

RECLAMATION

Managing Water in the West

Environmental Assessment

Dike 1 Modification Project

**Central California Area Office
Folsom, CA**

November 2014



**U.S. Department of the Interior
Bureau of Reclamation
Mid Pacific Region
Central California Area Office
Folsom, California**

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Mission Statements

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

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

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List of Acronyms and Abbreviations

APE	Area of Potential Effect
BMP	Best Management Practices
CAA	Clean Air Act
CFR	Code of Federal Regulations
CLSM	Controlled Low Strength Material
CO ₂	Carbon dioxide
CWA	Clean Water Act
EA	Environmental Assessment
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FWCA	Fish and Wildlife Coordination Act
GHG	greenhouse gases
HDPE	High Density Polyethylene
ITA	Indian Trust Asset
M&I	Municipal and Irrigation
MBTA	Migratory Bird Treaty Act
MPCO	Mid Pacific Contracting Office
NAAQS	National Ambient Air Quality Standards
National Register	National Register of Historic Places
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO _x	Nitrogen Oxide
PAO	Provo Area Office
PCAPCD	Placer County Air Pollution Control District
PM	Parts per Million
Reclamation	Bureau of Reclamation
ROG	Reactive Organic Gases
RWQCB	Regional Water Quality Control Board
Service	U.S. Fish and Wildlife Service
SIP	State Implementation Plan
SRWQCB	Sacramento Regional Water Quality Control Board
State Parks	California Department of Parks and Recreation
SVAB	Sacramento Valley Air Basin
SWPPP	Storm Water Pollution Prevention Plan
TSC	Technical Service Center
USACE	U.S. Army Corps of Engineers
VOC	Volatile Organic Compounds

Section 1 Introduction

Folsom Lake is located in Sacramento, Placer, and El Dorado Counties, California. Folsom Lake has been a popular recreational use area since the completion of Folsom Dam. This lake is popular for fishing, boating, picnicking, and camping uses. Folsom Lake has a capacity of 1,000,000 acre feet of water.

In conformance with the National Environmental Policy Act of 1969 (NEPA), as amended, the Bureau of Reclamation (Reclamation) has prepared this Environmental Assessment (EA) to evaluate and disclose any potential environmental impacts associated with the Dike 1 Modifications Project actions in the Granite Bay State Park at Folsom Lake.

1.1 Project Background

The Dike 1 Modification is a portion of the Folsom Dam Safety project that was approved in 2005. Since 2005, Reclamation has been conducting field investigations of Dike 1. On June 15, 2010, seepage was observed exiting from downstream (non lake side) of Dike 1 and Reclamation's Technical Service Center (TSC) was called to investigate the cause of the seepage. Following a review of the field investigations, a review of records, and an inspection of Dike 1, the TSC concluded that the seepage is likely occurring through the foundation and is being collected by the downstream horizontal blanket drain and exiting onto the ground surface at the toe.

1.2 Purpose of the Proposal

The purpose of this project is to ensure the safety of the public. In order to protect public health and safety, this project is necessary in order to correct Dike 1's potential for failure. Recent risk analyses conducted for the 2012 Comprehensive Review indicated increasing justification to reduce risk at Dike 1. The most significant failure mode is internal erosion under flood loading conditions, or the susceptibility of the dike to fail though increased seepage during flooding. Modification of Dike 1 by constructing a downstream overlay with sand chimney filter and toe drain would mitigate this risk.

1.3 Potential Issues

This EA will analyze the affected environment of the Proposed Action and No Action Alternative in order to determine the potential direct, indirect, and cumulative effects to the following resources:

- Water Resources
- Recreation/Land Use
- Biological Resources
- Cultural Resources
- Air Quality
- Traffic

Section 2 Alternatives Including the Proposed Action

This EA considers two possible actions: the No Action Alternative and the Proposed Action. The No Action Alternative reflects future conditions without the Proposed Action and serves as a basis of comparison for determining potential effects to the human environment.

2.1 No Action Alternative

The No Action Alternative is the alternative that assumes no federal action would be taken to correct the potential failure of Dike 1. The potential would remain for Dike 1 to fail due to internal erosion under flood loading conditions, and the susceptibility of the dike to fail though increased seepage during flooding would remain.

2.2 Proposed Action

The Proposed Action Alternative is the alternative that assumes action would be taken in order to prevent Dike 1 from failing due to internal erosion under flood loading conditions, and the susceptibility of the dike to fail though increased seepage during flooding.

The total area of potential effect for the project is approximately 13 acres, including construction area, staging, access, and haul road (see Figure 1). In mid-December, 2014, approximately 15,000 cubic yards of sand and gravel would be stockpiled in a State Parks overflow parking area that is adjacent to Dike 1. Delivery of the material would be coordinated with State Parks. All construction work would be performed by Reclamation employees from the Provo Area Office (PAO). PAO would mobilize beginning in mid-January, 2015, and construction would be completed in mid-April, 2015.

