

# RECLAMATION

*Managing Water in the West*

**Final Environmental Assessment**

**Butte Water District Canal Automation –  
Thresher Weir**

**August 2011**

### **Mission Statements**

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

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

# Table of Contents

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<b>1.0</b>	<b>Purpose and Need for Action</b>	<b>5</b>
1.1	Introduction	5
1.2	Purpose and Need	6
1.3	Potential Resource Issues	7
1.4	Resources Not Analyzed in Detail	7
<b>2.0</b>	<b>Alternatives Including Proposed Action</b>	<b>8</b>
2.1	No Action Alternative	8
2.2	Proposed Action Alternative	8
<b>3.0</b>	<b>Affected Environment &amp; Environmental Consequences</b>	<b>13</b>
3.1	Surface Water Resources	13
3.1.1	Affected Environment	13
3.1.2	Environmental Consequences	13
3.2	Groundwater Resources	14
3.2.1	Affected Environment	14
3.2.2	Environmental Consequences	14
3.3	Biological Resources	14
3.3.1	Affected Environment	14
3.3.2	Environmental Consequences	22
3.3.3	Mitigation Measures	23
3.4	Cultural Resources	24
3.4.1	Affected Environment	25
3.4.2	Environmental Consequences	26
3.5	Indian Trust Assets	27
3.5.1	Affected Environment	27
3.5.2	Environmental Consequences	27
3.6	Environmental Justice	27
3.6.1	Affected Environment	27
3.6.2	Environmental Consequences	28
3.7	Global Climate Change	28
3.7.1	Affected Environment	28
3.7.2	Environmental Consequences	28
<b>4.0</b>	<b>Cumulative Impacts</b>	<b>29</b>
<b>5.0</b>	<b>Consultation and Coordination</b>	<b>30</b>
5.1	Fish and Wildlife Coordination Act (16 USC. 651 et seq.)	30
5.2	Endangered Species Act (16 USC. 1521 et seq.)	30
5.3	Migratory Bird Treaty Act (16 USC § 703 ET SEQ.)	30
5.4	National Historic Preservation Act (16 USC 470 et seq.)	31

5.5	Public Review .....	31
6.0	List of Preparers and Reviewers.....	32
7.0	References.....	33

## List of Figures

Figure 1:	Existing Thresher Weir
Figure 2:	Project Location
Figure 3:	Site Plan
Figure 4:	Site Access Locations
Figure 5:	Main Canal, just downstream of Thresher Weir
Figure 6:	Main Canal at Thresher Weir
Figure 7:	Sensitive Species near Project Area

## List of Tables

Table 1:	Species Identified in the Gridley and Honcut USGS 7.5-minute Quadrangles
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## List of Acronyms

ac-ft	Acre feet
APE	Area of Potential Effect
BWD	Butte Water District
CEQA	California Environmental Quality Act
cfs	cubic feet per second
CNDDDB	California Natural Diversity Database
EA	Environmental Assessment
ITA	Indian Trust Assets
NAHC	Native American Heritage Commission
NEIC	Northeast Information Center
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
Project	Thresher Weir Replacement Project
Reclamation	U.S. Department of the Interior, Bureau of Reclamation
SEWD	Sutter Extension Water District
SHPO	State Historic Preservation Officer
THPO	Tribal Historic Preservation Officer
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

## List of Appendices

Appendix A:	Biological Assessment
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# **1.0 Purpose and Need for Action**

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## **1.1 Introduction**

In conformance with the National Environmental Policy Act of 1969 (NEPA), as amended, the Bureau of Reclamation (Reclamation) has prepared this draft Environmental Assessment (EA) to evaluate and disclose any potential environmental impacts associated with Reclamation's decision to provide funding for the Canal Automation - Thresher Weir Replacement Project (Project). The proposed Project is located along a segment of the Sutter-Butte Main Canal in Butte County, California.

This EA: (1) describes the existing environmental resources in the proposed Project area; (2) evaluates the effects of the Proposed Action and No Action alternative on those resources; and (3) proposes measures to avoid, minimize, or mitigate any adverse effects. This EA is in compliance with NEPA and the Council on Environmental Quality regulations (40 CFR 1500-1508). Reclamation has also prepared a Finding of No Significant Impact which explains why the Proposed Action would not have any significant effects on the human environment.

The Sutter-Butte Main Canal (Main Canal) is located in Butte and Sutter counties and is operated jointly by the two districts it serves, Butte Water District (BWD) at the northern end of the Main Canal and Sutter Extension Water District (SEWD) to the south. The Main Canal conveys water from the Thermalito Afterbay of Oroville Dam to serve approximately 36,800 acres of irrigated land in the two districts. The Main Canal is now operated approximately 10 months out of the year. Historically, the purpose of the Main Canal has been to deliver water during the irrigation season, typically from April through October. Irrigation continues to be the Main Canal's primary mission; however, the Main Canal now delivers water in the late fall and early winter for flooding of fields to decompose rice stubble, a function that also supports waterfowl habitat. The expansion of purposes has extended the operating season to the middle or end of January, at which time the Main Canal is drained for annual maintenance before being refilled in March or April. The prolonged period of operation enhances the value of the Main Canal but increases the need for efficient management.

Daily operations include responding to orders from the BWD and SEWD by releasing water from Thermalito Afterbay. When in operation, water levels are generally held near the top of the Main Canal with little freeboard. Maintaining a nearly-constant pool in the Main Canal facilitates management of laterals, but given the existing Main Canal controls, requires conveyance of operational water that must be spilled in instances where canal flows exceed actual demands.

## 1.2 Purpose and Need

Presently, the Main Canal is operated by controlling water released into it from Thermalito Afterbay. Because of the Main Canal's length, the ability to manage water in the canal prism is essential for controlling water deliveries. The capacity to control flows is now limited both by the distances separating the water source from points of demand and by the manually-operated weirs used to control the Main Canal flows. Under current operating practices, settings on weirs are changed no more than twice daily and are generally changed less frequently.

