RECLAMATION

Managing Water in the West

Finding of No Significant Impact

Distribution Systems Improvements Project – Reclamation District 108

FONSI 18-06-MP

Prepared by:

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Natural Resource Specialist
Mid-Pacific Regional Office

Date: 1-14-19

Reviewed by:

Paul Zedonis
Environmental and Natural Resources
Supervisory Natural Resources Specialist/
Division Manager
Northern California Area Office

Date: 1-14-19

Approved by:

ELIZABETH W HADLEY for

Donald Bader
Area Manager
Northern California Area Office

Date: 1/14/19

U.S. Department of the Interior
Bureau of Reclamation

January 2019

1 Background

In accordance with the National Environmental Policy Act of 1969, as amended, the Bureau of Reclamation (Reclamation) prepared an Environmental Assessment (EA) to analyze impacts of granting a WaterSMART Water Use Efficiency Grant to Reclamation District 108 (District) for its Distribution Systems Improvements Project. The Proposed Action will replace twenty-seven manual water control gates with automated control gates and install 1.6 miles of underground irrigation water pipeline in their service area.

2 Alternatives Including the Proposed Action

2.1 No Action

For the No Action Alternative, Reclamation would not award the District with $750,000 in WaterSMART grant funds for the Proposed Action. The no action alternative assumes the District would not proceed with the project absent Reclamation funding.

2.2 Proposed Action

For the Proposed Action, Reclamation would award the District $750,000 in CALFED Water Use Efficiency grant funds to replace twenty-seven manual water control gates with automated control gates and install 1.6 miles of underground irrigation water pipeline in their service area. The total linear length of the project footprint is approximately 3.2 miles and the area of the impact footprint is approximately 15.5 acres.

3 Findings

Based on the attached EA, Reclamation finds that the Proposed Action is not a major Federal action that will significantly affect the quality of the human environment and preparation of an environmental impact statement is not required. Reclamation prepared the EA to include information absent from the District's 2018 Initial Study and Proposed Negative Declaration (IS/MND). The IS/MND was certified by the District in June 27, 2018. All resources analyzed in the IS/MND were found to either be less than significant or less than significant with mitigation measures incorporated.

The attached EA was prepared in accordance with the National Environmental Policy Act, Council on Environmental Quality regulations (40 CFR 1500-1508), and Department of the Interior Regulations (43 CFR Part 46). Analysis of the effects of the proposed action is provided in the attached EA, and the analysis in the EA is hereby incorporated by reference. Following are the reasons why the impacts of the proposed action are not significant:

1. The proposed action will not significantly affect public health or safety (40 CFR 1508.27(b)(2)).

2. The proposed action will not significantly impact natural resources and unique geographical characteristics such as historic or cultural resources; parks, recreation, and refuge lands; wilderness areas; wild or scenic rivers; national natural landmarks; sole or principal drinking water aquifers; prime farmlands; wetlands (Executive Order (EO) 11990); flood plains (EO 11988); national monuments; migratory birds; and other ecologically significant or critical areas (40 CFR 1508.27(b)(3)).

3. The proposed action will not have possible effects on the human environment that are highly uncertain or involve unique or unknown risks (40 CFR 1508.27(b)(5)).

4. The proposed action will neither establish a precedent for future actions with significant effects nor represent a decision in principle about a future consideration (40 CFR 1508.27(b)(6)).

5. There is no potential for the effects to be considered highly controversial (40 CFR 1508.27(b)(4)).

6. The proposed action will not have significant cumulative impacts (40 CFR 1508.27(b)(7)).

7. The proposed action will not adversely affect any districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places (40 CFR 1508.27(b)(8). Through correspondence dated November 20, 2018, the SHPO responded with no objection to Reclamation's finding of no historic properties affected pursuant to 36 CFR § 800.4(d)(1).

8. In consultation under Section 7 of the ESA, Reclamation requested formal consultation from the U.S. Fish and Wildlife Service that the Proposed Action may affect, and is likely to adversely affect giant garter snake, may affect but is not likely to adversely affect valley elderberry longhorn beetle, and may affect but is not likely to adversely affect western yellow-billed cuckoo in the Action Area. The U.S. Fish and Wildlife Service responded in November 30, 2018 and issued a Biological Opinion and concurred that effects to these species would be minimized by avoidance and minimization measures.