The Provo Force Account crew works in 10-day shifts, with the first and last day of each shift reserved for travel. Provo has estimated seven 10-day shifts to complete the work, with an eighth shift reserved for contingency.

Proposed Schedule	
12/1/2014	Materials contracts awarded
12/15/2014	Staging area prepped by Mid Pacific Contracting Office (MPCO), sand deliveries begin
1/13/2015	PAO crew arrival onsite
1/13 – 1/22 (shift 1)	Material deliveries, Best Management Practices (BMP) installation, haul road construction, vegetation removal, stripping existing embankment material.
1/27 - 2/5 (shift 2)	Toe drain excavation, pipe installation, manhole installation.
2/10 – 2/19 (shift 3)	Outfall construction, weir box construction,

	installation of manhole covers, ladder, and associated metalwork
2/24 – 4/2 (shifts 4, 5, 6)	Chimney filter and berm construction
4/7 – 4/16 (shift 7)	Place slope protection, pave crest and toe roads with surface course, cleanup, demobilize
4/21 – 4/30 (shift 8)	Contingency for schedule slip.

Table 1. Proposed Construction Milestone Schedule

Minor vegetation removal would be necessary and would include trimming of trees and tree removal to permit equipment access. Vegetation 4-inches in diameter and smaller would be chipped and broadcast. Vegetation larger than 4-inches in diameter would be cut into rounds and placed in the staging area for State Parks to use at a later date.

On the downstream face and toe of the dike, the slope protection material and riprap would be removed, and the natural ground would be stripped approximately 1 foot deep in order to expose a clean surface and allow for the placement of fill materials. A 5-foot by 5-foot box trench would then be excavated along the downstream (non-lake side) toe of the dike, and a 12-inch perforated high density polyethylene (HDPE) pipe surrounded by a filter sand and gravel drain envelope would be installed in the trench. A 3-foot by 3-foot trench would be excavated in the drainage outfall located midway along Dike 1.

After the toe drain trench has been backfilled, PAO would apply a 4-foot wide layer of sand along the face of the Dike 1 embankment to act as a natural filter, and then apply an 8-foot wide berm layer of miscellaneous fill to hold the sand in place. Construction of the sand filter and berm would start at the downstream toe, and progress toward the crest. Both the sand filter and berm would be placed and compacted into 12-inch lifts. The height of the sand filter would be approximately 2-feet above the berm as the embankment progresses from the toe to the crest. Sand would be placed with a loader, or excavator, and compacted with a smooth drum roller. Miscellaneous fill would be spread with a dozer and compacted with a pad-foot roller. Initially, the lower portion of the berm would be wider than the specified 8-feet to facilitate equipment access. As the berm rises in elevation, the lower portion would be trimmed with the dozer and excess material would be pushed to the working elevation where it will be spread and compacted. Following construction of the chimney filter and berm, the original 1 foot of material that was stripped from the face of the dike would be reapplied to the downstream face of Dike 1. A 20-foot wide gravel-surfaced maintenance road would be constructed along the newly expanded toe of Dike 1. At the completion of the project, the crest of the dike would be 12-feet wider than the original crest, for a total width of 33-feet. Road base would be placed on the surface of the newly widened crest, creating a 12-foot wide shoulder on the downstream side. The existing asphalt roadway would remain.

In order to perform this work, PAO would need to manage public traffic across the crest of Dike 1. A 20-foot wide haul road, approximately 900 feet in length, would be constructed from the staging area to the south end of the dike (see Figure 1). The haul road would be surfaced with 6 inches of compacted road base and lined with orange construction fencing for public safety. The alignment would follow an existing trail located on the upstream side of Park Road. The haul road would intersect Park Road at the southern end of the dike (left abutment). Construction traffic would

cross the asphalt road at this location and continue to the work area on the downstream face of Dike 1.

At the conclusion of construction, the haul road would be removed and the area restored to pre-project conditions. When not in use, equipment would be stored at the staging/stockpile area, along with a construction trailer. In order to protect the equipment and construction trailer from vandalism, temporary chain link fencing with a gate would be installed around the equipment storage area.

The following equipment will be used for construction by PAO:

- Cat CP32 vibratory compactor
- Caterpillar D6 Dozer
- Caterpillar 330DL tracked excavator
- Caterpillar 966 Loader
- 2 Caterpillar 725 articulated haul trucks
- 4,000 gallon water truck
- HDPE butt-fusion welding machine
- Portable plate compactor

Additionally, the aggregate vendor would make deliveries to the site with dump truck and pup trailers, or belly dump semi-trailers. Concrete and controlled low strength material (CLSM) would be delivered to the site with a front discharge concrete mixing truck. The site would be accessed via the main entrance to the Granite Bay State Park, or if emergency necessitates, from the north via Twin Rocks Road and Folsom Park Road. Construction would take place 7 days a week, from 7:00am to 6:00pm.

Water for dust control will be trucked from the Granite Bay boat launch. In the event that severe drought dewater the lowest launch ramp, an alternative location to access the water may be determined.

