus</i>	Limited connection to San Joaquin/Sacramento delta	None, outside known historic range.
<b>Hardhead minnow</b> <sup>FS, SC</sup> <i>Mylopharodon conocephalus</i>	Warm water rivers at low elevation	Low, may be downstream.
<b>California golden trout</b> <sup>FS, SC</sup> <i>Oncorhynchus mykiss aguabonita</i>	Cold water streams in SF Kern drainage	None, outside known historic range.
<b>Little Kern golden trout</b> <sup>FT</sup> <i>Oncorhynchus mykiss whitei</i>	Native to cold water streams in Little Kern Drainage	None, outside known historic range.
<b>Sacramento split-tail</b> <sup>FT</sup> <i>Pogonichthys macrolepidotus</i>	Limited to San Joaquin/Sacramento delta	None, outside known historic range.
<b>Vernal pool fairy shrimp</b> <sup>FT</sup> <i>Branhinecta lynchi</i>	Valley floor annual grassland, vernal pools generally below 1,000'	None, outside known historic range.
<b>Kern primrose sphinx moth</b> <sup>FT</sup> <i>Euproserpinus euterpe</i>	Valley foothill, oak woodland and chaparral associated with evening primrose. Range limited to Walker Basin area	None, outside known range.

Status Key:

FE Federally Endangered	FC Federal Candidate	SE State Endangered	SC State species of Concern
FT Federally Threatened	FS USFS Sensitive Species	ST State Threatened.	DL Delisted LI Local Interest

**Table 4: Threatened, Endangered and Forest Service Sensitive Plants, Kern River Ranger District.**

Common Name <i>Scientific name</i>	Habitat Type / Soils / Elevation	Risk/Rationale
<b>Walker Pass milk-vetch</b> <i>Astragalus ertterae</i>	Openings in pinyon-juniper, canyon oak woodlands. Dry sandy-loam, granitic soils. 5,600 to 6,200 ft.	None, outside range.
<b>Kern Plateau milk-vetch</b> <i>Astragalus lentiginosus</i> <i>var. kernensis</i>	Open flats around montane meadows with sagebrush and lodgepole pine. Dry sandy- gravel, granitic soils. 7,700 to 8,500 ft.	None, outside range.
<b>Shevock's milk-vetch</b> <i>Astragalus shevockii</i>	Pine needle duff in upper montane Jeffrey pine forest. Sandy, granitic soils. 6,100 to 6,700 ft	None, outside range.
<b>Hidden rockcress</b> <i>Boechea evadens</i>	Upper montane coniferous forest. Rocky soils. 2560 - 2850 meters.	None, outside range.
<b>Shevock's rockcress</b> <i>Boechea shevockii</i>	Upper montane coniferous forest. Granitic, rocky outcrop ledges. 2470 - 2500 meters	None, outside range.
<b>Tulare rockcress</b> <i>Boechea tularensis</i>	Subalpine coniferous forest, upper montane coniferous forest. Rocky slopes. 1825 - 3350 meters	None, outside range.
<b>scalloped moonwort</b> <i>Botrychium crenulatum</i>	Among thick grass and herbs in wet meadows. Moist fine sediment and peaty soils. 4,500 to 10,000 ft.	None, outside range.
<b>Mingan moonwort</b> <i>Botrychium minganense</i>	Mesic bogs and fens, lower montane coniferous forest, upper montane coniferous forest. 1455 - 2180 meters	None, outside range.
<b>western goblin</b> <i>Botrychium montanum</i>	Mesic, lower montane coniferous forest, meadows and seeps. Upper montane coniferous forest. 1465 - 2180 meters	None, outside range.
<b>Kaweah brodiaea</b> <i>Brodiaea insignis</i>	Grassy slopes of foothill blue oak woodland. Loamy clay soils in granitic substrate. 800 to 1,600 ft.	None, outside range.
<b>Bolander's bruchia</b> <i>Bruchia bolanderi</i>	Upper montane stream banks of small meandering creeks. Moist fine sediment and peaty soils. 6,500 to 9,500 ft.	None, outside range.