The purpose of this proposed Project is take a first step toward improving irrigation service and reducing water shortages by replacing the existing undersized, manually-operated structure at Thresher Weir with an enlarged weir equipped with electrically-driven, remotely-operated gates. In addition to improving irrigation service, installation of automated gates will improve regional water supply reliability by reducing spillage from the canal and laterals and will reduce tailwater now caused by the inability to adjust lateral flows to meet scheduled shutoffs of deliveries.

In summary, this initial step in the BWD's long-term Canal Automation Project is intended to achieve the following benefits:

- During the peak use period:
  - Increase water supply reliability by increasing conveyance capacity and reducing requirements for operational water. This will increase deliveries to areas within the BWD that do not receive service during certain years because peak period demands exceed conveyance capacity.
- Following the peak use period:
  - Continue to provide more reliable and effective irrigation service.
  - Conserve water by reducing requirements for operational water and better regulating inflows to laterals to reduce spillage and tailwater. This will reduce spillage at Cox Spill and reduce lateral spillage and tailwater.

Under the Sacramento Valley Integrated Regional Water Management Plan (SVIWRMP) Grants Program, Reclamation provides financial assistance to support activities that promote the preparation and revision of written regional water management/conservation plans, implement activities identified in written water management plans, demonstrate new or previously unknown water management technologies and practices, and promote improved understanding of good water use practices and principles. Reclamation is providing financial assistance to BWD for SVIRWMP revision and implementation, which includes the Proposed Project. The projects are authorized under the Reclamation Act of 1902 (32 Stat. 388), as amended and supplemented; Public Law 108-361, Section 103(d)(5), Section 9504(a).

### **1.3 Potential Resource Issues**

The resource areas listed below have the potential to be affected by the Proposed Action and are discussed further in Section 3.

- Surface Water Resources
- Groundwater Resources
- Biological Resources
- Cultural Resources
- Indian Trust Assets
- Environmental Justice
- Global Climate Change

### **1.4 Resources Not Analyzed in Detail**

It was determined that the following resources would not be impacted by the Proposed Action and are therefore not analyzed in this EA: air quality, geology and soils, land use, fisheries, recreation, transportation, noise, visual resources, growth, and hazards and hazardous materials.

## **2.0 Alternatives Including Proposed Action**

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### **2.1 No Action Alternative**

Under the No Action Alternative, the Thresher Weir would not be replaced. No project would be constructed, and the current condition of the Main Canal would be unchanged.

### **2.2 Proposed Action Alternative**

The proposed action alternative is to remove the existing Thresher Weir (Figure 1) and replace it with an enlarged weir equipped with electrically-driven, remotely-operated gates. The Thresher Weir Replacement Project is located along a segment of the Sutter-Butte Main Canal, east of Thresher Avenue, approximately one mile west of the Feather River, and approximately two miles east of Gridley, in Butte County, California (Figure 2).

The Proposed Action would involve removing the existing weir, and constructing a new weir approximately 100 feet downstream in the Main Canal and raising the existing canal embankment. There would be limited land recontouring (Figure 3). Lands affected total approximately one acre located within a portion of Section 9, Township 17 North, Range 3 East, as shown on the U.S. Geological Survey (USGS) Gridley, California, 7.5-foot series quadrangle. Construction and lay down areas have been identified on both sides of the canal bank (Figure 3).

The new weir would be located a maximum of 100 feet downstream from the existing structure. To keep the contractor's work area dry, the existing structure would remain in place during construction for use as a barrier to contain flow generated by water seeping from the canal banks during construction.

The embankments would be raised a maximum of three feet between the existing and new structure (maximum length of 100 feet) because the embankment downstream is lower than the upstream bank. If the embankments are not raised, the Districts would not be able to maintain current maximum operating water levels. An additional 50 to 60 feet downstream of the new structure would be needed to ramp down from the new embankment elevations to the existing embankment. The existing top width of the embankments would be maintained, which vary from 12 to 16 feet. It is expected that raising the embankments would push the toe of the new embankments out an additional 12 feet, approximately.



Construction is expected to begin February 1, 2012 and end April 1, 2012. However the contractor may be under contract as early as December 2011 and automated gates are to be ordered in the fall of 2011 because of the lead time required for manufacture of these items. After April 1, 2012, the contractor is expected to be finalizing miscellaneous items and testing during April 2012.

Site access would be via existing roads. Access to the Project site would be on Keith Avenue to Thresher Avenue, as shown on Figure 4.