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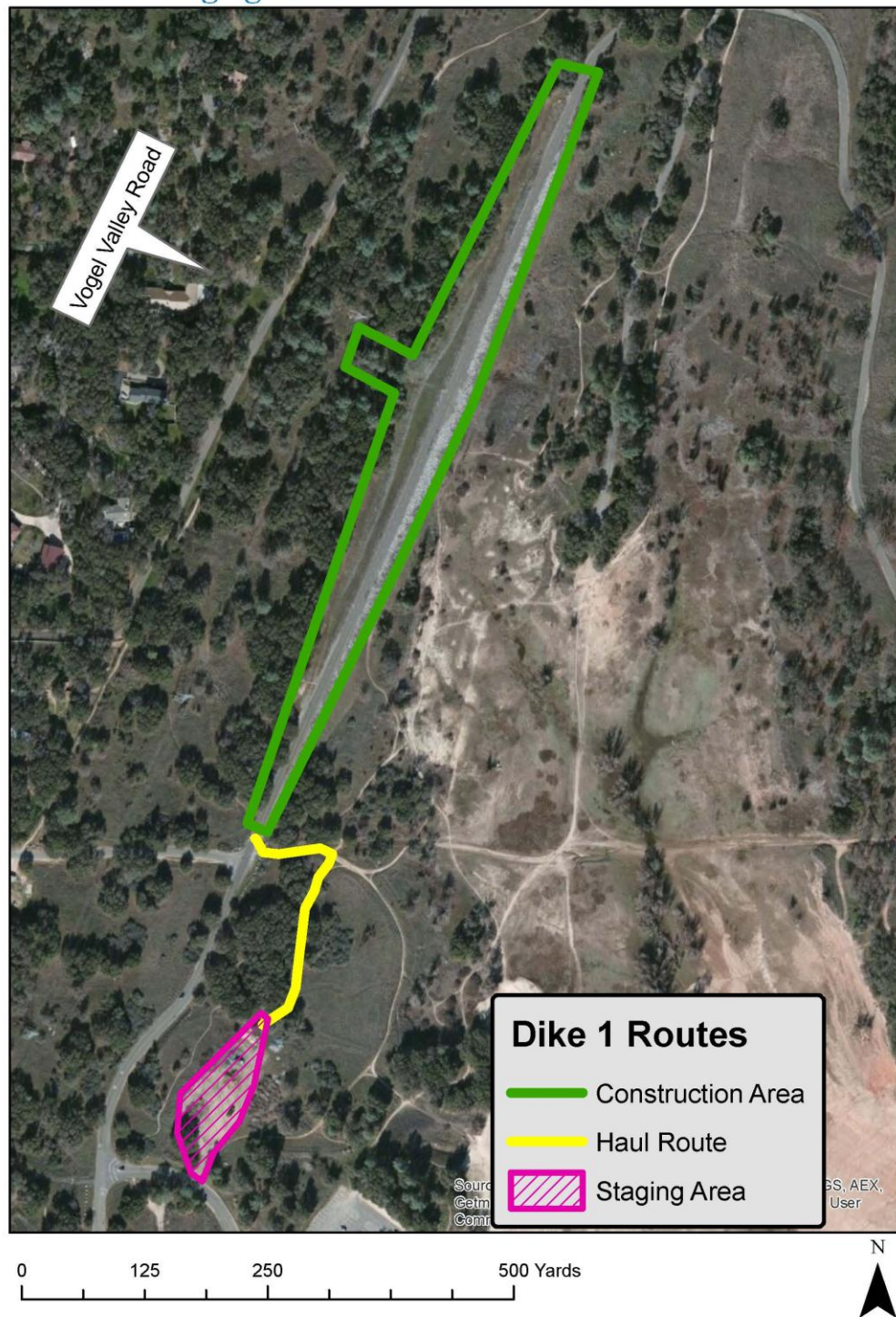


Figure 1-Construction, Staging and Haul Routes

Section 3 Affected Environment and Environmental Consequences

This section identifies the potentially affected environment and the environmental consequences involved with the Proposed Action and the No Action Alternative, in addition to environmental trends and conditions that currently exist.

Indian Trust Assets – Indian Trust Assets (ITAs) are legal interests in property or rights held in trust by the United States for Indian Tribes on individual Indians. Indian reservations, Rancherias, and Public Domain Allotments are common ITAs in California. The Proposed Action does not have a potential to affect Indian Trust Assets.

Indian Sacred Sites – Sacred sites are defined in Executive Order 13007 (May 24, 1996) as “any specific, discrete narrowly delineated location on Federal land that is identified by an Indian tribe, or Indian individual determined to be on appropriately authoritative representative of an Indian religion, as sacred by virtue of its established religious significance to, or ceremonial use by, an Indian religion; provided that the tribe or appropriately authoritative representative of an Indian religion has informed the agency of the existence of such a site.” The Proposed Action does not have a potential to affect Indian Sacred Sites.