<b>Palmer's Mariposa Lily</b> <i>Calochortus palmeri var. palmeri</i>	Openings in montane coniferous forest, chaparral, and meadows, moist upland or meadow soils. 3,500 - 7,500'	None, outside range.
<b>Alkali mariposa lily</b> <i>Calochortus striatus</i>	Alkaline seeps, meadows and springs, moist creosote bush scrub moist fine alkaline soils. 2,600 - 4,600'	Low, known populations in vicinity of project.
<b>Shirley Meadow star-tulip</b> <i>Calochortus westonii</i>	Meadow edges or openings in mixed conifer/black oak woodland deep loamy or shallow rocky soils derived from granitics or metamorphics. 4,900 - 6,800'	None, outside range.
<b>pygmy pussypaws</b> <i>Calyptidium pygmaeum</i>	Subalpine coniferous forest, upper montane coniferous forest. Sandy or gravelly soils. 1980 - 3110 meters.	None, outside range.
<b>Pygmy poppy</b> <i>Canbya candida</i>	Openings in Joshua tree woodland and Mojave desert scrub dry sandy alluvial soils. 1,800 - 6,200'	None, outside range.
<b>Muir's raillardella</b> <i>Carlquistia muirii</i>	Openings in chaparral, ponderosa pine, or mixed coniferous forest granite ledges/cracks or gravelly/sandy flats. 3,600 - 8,200'	None, outside range.
<b>Bolander's woodreed</b> <i>Cinna bolanderi</i>	Mesic, stream sides, meadows and seeps, upper montane coniferous forest. 1670 - 2440 meters.	None, outside range.
<b>Kern Plateau bird's beak</b> <i>Cordylanthus eremicus ssp. kernensis</i>	P-j and Joshua tree woodland, upper montane coniferous forest. Steep rocky slopes in granitic or metamorphic substrate. 5,500 to 9,800 ft.	None, outside range.
<b>Rosette cushion cryptantha</b> <i>Cryptantha circumscissa rosulata</i>	Alpine boulder and rock field, subalpine coniferous forest. Gravelly (coarse), granitic soils. 2950 - 3660 meters	None, outside range.
<b>Tulare cyptantha</b> <i>Cryptantha incana</i>	Openings in lower mixed conifer forest & p-j woodland. Gravelly soils. 5,600 to 7,400 ft.	None, outside range.
<b>Mojave tarplant</b> <i>Deinandra mohavensis</i>	Desert edge chaparral and arid coastal slopes, mostly clay or silty soils. 2,800 to 5,250 ft.	None, outside range
<b>Unexpected larkspur</b> <i>Delphinium inopinum</i>	Open rock outcrops & ridges in conifer and red fir forest metamorphic substrates. Granite occasionally. . 5,500 - 9,000'	None, outside range.
<b>rose-flowered larkspur</b> <i>Delphinium purpusii</i>	Chaparral, cismontane woodland, pinyon and juniper woodland. Rocky, often carbonate soils. 300 - 1340 meters	Low, suitable habitat and known populations in vicinity of project.

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<b>Common Name</b> <i>Scientific name</i>	<b>Habitat Type / Soils / Elevation</b>	<b>Risk/Rationale</b>
<b>Tulare County bleedingheart</b> <i>Dicentra nevadensis</i>	Sandy, gravelly slopes or crevices in lodgepole & sub-alpine forest. Decomposed granite soil. 7,500 to 10,000 ft.	None, outside range.
<b>Mineral King draba</b> <i>Draba cruciata</i>	Subalpine coniferous forest, gravelly soils. 2500 - 3315 meters.	None, outside range.
<b>Pierpoint Springs dudleya</b> <i>Dudleya cymosa ssp. costafolia</i>	Rock outcrops within in canyon live oak woodland & chaparral. Metamorphic carbonate substrate (limestone & marble). 4,800 to 5,200 ft.	None, outside range.