Figure 1: Existing Thresher Weir

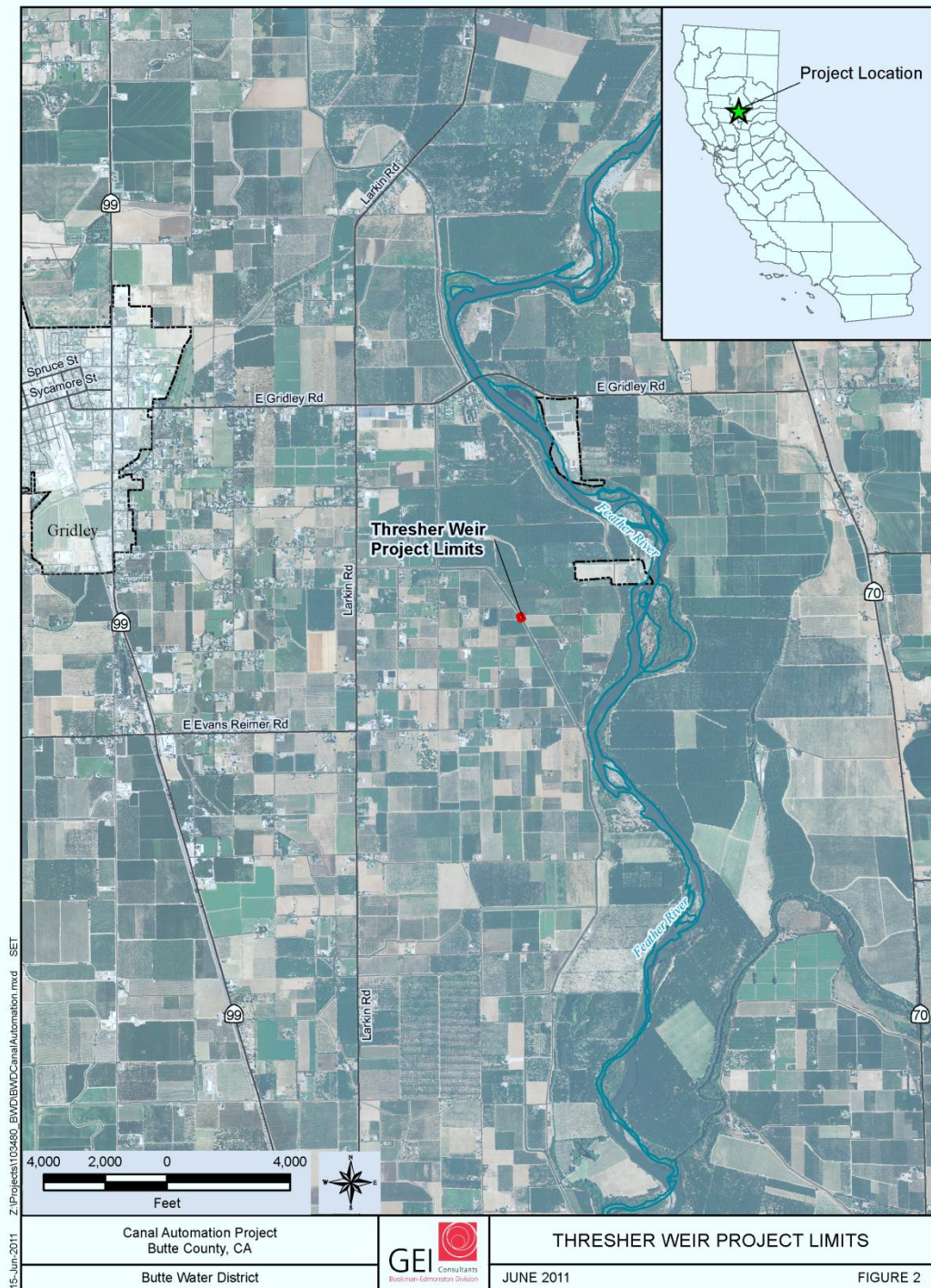


Figure 2: Project Location



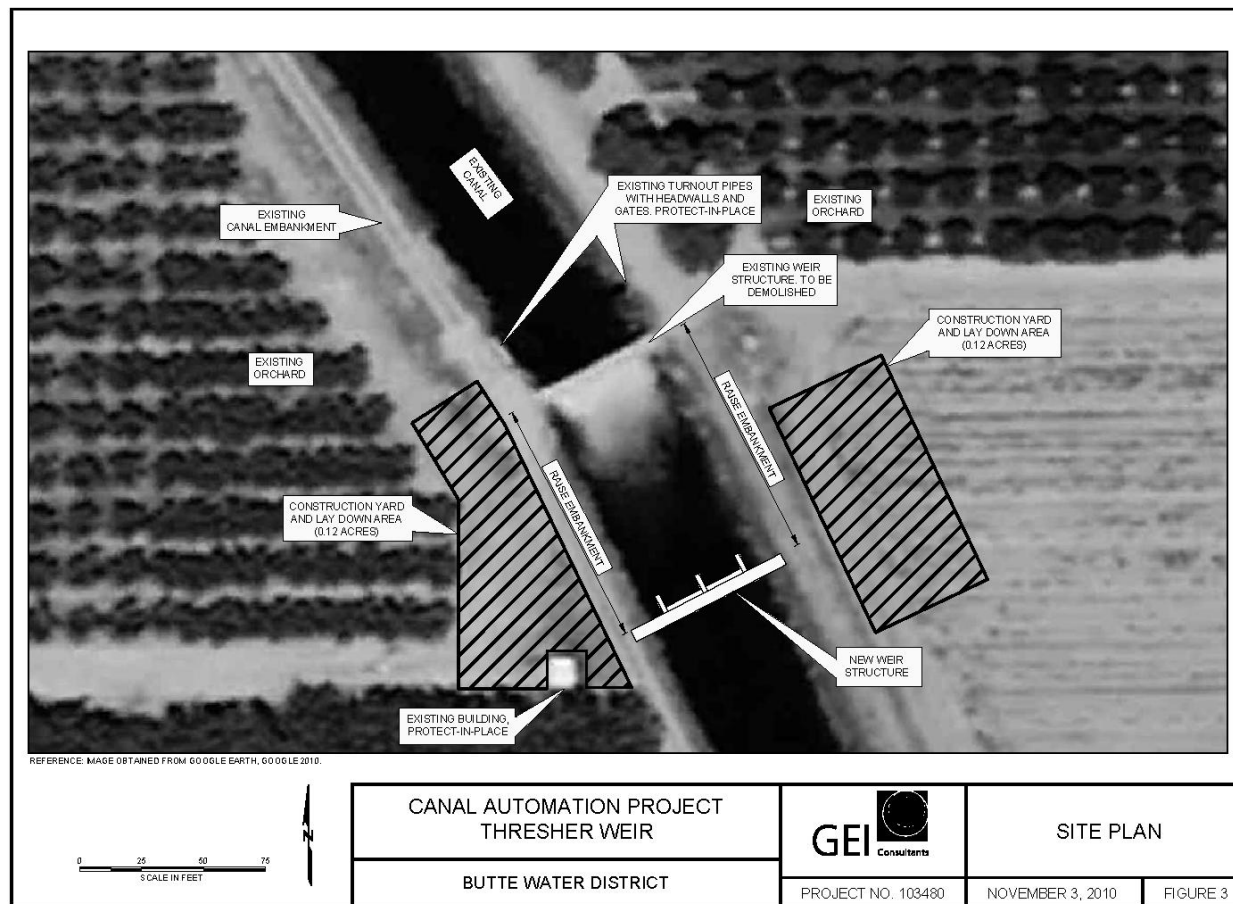


Figure 3: Site Plan

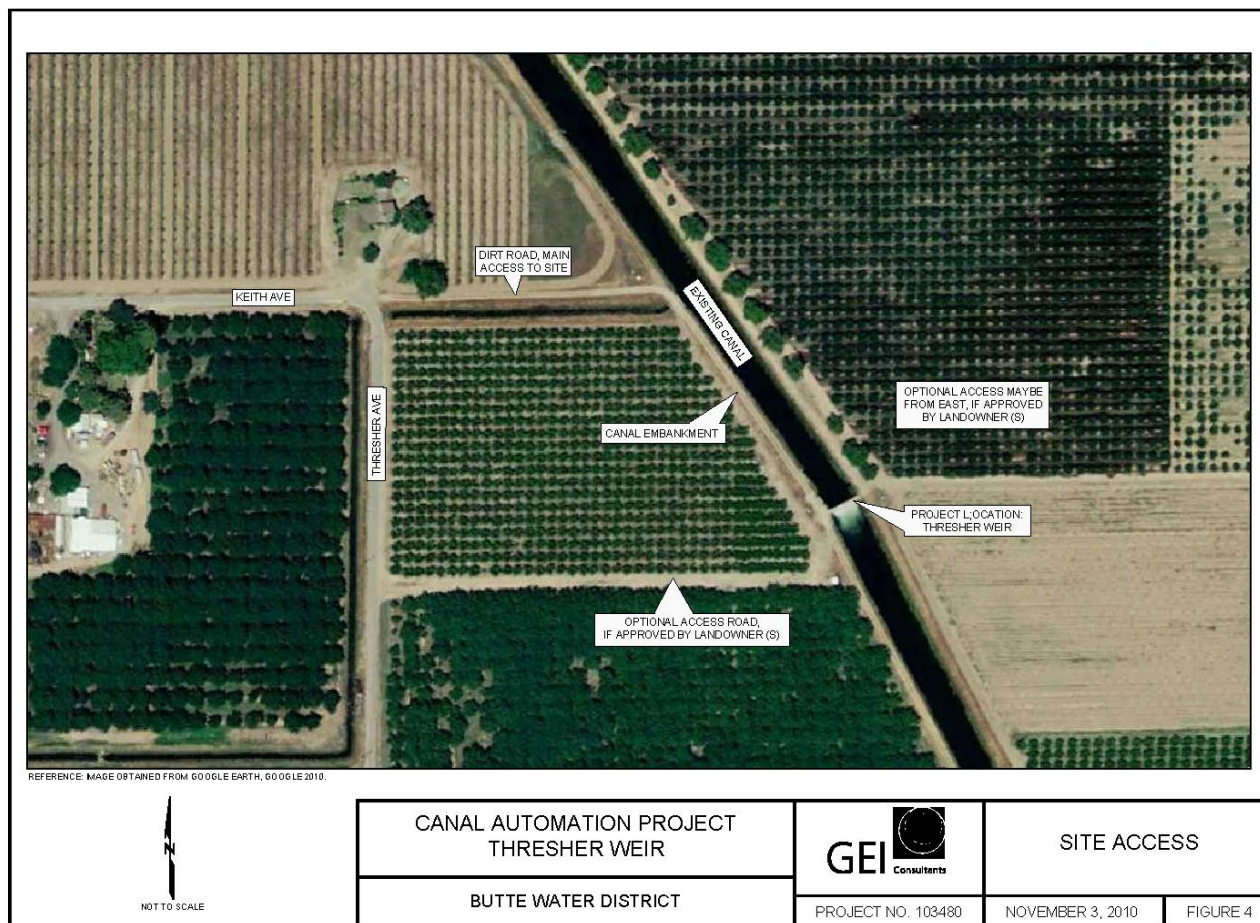


Figure 4: Site Access Locations

## 3.0 Affected Environment & Environmental Consequences

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### 3.1 Surface Water Resources

#### 3.1.1 *Affected Environment*

The Main Canal is fed from Thermalito Afterbay of Oroville Reservoir and extends for a distance of approximately 33 miles through Butte Water District and Sutter Extension Water District. In the two districts the canal serves approximately 32,800 acres of irrigated land and has a conveyance capacity of approximately 1,000 cubic feet per second (cfs) at the upstream end that tapers down to approximately 100 cfs in its southern-most reach. In addition to receiving water from Thermalito Afterbay, supplemental water is pumped into the canal from the Feather River at Sunset Pumps. Thresher Weir is located in the upstream portion of the Main Canal in an area where the canal capacity is approximately 900 cfs.

There are no natural streams, rivers, lakes, pools or other naturally-occurring bodies of water present in the Project area (the Project area is defined as the area that would have surface disturbance, or would be potentially affected by surface disturbance, caused by the proposed Project). The Feather River is within one mile east of the Proposed Project site. However, because of the small Proposed Project footprint and the nature of the project, the Proposed Project will have no impact on the river.