Environmental Justice – Executive Order 12898 requires each Federal agency to identify and address disproportionately high and adverse human health or environmental effects, including social and economic effects of its program, policies, and activities on minority populations and low-income populations. There would be no impact to any populations; therefore, there would be no adverse human health or environmental effects to minority or low-income populations.

Global Climate Change--Climate change refers to significant change in measures of climate (e.g., temperature, precipitation, or wind) lasting for decades or longer. Many environmental changes can contribute to climate change, changes in sun’s intensity, changes in ocean circulation, deforestation, urbanization, burning fossil fuels, etc. (EPA 2011a). Due to the temporary nature of this slope stabilization project, no significant changes in measures of climate are expected to occur as a result of repairing the slope.

3.1 Water Resources

3.1.1 Affected Environment

Folsom Lake has a capacity of 1,000,000 acre feet of water. Folsom Dam regulates runoff from approximately 1,875 square miles. The lake provides flood protection for the Sacramento area; water supply for irrigation, domestic, municipal, and industrial uses; and hydropower. The maximum crest elevation for Folsom Lake is 480.5 feet, however Reclamation operates the lake at a maximum elevation volume of 466 feet, which is considered the ordinary high water elevation.

In years with normal precipitation, water is held against Dike 1 at elevation 466 feet, which causes seepage to occur downstream of the Dike, creating a wet area. The last time water was held against Dike 1 was in 2012. The U.S. Fish and Wildlife Service (Service) conducted a wetland survey of the site on April 18, 2014, and identified several wetland features. The report, *July 2014 Wetland Delineation Report for the Folsom Dam Safety and Flood Damage Reduction Project*, is included as Appendix A.

3.1.2 Environmental Consequences

No Action

Under the No Action Alternative, water resources would remain unchanged in the area.

Proposed Action

Under the Proposed Action, Reclamation would construct a downstream overlay with sand chimney filter and toe drain. “Downstream” refers to the side of the Dike that the reservoir does not touch. Material would be delivered from off-site and staged and stockpiled in the area identified in Figure 1 as ‘staging area’, a haul road would be constructed from the stockpile to the downstream side of Dike 1, vegetation would be removed, the existing embankment would be stripped and stockpiled, the toe drain would be excavated, the outfall, chimney and berm would be constructed, and the original embankment would be replaced.

The proposed project has the potential to adversely impact water quality with contaminated construction storm water run-off. In order to mitigate for this potential, Reclamation will obtain a Storm water Construction General Permit from the Sacramento Regional Water Quality Control Board (Water Board) prior to material delivery and stockpiling and implement a Storm Water Pollution Prevention Plan (SWPPP) to prevent contaminated storm water from leaving the project site.

One 0.0149 acre wetland feature was identified within the construction zone for the proposed project. This wetland feature is the existing drainage for the seepage that is currently exiting Dike 1. In order to safely control the drainage of water from Dike 1, Reclamation would need to excavate in this wetland feature, which would result in the loss of 0.0149 acres of waters of the United States. Prior to the start of work which may impact the wetland feature, Reclamation will obtain a Clean Water Act (CWA) Section 404 permit from the U.S. Army Corps of Engineers (USACE), a CWA Section 401 Water Quality Certification from the Water Board, and mitigate for any wetland impacts. As mitigation for the loss of this feature, Reclamation would purchase up to 0.0596 acres (four times the amount impacted) of mitigation credits from a USACE and Service approved wetland mitigation bank, depending on the mitigation recommendations USACE would issue with the CWA Section 404 permit, therefore the proposed project is not likely to adversely affect water resources.

Cumulative Impacts

Cumulatively, the loss of waters of the United States may have impacts to water quality in general, however the wetland feature that has been identified within the project site is highly degraded and is not likely to provide ecologic benefit to the area. To ensure that water resources are not cumulatively impacted as a result of the project, Reclamation would purchase mitigation credits to ensure that there is no net loss to the total acreage of waters of the United States.

3.2 Recreation/Land Use

3.2.1 Affected Environment

The lands in the Granite Bay recreation area are owned by Reclamation and operated by the California Department of Parks and Recreation (State Parks).

The water level at Folsom Lake dictates the type of recreation and length of the season. During years with normal precipitation the main recreational season is May through Labor Day in September. During the remaining months of the year use of Folsom Lake drops considerably. The desired reservoir elevation for recreation is approximately 435 feet to 455 feet. Above 455 feet, fewer beaches are available for swimmers and sunbathers, and below 435 feet the waterline is too great a distance from parking areas. Another problem with lower lake levels is that, at 426 feet, boat ramps around the lake go out of service, and the only marina at the lake cannot moor most boats when the lake level is below an elevation of 412 feet.

The lake and the Granite Bay recreation area offer opportunities for hiking, biking, running, camping, picnicking, horseback riding, water-skiing and boating. Fishing offers trout, catfish, big and small mouth bass or perch.

The drainage downstream of Dike 1 is currently closed to public access with orange construction fencing to protect seepage monitoring equipment at that location. Access to the northern half of the Granite Bay State Park is via Park Road, a paved, two-lane road that runs across the crest of Dike 1.