<b>Tracy's eriastrum</b> <i>Eriastrum tracyi</i>	Chaparral, cismontane woodland. 315 - 1645 meters	Low, Occupied habitat within the range of the species in project vicinity
<b>Hall's daisy</b> <i>Erigeron aequifolius</i>	Steep, rocky, crevices in conifer forest & p-j woodland. Granitic substrate (carbonate or basalt occasionally). 5,200 to 8,000 ft.	None, outside range.
<b>Kern River daisy</b> <i>Erigeron multiceps</i>	Dry meadow edges in mixed conifer or aspen forest. Granitic gravelly banks and sandy flats. 5,000 to 8,400 ft.	None, outside range.
<b>Piute buckwheat</b> <i>Eriogonum breedlovei var. breedlovei</i>	Rock outcrops in mixed conifer forest and p-j woodland carbonate bedrock. Limestone or marble. Occasionally schist. 6,200 - 8,500'	None, outside range.
<b>Kings River buckwheat</b> <i>Eriogonum nudum var. regirivum</i>	Cismontane woodland. Carbonate, rocky soils. 150 - 300 meters.	None, outside range.
<b>Monarch buckwheat</b> <i>Eriogonum ovalifolium var. monarchense</i>	Mojave desert scrub, pinyon and juniper woodland. Decomposed carbonate, rocky or sandy soils. 1800 - 1815 meters	None, outside range.
<b>Twisselmann's buckwheat</b> <i>Eriogonum twisselmannii</i>	Rocky openings Jeffrey pine-red fir forests. Shallow rocky soil derived from metamorphic and granitic substrate. 7,800 to 9,200 ft.	None, outside range.
<b>Kaweah Lakes fawn-ly</b> <i>Erythronium pusaterii</i>	Rock fields, ledges, and steep canyon walls in montane conifer forest. Outcrops and talus fields of metamorphic rock (granite occasionally). 7,300 to 9,100 ft.	None, outside range.
<b>Greenhorn fritillary</b> <i>Fritillaria brandegeei</i>	Lower montane coniferous forest. Granitic soils. 1415 - 2100 meters	None, outside range
<b>Striped adobe lily</b> <i>Fritillaria striata</i>	Open areas in grassland and blue oak woodland pockets or islands of heavy adobe clay. Granitic or metamorphic. . 500 - 4,100 ft.	None, no adobe clay soils observed in project vicinity.
<b>Kern Cyn. false goldenaster</b> <i>Heterotheca shevockii</i>	Rock crevices, and sandy bars in river forest & foothill woodland rock outcrop or sandy, gravelly soils below the 100-year floodplain. 750 - 3,000'	Low, known in analysis area
<b>Water fan lichen</b> <i>Hydrothyria venosa</i>	Attached to rocks in small streams within montane coniferous forest streams that are fed by cold springs and/or groundwater. 5,000 - 8,000 ft.	None, no riparian habitat affected
<b>Kern Plateau horkelia</b> <i>Horkelia tularensis</i>	Rocky soils in montane conifer forest (Jeffrey pine & western juniper). Soils with surface rocks in metamorphic (gabbro & schist) substrate. 7,500 to 9,450 ft	None, outside range.
<b>Short-leaved hulsea</b> <i>Hulsea brevifolia</i>	Openings in lower and upper montane conifer forest. Soils formed in decomposed granite or volcanic pumice. 4,900 to 10,500 ft.	None, outside range.
<b>Pygmy hulsea</b> <i>Hulsea vestita ssp. pygmaea</i>	Alpine boulder and rock field, subalpine coniferous forest. Granitic, gravelly soils. 2835 - 3900 meters	None, outside range.
<b>Munz's iris</b> <i>Iris munzii</i>	Cismontane woodland in Tulare County (primarily Tule river drainage). 305 - 800 meters	None, outside range.
<b>Madera leptosiphon</b> <i>Leptosiphon serrulatus</i>	Cismontane woodland, lower montane coniferous forest. 300 - 1300 meters. Kern to Madera counties, north of Alta Sierra	None, outside range.