#### 3.1.2 *Environmental Consequences*

##### No Action

Under the No Action Alternative, surface waters would be unaffected. The baseline condition would remain unchanged. Under the No Action Alternative, the Proposed Project would not be constructed; therefore the water conservation benefit of reducing spillage from the Main Canal and from laterals upstream of Thresher Weir would not be accomplished. This water conservation is estimated to total approximately 2,400 acre feet (ac-ft) per year.

##### Proposed Action

The Proposed Action would result in more efficient use of available irrigation water supplies by reducing spillage from the Main Canal and from laterals upstream of Thresher Weir by a total of approximately 2,400 ac-ft per year. The amount of water within the canal would remain unchanged as a result of the Proposed Action.

Construction of the Proposed Action would occur during the winter months when little to no water is present within the canal. Therefore, water quality would remain unchanged from the baseline condition.

The Proposed Project would not have an impact on either the quality or quantity of irrigation water supply. Natural surface waters would also be unaffected by the Proposed Project.

## **3.2 Groundwater Resources**

### **3.2.1 *Affected Environment***

Seepage from the Main Canal has historically resulted in high groundwater in areas immediately adjacent to the Main Canal. While these high water tables have been problematic to growers owning land adjacent to the canal, they have helped support the local aquifer which is used by owners of private wells and by the District to conjunctively manage the groundwater resource so that groundwater is available to supplement canal deliveries during water-short years.