3.2.2 Environmental Consequences

No Action

Under the No Action recreational use would continue unchanged at Granite Bay recreation area.

Proposed Action

The Proposed Action would require that Reclamation manage public traffic and recreation access across the crest of Dike 1. A 20-foot wide haul road, approximately 900 feet in length, would be constructed from the staging area to the south end of the dike as shown in Figure 1. The haul road would be surfaced with 6 inches of compacted road base and lined with orange construction fencing for public safety. The alignment would follow an existing trail located on the upstream side of Park Road. The haul road would intersect Park Road at the southern end of the dike (left abutment) as shown in Figure 1. Construction traffic and recreationalists would cross the asphalt road at this location and continue to the work area on the downstream face of Dike 1. A full-time flagger would be provided by Reclamation to manage traffic at the intersection. Park Road would remain open to two-lane traffic while construction is taking place on the downstream toe of the dike. As the downstream berm rises in elevation, the active construction area would move closer to the crest road. This would require the crest road to be reduced to one lane of traffic in order to provide a safety buffer between the construction area and public traffic. A second flagger on the north end of the dike (right abutment) would be provided by Reclamation while construction is taking place near and on the crest and the roadway is reduced to one lane. Reflective vertical panels and appropriate signage would be provided and placed by Reclamation to delineate the

roadway into one lane. It is anticipated that construction near and on the crest and the accompanying lane closure would be completed in one 10-day shift. Because construction would not impact the existing asphalt roadway, two-lane traffic would be allowed across the crest when construction crews are off- shift. Park Road is closed at night and would not require traffic control during nighttime hours. At the conclusion of construction, the haul road would be removed and the area restored to pre-project conditions.

The majority of the proposed project would take place in the area downstream of Dike 1. There are no trails in the area immediately downstream of Dike 1, therefore there would be no disruptions to recreation in that area. The perimeter of the construction site would be fenced with orange construction fencing to ensure that the construction limits are clearly delineated to the public.

These measures, combined with low visitation to Granite Bay recreation area in the winter months and the temporary nature of the proposed action, would result in only de minimus impacts to recreation and land use in the Granite Bay recreation area.

Cumulative Impacts

Impacts to recreation and land-use will be temporary -lasting only from December 2014, to April 2015. No other projects have been identified that would impact recreation at Granite Bay recreation area during this time period. No adverse cumulative impacts are therefore expected.

3.3 Biological Resources

3.3.1 Affected Environment

Special status species possible in the project area and on the U.S. Fish and Wildlife Service Federal Endangered and Threatened species list as of October 17, 2014, for the Rocklin quadrangle include threatened valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), threatened California red-legged frog (*Rana draytonii*), threatened giant garter snake (*Thamnophis gigas*), threatened vernal pool fairy shrimp (*Branchinecta lynchi*), and endangered vernal tadpole shrimp (*Lepidurus packardii*).

3.3.2 Environmental Consequences

No Action

Under the No Action Alternative, the status and presence of biological resources, including special-status species, would remain unchanged in the area.

Proposed Action

Reclamation has analyzed the potential for the project to affect listed species and has determined that there will be no effect on the vernal pool fairy shrimp, vernal pool tadpole shrimp, and giant garter snake as there is no habitat for these species within the action area. Additionally, there is no critical habitat designated within the action area that could be directly or indirectly impacted by the proposed action. Reclamation has also determined that the proposed action is not likely to adversely affect valley elderberry longhorn beetle or California red-legged frog and additional information on those determinations follows.

The valley elderberry longhorn beetle occurs in riparian woodlands, where it feeds on the pith and leaves of blue elderberry (*Sambucus mexicana*) shrubs. The presence of exit holes on the stems of the elderberry shrubs may indicate the presence of the valley elderberry longhorn beetle. A cluster of 3 elderberry shrubs was observed during the April 18, 2014 surveillance survey adjacent to an existing road accessing the top of Dike 1 by Ms. Amber Aguilera, a qualified Service Biologist and Douglas Weinrich, Chief of the Habitat Conservation Division of the Service. Although none of the shrubs contain exit holes, the beetle is completely dependent on this shrub species, thus the shrub will be protected during Project activities. The elderberry shrubs already occur in disturbed context as is evident given the adjacent paved road. The following mitigation measure will be implemented to reduce potential impacts on valley elderberry longhorn beetle to an insignificant or discountable level:

- Implementation of the Service Conservation Guidelines for the Valley Elderberry Longhorn Beetle will prevent disturbance to the Valley Elderberry Longhorn Beetle. Elderberry shrubs located within the action area shall be fenced in accordance with these guidelines, and signage will be posted indicating the need for avoidance.
- Potential impacts to listed species will be minimized by having excavation monitored by a biological monitor who can halt construction if there appear to be impacts to any of the ESA listed species. In the event that a listed species is observed, work will stop immediately and Reclamation will consult the Service to determine an appropriate course of action.
- All onsite staff will receive mandatory Environmental Awareness Training prior to working on the project site. This training will include species identification information and photos, an explanation of Federal laws protecting these listed species, and employee's personal responsibility to avoid the take of listed species. All employees will acknowledge that they have received and read the training, and this documentation will be kept on file and will be available on request.