9. The proposed action will not violate federal, state, tribal or local law or requirements imposed for the protection of the environment (40 CFR 1508.27(b)(10)).

10. The proposed action will not affect Indian Trust Assets (512 DM 2, Policy Memorandum dated December 15, 1993).

11. Implementing the proposed action will not disproportionately affect minorities or low-income populations and communities (EO 12898).

12. The proposed action will not limit access to, and ceremonial use of, Indian sacred sites on Federal lands by Indian religious practitioners or significantly adversely affect the physical integrity of such sacred sites (EO 13007 and 512 DM 3).

RECLAMATION

Managing Water in the West

Environmental Assessment: 18-06-MP

Distribution Systems Improvements Project – Reclamation District 108

U.S. Department of the Interior
Bureau of Reclamation, Mid-Pacific Region

January 2019

Mission Statements

The Department of the Interior protects and manages the Nation's natural resources and cultural heritage; provides scientific and other information about those resources; and honors its trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated 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.

1. Introduction

In conformance with the National Environmental Policy Act of 1969 (42 U.S.C. 4321, et seq.), Council on Environmental Quality regulations (40 CFR 1500-1508), and Department of Interior regulations (43 CFR Part 46), the United States (U.S.) Bureau of Reclamation (Reclamation) prepared this Environmental Assessment (EA) to disclose potential environmental effects associated with providing partial funding to Reclamation District 108 (District). Funding, in the amount of $750,000, would be provided through Reclamation's CALFED Water Use Efficiency Grant to construct the District's Distribution Systems Improvements Project (Proposed Action). The Proposed Action is located in Colusa and Yolo Counties (Figure 1). The District would use the funding to replace 27 manual water control gates with automated control gates with stilling wells where needed and install 1.6 miles of underground irrigation water pipeline in their service area.

1.1 Need for the Proposal

The District has a Sacramento River Settlement Contract with Reclamation that allows for the diversion of up to 232,000 acre-feet annually from the Sacramento River. However, the district has completed water efficiency projects allowing the district to achieve a five-year average of 162,466 acre feet being diverted from the Sacramento. Due to ongoing water conservation efforts, the District estimates future water diversions from the Sacramento River would continue to be near the five-year average. The District is upstream of the California Bay-Delta on the Sacramento River; therefore, all the water diverted from the Sacramento River, 162,466 acre-feet directly affects the Delta. The District recognizes the need to conserve water and power to protect the environment. The proposed project would have multiple benefits, including allowing the District to decrease diversions from the Sacramento River by up to 2,587 acre-feet.