### **3.2.2 *Environmental Consequences***

#### *No Action*

Under the No Action Alternative, the weir would not be replaced. No impacts to groundwater conditions would occur.

#### *Proposed Action*

The Proposed Project does not involve lining, seepage control measures, or modification of the Main Canal or reoperation of the Main Canal; therefore, the Project's impact on groundwater resources would be negligible as would the Project's impact on regional groundwater levels influenced by seepage from the Main Canal.

## **3.3 Biological Resources**

### **3.3.1 *Affected Environment***

The Main Canal is bordered by roads on both sides in the vicinity of the Proposed Project. Between the Main Canal and the roads, there is a narrow border of typical roadside weedy species of grasses and other herbaceous plants.

There are deciduous orchards immediately adjacent to the roads on both sides of the canal (Figures 5 and 6). The deciduous orchards in the Proposed Project area are open single-species tree dominated habitats with low, bushy trees and an open understory to facilitate harvest. Trees are arranged in a linear pattern, with uniform spacing between trees. The understory is managed to prevent understory growth totally or partially, but where understory growth occurs it is composed of low-growing grasses, legumes, and other herbaceous plants.





Figure 5: Main Canal, just downstream of Thresher Weir (note vegetation along canal, and orchards adjacent to the canal)



Figure 6: Main Canal at Thresher Weir (note vegetation on the far bank of the canal)

Deciduous orchards provide habitat for some species of birds and mammals such as rabbit, deer, squirrel, raccoon, American crow, house finch, and mourning dove (Schultze, 1999).

There are no undisturbed habitats such as vernal pools or wetlands in the Proposed Project area that would provide habitat for rare plants or animals. The specific habitat requirements of the species of interest potentially occurring in the Project area are listed in Table 1. This table was generated from the U.S. Fish and Wildlife Service (USFWS) California Natural Diversity Database (CNDDDB), April 2011 for the two USGS quadrangles that surround the Proposed Project area (Gridley and Honcut).



Table 1: Species Identified in the Gridley and Honcut USGS 7.5-minute Quadrangles

Common Name	Scientific Name	Federal Status	CA State Status	Habitat in Area	Quad	Habitat Requirements
Vertebrates						
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Delisted	Endangered	Presumed Extant	Gridley	Requires large bodies of water, or free flowing rivers with abundant fish, and adjacent snags or other perches for feeding. Perches high in large, stoutly limbed trees, on snags or broken-topped trees, or on rocks near water. Roosts communally in winter in dense, sheltered, remote conifer stands. Nests in large, old-growth, or dominant live tree with open branchwork, especially ponderosa pine, generally within one mile of water.
Bank Swallow	<i>Riparia riparia</i>	None	Threatened	Presumed Extant	Gridley and Honcut	Colonial nester; nests primarily in riparian and other lowland habitats west of the desert; requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole
Giant Garter Snake	<i>Thamnophis gigas</i>	Threatened	Threatened	Presumed Extant	Gridley	Prefers freshwater marsh and low gradient streams, has adapted to drainage canals and irrigation ditches

Greater Sandhill Crane	<i>Grus Canadensis tabida</i>	None	Threatened	Presumed Extant	Gridley	Nesting territories in wet meadows, often interspersed with marsh land habitat
Silver-Haired Bat	<i>Lasionycteris noctivagans</i>	None	None	Presumed Extant	Gridley	Forested areas, especially old growth forests
Swainson's Hawk	<i>Buteo swainsoni</i>	None	Threatened	Presumed Extant	Gridley	Breeds in stands with few trees in juniper-sage flats, riparian areas and in oak savannah, and requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations
Tricolored Blackbird	<i>Agelaius tricolor</i>	None	None	Possibly Extirpated/ Presumed Extant	Honcut/ Gridley	Highly colonial species, most numerous in central valley vicinity, largely endemic to California; requires open water, protected nesting substrate, and foraging area with insect prey within a few km of the colony.... often found nesting in freshwater marshes dominated by cattail ( <i>Typha</i> spp.) and tules ( <i>Scirpus</i> spp.), or in upland sites with blackberries, nettles or thistles.

Insects						
Valley Elderberry Longhorn Beetle	<i>Desmocerus californicus dimorphus</i>	Threatened	None	Presumed Extant	Gridley and Honcut	Endemic to moist valley oak riparian woodlands along margins of rivers and streams in the lower Sacramento and upper San Joaquin Valley where blue elderberry trees/shrubs ( <i>Sambucus mexicana</i> ) grow... some habitat found along Feather River
Plants						
Ahart's Dwarf Rush	<i>Juncus leiospermus var ahartii</i>	None	None	Presumed Extant	Honcut	vernal pool, altered vernal pool, grassland with vernal swale complex, and blue oak savanna with vernal swale complex land cover types
Ahart's Paronychia	<i>Paronychia ahartii</i>	None	None	Presumed Extant	Honcut	Vernal pools
Baker's Navarretia	<i>Navarretia leucocephala ssp. Bakeri</i>	None	None	Presumed Extant	Gridley	Meadows and vernal pools
Sanford's Arrowhead	<i>Sagittaria sanfordii</i>	None	None	Presumed Extant	Gridley	Freshwater marsh

Based on the habitat requirements described above, the Proposed Project area does not provide suitable habitat for the following species:

- Bald Eagle
- Bank swallow
- Greater Sandhill Crane
- Swainson's hawk
- Silver haired bat
- Valley elderberry longhorn beetle
- Ahart's Dwarf Rush
- Ahart's Paronychia
- Baker's Navarretia
- Sanford's Arrowhead

The Proposed Project does have potential to impact vegetation adjacent to the Main Canal and species associated with this habitat type such as the tricolored blackbird and giant garter snake, if suitable habitat is present at the Project site. The known locations for sensitive species in the Gridley and Honcut quadrangles are shown in Figure 7. No sensitive species have been recorded in the Project area.