The California Red-legged frog occurs in aquatic habitats and adjacent uplands. These frog species typically persist in ponds and creeks that dry out from time-to-time, have emergent vegetation, and are isolated from its exotic predators, mainly Bullfrog (*Rana catesbeiana*) and warm water fishes. The wetland feature that was identified by the Service in the *July 2014 Wetland Delineation Report for the Folsom Dam Safety and Flood Damage Reduction Project* as SW008 is highly disturbed and has been maintained by Reclamation to be free of vegetation in order to allow for seepage monitoring. The marginal habitat adjacent to Dike California Red-legged frog is highly disturbed, has no emergent vegetation, and is near Folsom Reservoir which contains bullfrog and warm water fishes. The only known extant populations of California Red-legged frog in the American River watershed are approximately 30 miles from Folsom Reservoir. This distance and the presence of Folsom Reservoir would preclude any immigration into this habitat from upstream California Red-legged frog populations.

The project has the potential to affect nesting avian species. As mitigation, Reclamation would clear all vegetation prior to the start of the avian nesting period, February 15. Additionally, Reclamation will continue avian monitoring commitments that were made in the 2007 Folsom

Dam Safety and Flood Damage Reduction Record of Decision, and include Dike 1 in ongoing surveys.

Cumulative Impacts

No listed species would be affected by the project because there are not likely to be any listed species in the project area. The project would not have adverse direct or cumulative impacts on Biological Resources.

3.4 Cultural Resources

3.4.1 Affected Environment

Cultural resources is a broad term that includes prehistoric, historic, architectural, and traditional cultural properties. The National Historic Preservation Act (NHPA) of 1966 is the primary Federal legislation that outlines the Federal Government's responsibility to cultural resources. Section 106 of the NHPA requires the Federal Government to take into consideration the effects of an undertaking on cultural resources listed on or eligible for inclusion in the National Register of Historic Places (National Register). Those resources that are on or eligible for inclusion in the National Register are referred to as historic properties.

The Section 106 process is outlined in the Federal regulations at 36 Code of Federal Regulations (CFR) Part 800. These regulations describe the process that the Federal agency (Reclamation) takes to identify cultural resources and the level of effect that the proposed undertaking will have on historic properties. In summary, Reclamation must first determine if the action is the type of action that has the potential to affect historic properties. If the action is the type of action to affect historic properties, Reclamation must identify the area of potential effects (APE), determine if historic properties are present within that APE, determine the effect that the undertaking will have on historic properties, and consult with the State Historic Preservation Office, to seek concurrence on Reclamation's findings. In addition, Reclamation is required through the Section 106 process to consult with Indian Tribes concerning the identification of sites of religious or cultural significance, and consult with individuals or groups who are entitled to be consulting parties or have requested to be consulting parties.

3.4.2 Environmental Consequences

No Action

The No Action Alternative is the alternative that assumes no action would be taken. There would be no impacts to cultural resources.

Proposed Action

After reviewing the proposed project, Reclamation's Regional Cultural Resources Division wrote in an e-mail dated September 25, 2014 to Reclamation's Central California Area Office Natural Resources Division, stating that the 2007 evaluation and National Historic Preservation Act consultation package that was sent to the SHPO regarding Safety of Dams at Folsom considered the proposed project in its consultation. Therefore the effects of the proposed project have already been addressed in the overall evaluation of cultural resources and all adverse effects to

cultural resources have been resolved and implementation of the Proposed Action will not lead to additional adverse impacts to cultural resources. The e-mail is included as Appendix B.

Cumulative Impacts

The project would not have adverse direct or cumulative impacts on Cultural Resources.

3.5 Air Quality

Section 176 (C) of the Clean Air Act [CAA] (42 U.S.C. 7506 (C)) requires any entity of the federal government that engages in, supports, or in any way provides financial support for, licenses or permits, or approves any activity to demonstrate that the action conforms to the applicable State Implementation Plan (SIP) required under Section 110 (a) of the Federal Clean Air Act (42 U.S.C. 7401 (a)) before the action is otherwise approved. In this context, conformity means that such federal actions must be consistent with SIP's purpose of eliminating or reducing the severity and number of violations of the National Ambient Air Quality Standards (NAAQS) and achieving expeditious attainment of those standards. Each federal agency must determine that any action that is proposed by the agency and that is subject to the regulations implementing the conformity requirements would, in fact conform to the applicable SIP before the action is taken.

3.5.1 Affected Environment

Dike 1 is located in Placer County which is located in the Sacramento Valley Air Basin (SVAB) where air quality is monitored and regulated by the Placer County Air Pollution Control District (PCAPCD). The PCAPCD has met the (NAAQS) for criteria air pollutants of concern except for ozone (O₃) and particulate matter less than 2.5 microns in diameter (PM_{2.5}). As a result, the emissions of most concern are O₃ (which includes precursors such as volatile organic compounds [VOC] and nitrogen oxides [NO_x]), and PM_{2.5}. Table 2 below shows the attainment status and *de minimis* thresholds for the criteria air pollutants of most concern.