<b>Congdon's lewisia</b> <i>Lewisia congdonii</i>	Rocky cliffs and ledges within chaparral and conifer forest. Rock, talus and sand derived from granite or metamorphic rock. 1,650 to 9,200 ft.	None, outside range.
<b>Yosemite lewisia</b> <i>Lewisia disepala</i>	Gravel shelves in rock outcrops within conifer forest. Decomposed granite deposits. 3,400 to 11,500 ft.	None, outside range.
<b>Hockett Meadows lupine</b> <i>Lupinus lepidus var. culbertsonii</i>	Rocky slopes from 2500-3000 meters	None, outside range.
<b>broad-nerved hump-moss</b> <i>Meesia uliginosa</i>	Primarily spring-fed, short-grass meadows that are permanently wet	None, outside range.
<b>elongate copper moss</b> <i>Mielichhoferia elongata</i>	Cismontane woodland (metamorphic, rock, usually vernal mesic). 500 - 1300 meters (Tulare County north)	None, no suitable habitat, not in known range

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<b>Common Name</b> <i>Scientific name</i>	<b>Habitat Type / Soils / Elevation</b>	<b>Risk/Rationale</b>
<b>Shevock's copper moss</b> <i>Mielichhoferia shevockii</i>	Cismontane woodland (metamorphic, rock, mesic). 750 - 1400 meters. Location near Hospital flat	None, not in range, no suitable habitat
<b>two-colored monkey flower</b> <i>Mimulus discolor</i> (AKA <i>M. montoides</i> )	Yellow pine forest, red fir forest, lodgepole forest, subalpine forest, pinyon-juniper woodland. Disturbed areas along small streams, generally in granitic soils;> 1800 m.	None, outside range.
<b>slender stalked monkey flower</b> <i>Mimulus gracilipes</i>	Disturbed or burned areas on decomposed granite; 500–1300 m. C Sierra Nevada foothills.	Low, Suitable habitat within the range of the species
<b>Kaweah monkey flower</b> <i>Mimulus norrisii</i>	Marble crevices; 600–1300 m. S Sierra Nevada foothills (Kaweah River drainage, Tulare co.).	None, outside range.
<b>Kelso Creek monkey flower</b> <i>Mimulus shevockii</i>	Openings in Joshua tree and p-j woodlands alluvial coarse sandy-loam and loose sandy gravels. 2,800 - 4,200'	None, outside range.
<b>sweet-smelling monardella</b> <i>Monardella beneolens</i>	Rocky granitic or metamorphic slopes in open conifer forest; 2500–3600 m. S high Sierra Nevada.	None, outside range.
<b>Flax-like monardella</b> <i>Monardella linoides</i> ssp. <i>oblonga</i>	Sandy open areas in ponderosa pine forest decomposed granite and metamorphic substrates. 3,000 - 8,100'	None, outside range.
<b>Baja navarretia</b> <i>Navarretia peninsularis</i>	Wet areas within chaparral and ponderosa pine forest saturated sandy soil along small creeks, meadows, and snowmelt seeps.. 4,900 - 7,550'	None, outside range.
<b>Piute Mountains navarretia</b> <i>Navarretia setiloba</i>	Openings in oak woodland and p-j woodlands heavy clay soils. 2,000 - 3,800'	No, wrong soil, outside known range
<b>Chimney Creek nemacladus</b> <i>Nemacladus calcaratus</i>	Decomposed granite flats; 1900–2100 m. S high Sierra Nevada (chimney creek).	None, outside range.
<b>Twisselman's nemacladus</b> <i>Nemacladus twisselmannii</i>	Arid, decomposed granitic gravels and sands on ridgetops and rock outcrops in open Jeffrey pine forests, from 7,300 to 7,800 feet	None, outside range.
<b>Bakersfield cactus</b> <i>Optunia basilaris</i> var. <i>treleasei</i>	Openings in oak woodland and chaparral dry sandy soils or rock outcrops. 300 - 3,000 ft.	None, outside range.
<b>San Joaquin adobe sunburst</b> <i>Pseudobahia peirsonii</i>	Valley grassland or oak woodland heavy adobe clay derived from metamorphic substrate. Ophiolite. 600 - 2,000 ft.	None, outside range.