- Adequate water during the active season early spring through mid-fall (March/April-October) to provide ample supply of food (e.g. tadpoles, frogs, small fish, small vertebrates)
- Emergent, herbaceous wetland vegetation providing cover during the active season and often found in the following habitat types:
  - Rice fields
  - Irrigation canals or drainage ditches
  - Freshwater marshes
  - Sloughs
  - Ponds
  - Other aquatic habitats
- Upland habitat with grassy cover and opening in waterside vegetation for basking
- Higher elevation upland habitats for cover and refuge (e.g. rodent burrows) from flood waters during the snake's inactive season in the winter (October-April)

The Proposed Project area is surrounded by orchards. Orchards do not provide suitable habitat for the giant garter snake, as they lack aquatic habitats and consequently, an adequate prey source.

According to the USFWS, there does not appear to be any upland habitat for giant garter snakes in the Project area. However, the Project area is within the historic range of giant garter snake and could be a movement corridor (J. Hanni, USFWS, personal communication, December 15, 2010).

### **3.3.2 Environmental Consequences**

#### No Action

Under the No Action Alternative, there would be no impact to biological resources.

#### Proposed Action

##### **Tricolored Blackbird**

Since there are no documented breeding colonies in the vicinity of the Proposed Project and suitable breeding habitat is not available along the Main Canal, the Proposed Project is not expected to impact the tricolored blackbird.

### **Giant Garter Snake**

Although the Proposed Project area does not contain suitable giant garter snake habitat, it could be a movement corridor for snakes. Potential impacts would be a disruption of migration if the Proposed Project were to be constructed during the migratory season. However, construction would occur during the non-migratory season when giant garter snakes are dormant. Reclamation has determined that the Proposed Project is not likely to adversely affect giant garter snakes and has informally consulted with USFWS. Mitigation measures as described below would be implemented by BWD to further avoid and minimize any potential impacts to giant garter snakes.

#### **3.3.3 Mitigation Measures**

Potential impacts to giant garter snake would be further reduced by limiting work to the snake's inactive period (October 2-April 30). During that time, giant garter snakes are dormant and would not be migrating. Since the project site is not habitat for giant garter snakes, but is a potential movement corridor, limiting work to the inactive period reduces the potential for impact.

The following Standard Avoidance and Minimization Measures<sup>1</sup> (USFWS, 1997) would be applied. By implementing these measures, take of these special-status species would be further reduced or eliminated. Since giant garter snake habitat is not being directly impacted, there are no mitigation or conservation measures, or compensation/set-asides proposed.

To avoid potential take of giant garter snake, the following measures would be implemented:

- Confine movement of heavy equipment to existing roadways to minimize habitat disturbance.
- Confine clearing to the minimal area necessary to facilitate construction activities. Flag and designate avoided giant garter snake habitat within or adjacent to the project area as Environmentally Sensitive Areas. This area should be avoided by all construction personnel.
- Construction personnel should receive a USFWS-approved worker environmental awareness training. This training instructs workers to recognize giant garter snake and its habitat(s).

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<sup>1</sup> The standard avoidance measures for giant garter snakes include a requirement to do construction during the active season (*versus* the migratory season). In this case, the USFWS has recommended construction in the inactive season (October 2-April 30), as described above. In addition, the standard avoidance measures require that any dewatered habitat remain dry for at least 15 consecutive days after April 15 and prior to excavating or filling of the dewatered habitat. Since the Proposed Project is not located in giant garter snake habitat, this mitigation measure does not apply to this Project.

- The project area should be surveyed for giant garter snakes 24 hours before construction activities. Survey of the project area should be repeated if a lapse in construction activity for two weeks or greater has occurred. If a snake is encountered during construction, activities shall cease until appropriate corrective measures have been completed or it has been determined that the snake will not be harmed. Report any sightings and any incidental take to the USFWS immediately by telephone at (916) 414-6600.
- After completion of construction activities, remove any temporary fill and construction debris, and wherever feasible, restore disturbed areas to pre-project conditions. Restoration work may include replanting species removed from banks or with emergent vegetation in the active channel.
- In the event that take cannot be avoided, contact the USFWS for information before starting the action.

During replacement of the weir, best management practices would be followed to ensure that this project is completed with minimal environmental impacts:

- Disturbance of vegetation shall be kept to a minimum.
- No debris, soil, etc., other than that already present within the well shall be allowed to enter the water.
- No intentional harassment, killing, or collection of plants or animals at or around the work sites.
- No firearms are allowed on site, except for those used by peace officers or CDFG wardens.
- No pets allowed.
- No off-road travel or work is permitted; all vehicles must be confined to existing levee roads.
- All trash, including food-related trash and cigarette butts, must be properly disposed of and removed.
- Storage of hazardous materials, such as fuel, oil, etc. shall not be allowed within 150 feet of waterways. Any chemical spills must be cleaned up immediately and reported as soon as possible.

### **3.4 Cultural Resources**

Cultural resources is a term used to describe both “archaeological sites” depicting evidence of past human use of the landscape and the “built environment” which is represented in structures such as dams, roadways, and buildings. The National Historic Preservation Act (NHPA) of 1966, as amended, is the primary Federal legislation which 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 historic properties included in, or eligible for inclusion in, the National Register of Historic Places (NRHP). Those resources that are included in, or eligible for inclusion in, the NRHP are referred to as “historic properties.”



The Section 106 process is outlined in the Federal regulations under 36 CFR Part 800. These regulations describe the process that the Federal agency (Reclamation) takes to identify historic properties and the level of effect that the proposed undertaking will have on historic properties. In summary, Reclamation must first determine if the action is undertaking that has the potential to affect historic properties. If so, then 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 Officer (SHPO) or Tribal Historic Preservation Officer (THPO), where applicable, 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 to consult with individuals or groups who are entitled to be consulting parties or have requested to be consulting parties.

The APE for the Project, as determined by Reclamation, consists of the old and new weir locations, the canal embankments subject to raising and recontouring, and the areas on either side of the canal that may be used for construction access and staging. The APE amounts to less than 1.0 acre in total. In an effort to identify historic properties in the APE, a cultural resources inventory was initiated by Genesis Society, a private cultural resources consulting firm. The inventory included a records search at the California Historical Resources Information System's Northeast Information Center (NEIC), correspondence with the Native American Heritage Commission (NAHC) as well as Native Americans identified by the NEIC as having interest in the project area, and a pedestrian survey of the entire APE. Reclamation's cultural resources staff also conducted archival research through the Butte County Historical Society, initiated Section 106 consultation with Indian tribes pursuant to 36 CFR Part 800, and conducted an additional survey of the APE. Reclamation will conclude consultation with the California SHPO prior to Project implementation.