Table 2. PCAPCD Attainment Status and <i>De Minimis</i> Thresholds for Federal General Conformity Determinations		
Pollutant	Attainment Status^a	<i>De Minimis</i>/Thresholds (tons/year)
VOC (as ozone precursor)	Nonattainment ^b	25 ^d
NO _x (as an ozone precursor)	Attainment ^b	25 ^d
PM _{2.5}	Nonattainment ^b	100 ^d
^a Source: http://www.arb.ca.gov/desig/adm/adm.htm ^b The PCAPCD portion of the SVAB is designated as Severe for O ₃ NAAQS. http://www.airquality.org/aqdata/attainmentstat.shtml ^d 40 CFR 93.153		

Construction emissions would vary from day to day and by activity, depending on the timing and intensity of construction, and wind speed and direction. Generally, air quality impacts from the Proposed Action would be localized in nature and decrease with distance. The emissions from

construction activities for the Project would be temporary, and there would be no operational emissions. The ground disturbing activities would result in the temporary emissions of fugitive dust and vehicle combustion pollutants during the following activities:

- On-site earthwork (site preparation, demolition, piping, grading and stockpiling); and
- On-site construction equipment and haul truck engine emissions.

Construction work would occur within an existing recreation area near Folsom Lake. Calculated emissions from the Proposed Action were estimated using the 2013 California Emissions Estimator Model (CalEEMod) (version 2013.2.1) for reactive organic gases (ROG)¹, NO_x, and PM_{2.5}. CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and greenhouse gas (GHG) emissions associated with both construction and operations from a variety of land use projects. The model quantifies direct emissions from construction and operations (including vehicle use), as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. Total project emissions are presented in Table 3 below.

Table 3. Estimated Project Emissions^a		
Pollutant	Unmitigated (tons/year)	Mitigated (tons/year)
ROG/VOC	0.1971	0.1971
NO _x	1.9602	1.9602
PM _{2.5}	0.4979	0.2563
Carbon dioxide equivalents	152.4359	152.4357

^a Source: CalEEMod Version 2013.2.1

3.5.2 Environmental Consequences

No Action

The No Action Alternative is the alternative that assumes no action would be taken. Under the No Action no construction activities would occur at Dike 1 and therefore no air emissions would be expected.

Proposed Action

Air quality impacts associated with the Proposed Action would result from short term construction-related emissions, including dust and vehicle emissions. Construction activities would result in the temporary generation of reactive organic gases, (contributing to ozone), oxides of nitrogen, PM 2.5 and PM 10 emissions from site preparation and compaction and from motor vehicle exhaust associated with construction equipment.

As shown in Table 3 above, the Proposed Action has been estimated to emit less than the *de minimis* threshold for NO_x and ROG/VOC as O₃ precursors and PM_{2.5}; therefore, a federal general conformity analysis report is not required. Notwithstanding this observation, the Proposed Action

¹ The term “volatile organic compounds” are synonymous with “reactive organic gases” for the purposes of this document since both terms refer to hydrocarbon compounds that contribute to ozone formation.

would comply with the PCAPCD's Regulation 2, Rule 228, Section 400 control measures for fugitive dust, including construction emissions of PM_{2.5}. One of these control measures includes the use of water in "[u]npaved areas subject to vehicle traffic... [and] prior to any ground disturbance, including grading, excavating, and land clearing," for fugitive dust suppression (PCAPCD 2003). However, if dust suppression measures are not implemented, the estimated PM_{2.5} emissions from the Proposed Action of 0.4979 tons/year would still be well below the respective thresholds.

Grading and filling activities will utilize bulldozers, excavators, front-end loaders, and long reach excavators to perform construction activities. This construction machinery will work below, on, and adjacent to Dike 1 as construction progresses. The work will be done between January 13, 2015 and April 30, 2015.

To minimize the potential impacts associated with dust emissions, Reclamation would implement the following measures:

- Unpaved areas subject to vehicle traffic would be kept wet, treated with a chemical dust suppressant, or covered.
- The speed of any equipment traveling across unpaved areas would not exceed a 15 miles per hour (mph).
- Storage piles and disturbed areas not subject to vehicular traffic would be stabilized by being kept wet, treated with a chemical dust suppressant, or covered.
- Prior to any ground disturbance, sufficient water would be applied to prevent emitting dust and to minimize visible emission from crossing the project boundary line.
- Construction vehicles would be cleaned prior to leaving the site to prevent dust, silt, mud, and dirt from being released or tracked off site.
- When wind speeds are high enough to result in dust emissions leaving the boundary of the project despite the application of dust mitigation measures, grading and earthwork would be suspended.
- BMPs will be implemented to minimize wind-driven dust from inactive disturbed surface areas.
- Trucks would not be allowed to transport excavated material off-site unless the trucks are maintained such that no spillage can occur from holes or other openings in cargo compartments and loads are either;
 - Covered with tarps; or
 - Wetted and loaded such that the material does not touch the front, back, or sides of the cargo compartment at any point less than six inches from the top and that no point of the load extends above the top of the cargo compartment.