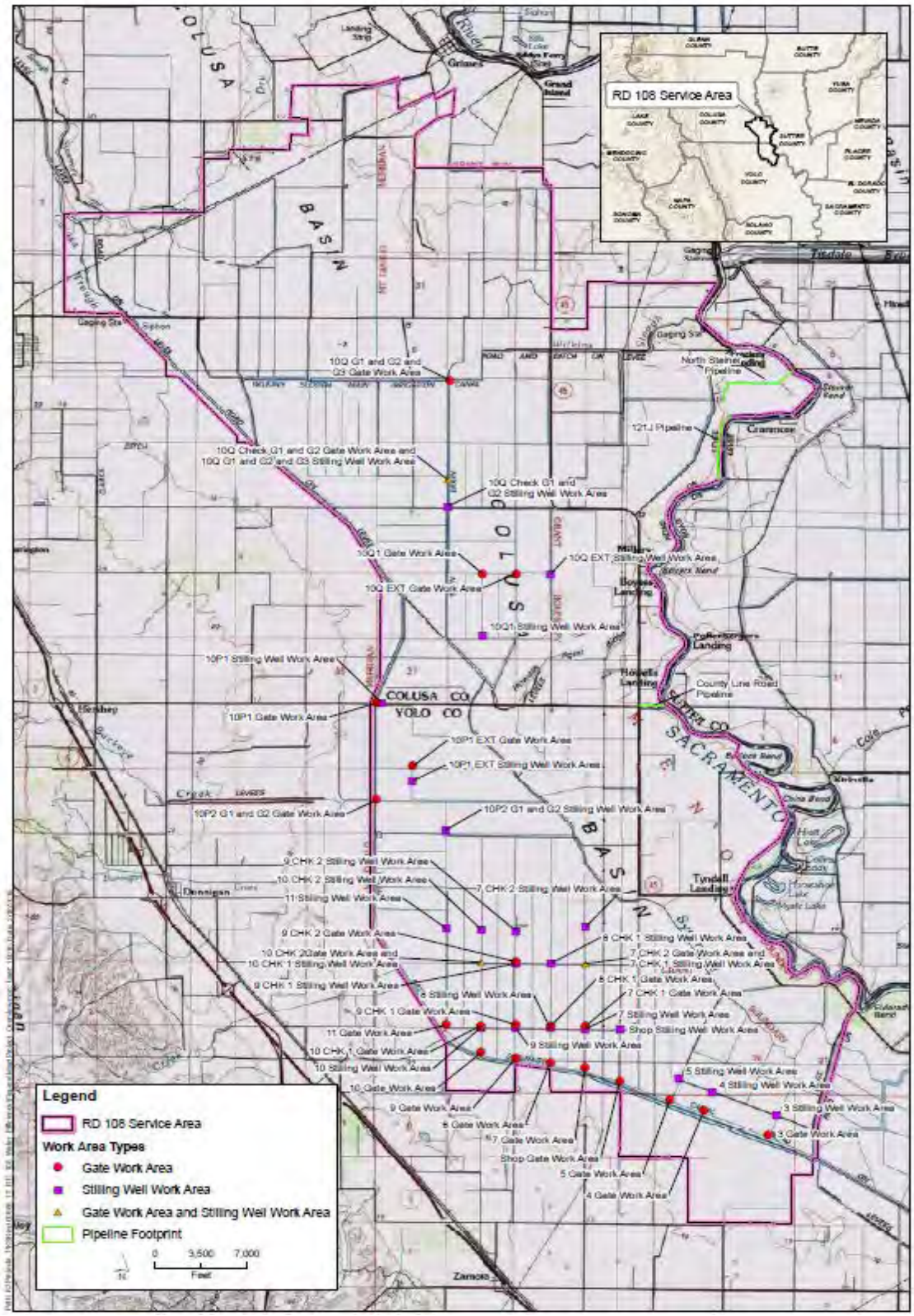


Figure 1: Reclamation District 108 Distribution System Improvements Project (ICF, 2018a).

1.2 Previous Environmental Documents

The Proposed Action underwent previous environmental review and regulatory compliance under the California Environmental Quality Act. An Initial Study and Proposed Mitigated Negative Declaration (IS/MND) was prepared and certified in June of 2018. The IS/MND evaluated the following resources; aesthetics, agricultural resources, air quality, biological resources (stream environment zones), cultural resources, geology, greenhouse gases and climate change, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, transportation and traffic, utilities and service systems, and mandatory findings of significance (ICF 2018a). All of the resources analyzed in the IS/MND were found to either have no effect, less than significant effect, or less than significant with mitigation measures incorporated. There were no significant and unavoidable impacts associated with the Proposed Action in the IS/MND (ICF 2018a). Reclamation reviewed the IS/MND and found the analysis sufficiently considered potential effects to the environment for the resources analyzed, and herby incorporates that analysis by reference. However, Reclamation determined that further analysis was needed for Cultural Resources, Indian Trust Assets, Indian Sacred Sites, Environmental Justice and Agencies/Persons Consulted. The IS/MND and its associated mitigation measures is available on the districts website at *http://www.rd108.org/wp-content/uploads/2018/05/DSIP_ISMND_May2018.pdf.*

2. Alternatives Including the Proposed Action

This EA considers two possible actions: "No Action Alternative" and "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 environment from the Proposed Action.

2.1 No Action Alternative

For the No Action Alternative, Reclamation would not award the District $750,000 in CALFED Water Use Efficiency grant funds to implement the Proposed Action. The consequences of Reclamation not providing funding for the Proposed Action would result in no construction. The no action alternative assumes the District would not proceed with the project absent Reclamation funding.