### **3.4.1 *Affected Environment***

The Proposed Project is located in the northern Sacramento Valley, approximately one mile west of the Feather River, a major tributary of the Sacramento River. Human use of the Sacramento River and surrounding environs has a long history, dating back more than 7,000 years, and archaeological evidence indicates that by 4,000 years ago large villages were being established along major Sacramento Valley waterways (Rosenthal et al. 2007). At the time of Euro-American contact, the territories of the ethnographically-known Konkow, or Northwestern Maidu, and the Nisenan, or Southern Maidu converged near the Yuba River, located less than 15 miles south of the Project area. The Konkow preferentially settled on ridges and flats within river canyons but utilized a variety of valley resources during their yearly seasonal gathering cycle (Riddell 1978).

Historic-era impacts to the Feather River and surrounding areas include those associated with 19<sup>th</sup> century mining activities and the use and distribution of water for agriculture and domestic purposes as well as energy production. Construction of the Sutter-Butte Canal, on which the Project is located, began in 1904 under the auspices of the Butte County Canal Company. The approximately 30-mile long canal was originally designed to divert water from the Feather River, transporting it to users in Butte and Sutter counties. In 1911, canal ownership changed to the Sutter Butte Canal Company, and later, in 1957, a four-way joint water district partnership was formed among Richvale Irrigation District, Biggs-West Gridley Water District, BWD and Sutter Extension Water District to operate the canal (McGie 1980). In 1969, with the completion of Oroville Dam, the Sutter-Butte Canal point of diversion was moved from its original location on the Feather River to the Thermolito Afterbay and the current operating agreement among the four members of the joint water district partnership was established (Orme 2011). The existing Thresher Weir was constructed in 1967, replacing an earlier wooden weir that was positioned approximately one mile upstream (Melton 2011).

No prehistoric or ethnographic historic properties or cultural resources were identified in the APE as a result of the identification efforts described above. Two historic era cultural resources were identified in the APE. These are a segment of the Sutter-Butte Canal and the Thresher Weir. Due to the small scale and limited scope of the Project, the entirety of the Sutter-Butte Canal was not formally evaluated for NRHP eligibility; however, based on its historical impact on local agricultural and economic development in the region, the Sutter-Butte Canal is assumed eligible for NRHP inclusion. As the existing Thresher Weir is not yet 50 years old and does not represent a property of significant or exceptional importance, Reclamation has determined that the Thresher Weir is not eligible for NRHP inclusion.

### **3.4.2 Environmental Consequences**

#### No Action

Under the No Action Alternative, there would be no impact to cultural resources from implementation of this Project.

#### Proposed Action

Under the Proposed Action Alternative, the existing Thresher Weir would be removed and a new automated weir would be constructed approximately 100 feet downstream from its current location in the Sutter-Butte Canal. The Sutter-Butte Canal is assumed to be eligible for NRHP inclusion; however, the removal and replacement of the weir as proposed will not adversely affect the function or overall design of the canal, nor will it alter the characteristics for which it is assumed NRHP-eligible, i.e., water conveyance, agricultural development, and economic growth in the area. The Thresher Weir was determined to be not eligible for NRHP inclusion. Overall, the Proposed Action will result in no adverse effect to historic properties pursuant to 36 CFR Part 800.5(b). As

such, there will be no significant impacts to cultural resources from implementation of this project.

## **3.5 Indian Trust Assets**

### **3.5.1 *Affected Environment***

Indian Trust Assets (ITAs) are legal interests in property or rights held in trust by the United States for Indian Tribes or individuals. Trust status originates from rights imparted by treaties, statutes, or executive orders. These rights are reserved for, or granted to, tribes. A defining characteristic of an ITA is that such assets cannot be sold, leased, or otherwise alienated without federal approval.

Indian reservations, Rancherias, and allotments are common ITAs. Allotments can occur both within and outside of reservation boundaries and are parcels of land where title is held in trust for specific individuals. Additionally, ITAs include the right to access certain traditional use areas and perform certain traditional activities.

It is the policy of Reclamation to protect ITAs from adverse impacts resulting from its programs and activities whenever possible. Types of actions that could affect ITAs include an interference with the exercise of a reserved water right, degradation of water quality where there is a water right or noise near a land asset where it adversely affects uses of the reserved land.

### **3.5.2 *Environmental Consequences***

#### *No Action*

The No Action Alternative would have no effect on ITAs.

#### *Proposed Action*

The Proposed Action does not have a potential to affect ITAs. The nearest ITA is Mooretown Rancheria, which is approximately 11 miles northeast of the Project location.

## **3.6 Environmental Justice**

### **3.6.1 *Affected Environment***

Executive Order 12898 requires each federal agency to achieve environmental justice as part of its mission, by identifying and addressing disproportionately high adverse human health or environmental effects, including social and economic effects, of its programs and activities on minority populations and low-income populations of the United States.

### **3.6.2 Environmental Consequences**

#### No Action

The No Action Alternative would have no effect on low-income or minority individuals within the Project area.

#### Proposed Action

No significant changes in agricultural communities or practices would result from this Proposed Action. Accordingly, the Proposed Action would not have any impacts on low-income or minority individuals within the Project area.

## **3.7 Global Climate Change**

### **3.7.1 Affected Environment**

The United Nations Intergovernmental Panel on Climate Change predicts that changes in the earth's climate will continue through the 21st century and that the rate of change may increase significantly in the future because of human activity. Many researchers studying California's climate believe that changes in the earth's climate have already affected California and will continue to do so in the future. Climate change may seriously affect the State's water resources. Temperature increases could affect water demand and aquatic ecosystems. Changes in the timing and amount of precipitation and runoff could occur.