<b>purple mountain-parsley</b> <i>Oreonana purpurascens</i>	Ridgetops and rock outcrops and in gravelly openings of decomposed granitic or metamorphic soils in red fir forests, approximately 7,900 to 9,400 ft.	None, outside range.
<b>woolly mountain-parsley</b> <i>Oreonana vestita</i>	Ridge tops; 1670–3500 m. San Gabriel mountains, San Bernardino mountains.	None, outside range.
<b>veined water lichen</b> <i>Peltigera gowardii</i>	Aquatic, usually on rock submerged in cool mountain streams.	None, outside range.
<b>marble rockmat</b> <i>Petrophyton caespitosum</i> ssp. <i>acuminatum</i>	Montane coniferous forest, on carbonate or granitic, rocky substrates or limestone cliffs from 1200 to 2300 meters.	None, outside range.
<b>Nine Mile Canyon phacelia</b> <i>Phacelia novenmillensis</i>	Dry, disturbed banks and gravelly, rocky, shallow soils in Jeffrey pine and pinyon-juniper woodland. 5400 to 8300 ft.	None, outside range.
<b>Whitebark pine</b> <i>Pinus albicaulis</i>	Upper red-fir forest to timberline, especially subalpine forest; 2000–3700 m., high cascade, Klamath and sierra ranges to British Columbia and east of Sierra Nevada.	None, outside range.
<b>Latimer's woodland-gilia</b> <i>Saltugilia latimeri</i>	Dry desert slopes, coarse sand to rocky soils; 400–1900 m. Transverse ranges, peninsular ranges, desert.	None, outside range.
<b>Keck's checkerbloom</b> <i>Sidalcea keckii</i>	Serpentine soils in blue oak woodlands and grasslands at 600 to 2,000 ft.	None, outside range.
<b>white-margined starry puncturebract</b> <i>Sidotheca emarginata</i>	Gravel; 1200–2500 m. E peninsular ranges (san Jacinto mountains, Santa Rosa mtns., riverside co.).	None, outside range.
<b>Piute Mtns. jewel-flower</b> <i>Streptanthus cordatus</i> var. <i>piutensis</i>	Cliffs and disturbed areas within p-j woodland, heavy red clay soil soils in meta-volcanic or gabbro substrate. 3,600 - 5,700'	None, outside range.

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Common Name <i>Scientific name</i>	Habitat Type / Soils / Elevation	Risk/Rationale
<b>Tehipite Valley jewel-flower</b> <i>Streptanthus fenestratus</i>	Carbonate and granite ledges, sand, open mixed-conifer/oak woodland; 1050–1800 m. S high Sierra Nevada (kings river canyon, Fresno co.), middle kings river canyon from 2,000 to 5,000 ft.	None, outside range.
<b>Alpine jewel-flower</b> <i>Streptanthus gracilis</i>	Rocky slopes; 2600–3600 m. Se high sierra Nevada (kings-kern divide region).	None, outside range.
<b>Bay horsehair lichen</b> <i>Sulcaria badia</i>	Endemic to the pacific northwest, known only from thirteen historic and contemporary localities in the united states; in Washington, Oregon and northern California. None of the known localities is further than 85miles from the ocean.	None, likely mistake in listing for Sequoia NF.
<b>Howell's tauschia</b> <i>Tauschia howellii</i>	Granitic gravel, ridge tops, <i>abies</i> forest; 2000–2500 m. Klamath ranges (Salmon Mtns), n high sierra Nevada; southern Oregon.	None, likely mistake in listing for Sequoia NF.
<b>Coastal triquetrella</b> <i>Triquetrella californica</i>	Known only from scattered localities near the coast, southwestern Oregon to southern California. Forms loose mats on exposed to shaded soil, rocks, sand, or gravel in dry or moist situations within 10 miles of the coast. Plant associations range from <i>Pinus contorta</i> and grassland at the north to dense chaparral on north-facing slopes at the southern end of its range.	None, likely mistake in listing for Sequoia NF.