2.2 Proposed Action

For the Proposed Action, Reclamation would award the District $750,000 in CALFED Water Use Efficiency grant funds to replace 27 manual water control gates with automated control gates and install 1.6 miles of underground irrigation water pipeline in their service area. The total linear length of the project footprint including the 27 manual control gates is approximately 3.2 miles, and the area of the impact footprint is approximately 15.5 acres. The Proposed Project footprint encompasses the limits of disturbance and includes the gate locations where manual gates would be replaced, the areas where downstream stilling wells would be installed, and the corridors in which the two pipelines would be constructed.

2.2.1 Site Access and Staging

Access to the sites would be along existing road ways. All construction sites are located in or adjacent to agricultural fields within RD 108's service area. Staging and material stockpiling areas for the automatic gates would be located at each individual gate replacement site. Staging and material stockpile areas for the pipeline installation would be located adjacent to the pipeline and shift as needed along the alignment as installation progresses. The footprint of the pipeline is wide enough to accommodate pipe, excavated material, equipment, and trenching. All staging and stockpiling areas would be located in previously disturbed areas (e.g., dirt roads or agricultural fields) and no tree removal would be required.

2.2.2 Automatic Gate Installation

Twenty-seven manual control gates would be replaced with automated control gates that have remote monitoring capability. Each gate is located at a check structure that helps control flows along the associated canal or lateral. Automating the gates and check structures would allow for a more flexible on-demand system that would enable the use of portable pumps in a drip irrigation system to maximize on-farm efficiency without having excess operational spills, and would provide more accurate, rapid responses to changes in water levels.

Dewatering. Prior to the automatic gate installation, flows would be turned off to allow the construction area to be dry for at least 15 days prior to the start of earth-disturbing activities. Flows would be turned off by closing the gate immediately upstream of each gate replacement site. However, not all sites may drain completely due to variations in the bottom elevations of the canals.

If a site does not completely drain, an earthen cofferdam would be installed on the upstream side of the site (and/or downstream, if needed). For sites where the existing gate and pipe intersects another canal at a right angle (i.e., creating a "T-junction"), the cofferdam would be three sided to create a rectangular dewatering area. For sites where the existing gate and pipe are in line with the upstream channel (i.e., an "in-line" junction), the cofferdam would be placed approximately 15 to 20 feet upstream of the gate.

Cofferdam size and height would vary depending on water levels at the time of construction. A typical cofferdam would be approximately 20 feet by 20 feet for "T" junction sites, and approximately 20 feet by 15 feet for in-line sites. The cofferdam would be approximately 1 to 2 feet in height with up to a 4-foot-wide base. Sites requiring headwall installation may require dewatering but it is unlikely that sites with existing headwalls would require dewatering.

The cofferdams would be installed by placing clean earthen fill into the canal using an excavator and compacting the soil with the excavator bucket. The standing water would then be pumped over the cofferdam. Earthen fill will come from one of RD 108's stockpile areas that is kept for ongoing maintenance operations. The stockpile is located in a ruderal grassland adjacent to State Route 45 just east of the intersection with White Road. This

stockpile is regularly added to and borrowed from according to district maintenance needs. Once construction is complete the exacavator would be used to remove the cofferdam, making sure not to cut into the banks of the canal. It is not known which sites would require dewatering. All pumps for dewatering would have a screened intake.

Installation. Fourteen of the 27 manual control gates have existing concrete headwalls. Each gate would be removed and a new automated gate would be attached in its place. The new gate would be custom designed to fit the existing concrete structures with only minor retrofitting (e.g., drilling, coring, and grout patching). No heavy machinery would be required to replace gates and no vegetation clearing would be necessary. Construction sequencing for gate replacement at sites with existing headwalls is provided in Table 1.

Table 1. Sequencing for Existing Headwall Gate Replacement

Activity	Duration
Halting of flows and dewatering (if needed)	1 day
Dry period	15 days
Gate replacement	1 day
Installation of ancillary equipment (i.e., battery pack, antenna, and SCADA controls)	1 day
Stilling well installation	1 day

The remaining 13 gates lack an existing headwall. They are located at sites where an unpaved access road crosses the canal and a pipeline passes through the access road to maintain flows in the canal. At these sites, a precast Briggs concrete headwall with an automated control gate would be installed on the upstream end at each site. The existing pipe that runs through the access road would be replaced.