Climate change is identified in the 2005 update of the California Water Plan (Bulletin 160-05) as a key consideration in planning for the State's future water management. The 2005 Water Plan Update qualitatively describes the effects that climate change may have on the State's water supply. It also describes efforts that should be taken to quantitatively evaluate climate change effects for the next update to the Water Plan.

### **3.7.2 Environmental Consequences**

#### No Action

The No Action Alternative would have no effect on climate change.

#### Proposed Action

The construction period for the Proposed Project is anticipated to be two months. The equipment that will be used for the construction include: small earth moving equipment, tools required for construction of formwork, equipment needed for placement of concrete, and cranes for placing pre-assembled gates. The quantity of greenhouse gases produced during this construction period would be insignificant. The Proposed Action would not include any significant change on the composition of the atmosphere and therefore would not result in adverse impacts to climate change.

## 4.0 Cumulative Impacts

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According to the Council on Environmental Quality regulations for implementing the procedural provisions of NEPA, a cumulative impact is defined as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions.” Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

Reasonably foreseeable future actions include implementation of the SVIRWMP projects which include groundwater wells at Anderson-Cottonwood Irrigation District, Pelger/Sutter Mutual, and Meridian Farms. These sites are all several miles south of the Butte Water District and the Proposed Project would not contribute to any changes to groundwater conditions.

In 2005, BWD prepared an Environmental Resources Assessment to determine potential impacts of improvements along the Main Canal, including: 1) removal of bottlenecks in the Main Canal system, 2) concrete lining of the Main Canal system or part of the Main Canal, 3) installation of automated gates and weirs in all or part of the Main Canal, and 4) conjunctive management of surface and groundwater. The Proposed Action is the first of the improvements considered in the 2005 Assessment to be constructed. BWD does not anticipate removal of bottlenecks, concrete lining, or conjunctive management to be implemented any time in the foreseeable future, therefore no cumulative impacts are anticipated. However, BWD does anticipate rehabilitating other weirs along the Main Canal (projects similar to the Thresher Weir rehabilitation) at some point in the future. Rehabilitation of other weirs in the Main Canal would not result in cumulative impacts.

The Proposed Action would not result in cumulative impacts to any of those resources described within this EA.

## **5.0 Consultation and Coordination**

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This EA has been prepared in accordance with the requirements of NEPA. In addition to these laws described below, Reclamation is also complying with other applicable laws including the Clean Water Act of 1977, Clean Air Act of 1970, Executive Order 11988-Floodplain Management, Executive Order 11990-Protection of Wetlands, the Council of Environmental Quality Memorandum-Analysis of Prime or Unique Farmlands, and the Wild and Scenic Rivers Act.

### **5.1 Fish and Wildlife Coordination Act (16 USC. 651 et seq.)**

The Fish and Wildlife Coordination Act (FWCA) requires that Reclamation consult with fish and wildlife agencies (federal and state) on all water development projects that could affect biological resources. This is not a water development project; therefore, the FWCA does not apply.

### **5.2 Endangered Species Act (16 USC. 1521 et seq.)**

Section 7 of this Act requires Federal agencies to ensure that all federally associated activities within the United States do not jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of the critical habitat of these species. Action agencies must consult with the USFWS, which maintains current lists of species that have been designated as threatened or endangered, to determine the potential impacts a project may have on protected species. Reclamation determined that the Proposed Action is not likely to adversely affect federally proposed or listed threatened and endangered species or their proposed or designated critical habitat (in this case, GGS). A BA was prepared and request for concurrence that the project is not likely to adversely affect GGS sent on June 24, 2011. At the time of this writing, a response has not been received from USFWS, but is anticipated and will be received prior to preparation of the Final EA and signing of the Finding of No Significant Impact.

### **5.3 Migratory Bird Treaty Act (16 USC § 703 ET SEQ.)**

The Migratory Bird Treaty Act implements various treaties and conventions between the U.S. and Canada, Japan, Mexico and the former Soviet Union for the protection of migratory birds. Unless permitted by regulations, the Act provides that it is unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest, egg or product, manufactured or not. Subject to

limitations in the Act, the Secretary of the Interior (Secretary) may adopt regulations determining the extent to which, if at all, hunting, taking, capturing, killing, possessing, selling, purchasing, shipping, transporting or exporting of any migratory bird, part, nest or egg will be allowed, having regard for temperature zones, distribution, abundance, economic value, breeding habits and migratory flight patterns. The Proposed Action would not affect migratory birds therefore no further coordination is needed under the MBTA.

#### **5.4 National Historic Preservation Act (16 USC 470 et seq.)**

The NHPA of 1966, as amended, is the primary Federal legislation outlining the Federal government's responsibility to cultural resources. Specifically, Section 106 of the NHPA requires "[t]he head of any Federal agency having direct or indirect jurisdiction over a proposed Federal or federally assisted undertaking in any State and the head of any Federal department or independent agency having authority to license any undertaking shall, prior to the approval of the expenditure of any Federal funds on the undertaking or prior to the issuance of any license, as the case may be, take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register. The head of any such Federal agency shall afford the Advisory Council on Historic Preservation established under Title II of this Act a reasonable opportunity to comment with regard to such undertaking." The process for implementing Section 106 of the NHPA is found at 36 CFR Part 800.

The Section 106 process requires consultation with Indian tribes, other interested parties, and the State Historic Preservation Officer (SHPO), or Tribal Historic Preservation Officer (THPO) if applicable. Reclamation has identified and consulted with Indian tribes pursuant to 36 CFR Part 800, and will conclude consultation with the California SHPO prior to Project implementation.

#### **5.5 Public Review**

The Draft EA/IS was released for a 15-day public review period from July 14 through July 28, 2011. No comments were received.

## **6.0 List of Preparers and Reviewers**

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Ginger Gillin, Principal Environmental Scientist

### Genesis Society

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## 7.0 References

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([http://www.fws.gov/sacramento/es/programmatic\\_consultations.htm](http://www.fws.gov/sacramento/es/programmatic_consultations.htm)) Directly accessed via:  
<http://www.fws.gov/sacramento/es/documents/ggs%20appendix%20c.PDF>  
Accessed April 4, 2011.

## **Appendix A: Biological Assessment**

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