Cumulative Impacts

An air quality management plan for the project area has been developed by the Placer County Air Pollution Control District. This plan takes into consideration current and project air emissions for this air basin. The proposed project will comply with the objectives of the air quality management plan for Placer County and implement the appropriate mitigation measures as dictated by PCAPCD, therefore no cumulative impacts are expected.

3.6 Traffic

3.6.1 Affected Environment

Regional access to Granite Bay State Park is provided by Highway 50 and Interstate 80, which feed to local roads. Douglas Boulevard provides access to the Granite Bay State Park. In the winter months between November and March, Dike 1 is crossed by approximately 10 cars per day. Occasionally in the winter larger special events result in additional traffic across Dike 1.

3.6.2 Environmental Consequences

No Action

The No Action Alternative is the alternative that assumes no action would be taken. During January through April, the daily traffic of approximately 10 cars per day would continue to travel across Dike 1.

Proposed Action

The Proposed Action would require that Reclamation manage public traffic across the crest of Dike 1. A 20-foot wide haul road, approximately 900 feet in length, would be constructed from the staging area to the south end of the dike as shown in Figure 1. The haul road would be surfaced with 6 inches of compacted road base and lined with orange construction fencing for public safety. The alignment would follow an existing trail located on the upstream side of Park Road. The haul road would intersect Park Road at the southern end of the dike (left abutment) as shown in Figure 1. Construction traffic and recreationalists would cross the asphalt road at this location and continue to the work area on the downstream face of Dike 1. A full time flagger would be provided by Reclamation to manage traffic at the intersection. Park Road would remain open to two-lane traffic while construction is taking place on the downstream toe of the dike. As the downstream berm rises in elevation, the active construction area would move closer to the crest road. This would require the crest road to be reduced to one lane of traffic in order to provide a safety buffer between the construction area and public traffic. A second flagger on the north end of the dike (right abutment) would be provided by Reclamation while construction is taking place near and on the crest and the roadway is reduced to one lane. Reflective vertical panels and appropriate signage would be provided and placed by Reclamation to delineate the roadway into one lane. It is anticipated that construction near and on the crest and the accompanying lane closure would be completed in one 10-day shift. Because construction would not impact the existing asphalt roadway, two-lane traffic would be allowed across the crest when construction crews are off- shift. Park Road is closed at night and would not require traffic control during nighttime hours. The effects to traffic from implementation of the Proposed Action is de minimus.

Cumulative Impacts

The Proposed Action is not expected to contribute to any substantial cumulative transportation and circulation impacts because the action is temporary.

Section 4 Consultation and Coordination

4.1 Fish and Wildlife Coordination Act (16 U.S.C. § 661 et seq.)

The Fish and Wildlife Coordination Act (FWCA) requires that Reclamation consult with fish and wildlife agencies on all water development projects that could affect biological resources. Reclamation coordinated with Service under a FWCA Report that was put into place for the Folsom Dam Safety and Flood Damage Reduction Project in April, 2007. The FWCA Report will be updated with information regarding Dike 1.

4.2 Endangered Species Act (16 U.S.C. § 1531 et seq.)

Section 7 of the Endangered Species Act requires Federal agencies, in consultation with the Secretary of the Interior and/or Commerce, to ensure that their actions do not jeopardize the continued existence of endangered or threatened species, or result in the destruction or adverse modification of the critical habitat of these species. Reclamation entered into informal consultation with Service on October 31, 2014, requesting informal consultation on the Proposed Action.

4.3 Clean Water Act (16 U.S.C. § 703 et seq.)

Section 401

Section 401 of the Clean Water Act (CWA) (33 U.S.C. § 1311) prohibits the discharge of any pollutants into navigable waters, except as allowed by permit issued under sections 402 and 404 of the CWA (33 U.S.C. § 1342 and 1344). If new structures (e.g., treatment plants) are proposed, that would discharge effluent into navigable waters, relevant permits under the CWA would be required for the project applicant(s). Section 401 requires any applicant for an individual U. S. Army Corps of Engineers dredge and fill discharge permit to first obtain certification from the state that the activity associated with dredging or filling will comply with applicable state effluent and water quality standards. This certification must be approved or waived prior to the issuance of a permit for dredging and filling. Reclamation sent an application to the Regional Water Quality Control Board (RWQCB) requesting 401 certification on November 3, 2014.

Section 404

Section 404 of the CWA authorizes the U. S. Army Corps of Engineers to issue permits to regulate the discharge of “dredged or fill materials into waters of the United States” (33 U.S.C. § 1344). Reclamation submitted an application for a Department of the Army Permit on November 7, 2014.

Section 5 References

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