An excavator or backhoe would trench the length of the existing pipe running through the check structure. The trench depth would be limited to a maximum of 8 feet. The existing pipe would be removed and disposed of at the Yolo County Central Landfill. The new precast headwall would be lowered into place using a boom truck or excavator at the upstream end of the check structure, and the new pipe would then be installed.

The excavated soil would be backfilled over the pipeline and compressed with jumping jack compactors. All heavy machinery would be confined to upland areas. Construction sequencing for gate replacement at sites without existing headwalls is provided in Table 2.

Table 2. Sequencing for Existing Headwall Gate Replacement

Activity	Duration
Halting of flows and dewatering (if needed)	1 day
Dry period	15 days
Excavation; existing pipe and gate removal; new headwall, gate, and pipe installation; backfill of excavated soil	1 day
Installation of ancillary equipment (i.e., battery pack, antenna, and SCADA controls)	1 day
Stilling well installation	1 day

2.2.3 Pipeline Installation

The proposed action includes the construction of approximately 1.6 miles of buried pipeline split between two locations: the North Steiner Bend pipeline and the County Line Well pipeline. Construction methods and equipment used would be the same for the entire 1.6 miles of pipeline installation.

North Steiner Bend. The North Steiner Bend pipeline is served by the North Steiner Bend Pumping Plant, which is a small, approximately 10-cubic feet/second (cfs) unscreened point of diversion on the Sacramento River. Approximately 1.3 miles of 27-inch-diameter pipeline would be installed to provide an alternative source of water to the North Steiner Bend area and allow the North Steiner Bend Pumping Plant to be phased out of use and ultimately abandoned.

The North Steiner Bend pipeline would extend from the South Steiner pipeline, which receives water via the New Steiner Pumping Plant, to the North Steiner Pumping Plant site. The new pipeline would be within the footprint of the agricultural access roads, with the exception of one aerial drainage ditch crossing and crossing an agricultural field at the eastern end of the alignment. The new pipeline alignment would span a drainage ditch and connect to the standpipe that is currently served by the North Steiner Pumping Plant.

The pipeline would be installed using a backhoe or excavator to excavate a 3- to 6-foot-deep by 4-foot-wide trench. The excavated material would be temporarily set aside and stockpiled in a line until used to backfill the trench as work progresses. The construction footprint would varies between approximately 20 and 40 feet in width.

Any excess material would be used for maintenance of the access roads within the project footprint. Construction at the drainage ditch crossing would occur when the ditch is not conveying drainage from adjacent agricultural fields (in September or January through March), and the pipe span would be above the ordinary high water mark.

There is no action or physical modification associated with abandonment of the North Steiner Bend Pumping Plant. The pump station would be abandoned in place. The pump station may

be used occasionally during periods of high demand. The new pipeline would deliver water to the same standpipe that received water from the pump station.

County Line Well. Approximately 0.3-mile-long, 18-inch-diameter pipeline would be installed to allow the well to pump directly into a nearby supply canal through an outfall that would be installed on the canal's west side. This pipeline would be placed in the agricultural access roadway prism and be constructed using the same methods and equipment described above for the North Steiner Bend pipeline. The footprint for the County Line Well pipeline varies between approximately 15 and 60 feet in width. The existing drainage canal, which intermittently provided irrigation water and regularly provided tailwater drainage, will not be altered and will continue to serve as a drainage canal.

2.2.4 Demobilization and Cleanup

Once the automatic gate and pipeline installation is completed, the contractor would remove all construction equipment, temporary fencing, and unused material from the project area. In addition, all work areas would be cleaned. Any damages to roadways due to construction equipment would be repaired to pre-project conditions.

2.2.5 Construction Schedule

Construction activities are anticipated to begin in January 2019 and be completed in 9 months. Flows in the canals are frequently halted during the construction period under normal operations conducted by RD 108. Work hours would be limited to day light hours.

2.2.6 Environmental Commitments

As part of the Proposed Action, the District and its contractors, would implement mitigation measures included in the IS/MND for hydrology and water quality, biological resources, cultural resources, and hazards and hazardous materials (ICF 2018a). The mitigation measures (described in each respective resource section in the IS/MND) would reduce potential project effects to a less than significant level and are available on the District's website: *http://www.rd108.org/wp-content/uploads/2018/05/DSIP_ISMND_May2018.pdf*.

3. Affected Environment and Environmental Consequences

3.1 Required Resource Discussions

Department of Interior Regulations, Executive Orders, and Reclamation guidelines require a discussion of Native American Indian sacred sites, Indian Trust Assets, and Environmental Justice when preparing environmental documentation. Impacts to these resources were

considered and found to be minor or absent. Brief explanations for their elimination from further consideration are provided below.

3.1.1 Indian Trust Assets

Indian Trust Assets (ITA) are legal interests in property or rights held in trust by the U.S. for Indian Tribes or individual Indians. Indian reservations, Rancherias, and Public Domain Allotments are common ITA in California. The nearest ITA is the Yocha Dehe Wintun Nation located 20 miles southwest of the Proposed Action. The Proposed Action does not have a potential to affect ITA (Appendix A).

3.1.2 Indian Sacred sites

Executive Order 13007 (May 24, 1996) requires that federal agencies accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners on federal land, and avoids adversely affecting the physical integrity of such sacred sites. The Proposed Action would not be located on federal lands and therefore would not affect access to or use of Indian sacred sites on federal lands.

3.1.3 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. Reclamation has not identified adverse human health or environmental effects on any population as a result of implementing the Proposed Action, therefore, implementing the Proposed Action would not have significant or disproportionately negative impact on minority or low-income populations.

3.2 Environmental Consequences of the No Action Alternative

Under the No Action Alternative, Reclamation would not award the District with a CALFED Water Use Efficiency grant of $750,000. If the project is not implemented the District's ability to meet irrigation water demands in exceptionally dry years could be reduced or they would be required to increase pumping from the Sacramento River. Pumping from the Sacramento River would continue to pose an entrainment risk to winter-run salmon in the Sacramento River.

3.3 Environmental Consequences of the Proposed Action

The District contracted ICF to prepare an IS/MND for the Distribution Systems Improvements Project. According to the 2018 IS/MND, the impacts associated with the Proposed Action would occur only during the construction phase. All construction impacts would be short term and temporary. The 2018 IS/MND identified that hydrology and water quality, biological resources, cultural resources, and hazards and hazardous materials as having potentially significant impacts that would be less than significant with mitigation (ICF

2018a). There were no significant and unavoidable impacts associated with the Proposed Action (ICF 2018a).

Implementation of the Proposed Action would result in multiple environmental benefits. The new pipelines would allow the District to have an alternative water supply to draw from in critically dry years that could be used in lieu of Sacramento River water. The pipeline would also reduce vehicle trips and decreased travel time. The abandonment of a point of diversion on the Sacramento River without NOAA-approved fish screens would improve conditions for the winter-run salmon. Annual diversions from the Sacramento River would be decreased by up to 2,587 acre-feet from efficiently manage water delivery and use (2,465 acre-feet from reduced spills and 122 acre-feet from decreases in seepage and evaporation). This would increase water conservation and improve conditions for the winter-run salmon. In addition, power use would be reduced because of less pumping, resulting in an annual power savings of approximately $25,870 (ICF 2018a).

3.4 Cumulative Effects

According to CEQ 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 reasonable foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.7)."

The IS/MND evaluated cumulative effects and determined there would be no impact. The Proposed Action will have no effects to Indian Trust Assets, Indian Sacred Sites, or minority or low income populations. Therefore, there are no adverse effects associated with implementing the Proposed Action and no cumulative effects to consider.

4. Consultation and Coordination

4.1 Agencies and Persons Consulted

Reclamation consulted and coordinated with the SHPO, pursuant to 54 USC § 306108, commonly known as Section 106 of the NHPA, and its implementing regulation found at 36 CFR Part 800.

4.2 Endangered Species Act

Section 7 of the federal Endangered Species Act (ESA) (16 USC § 1531 et seq.) requires federal agencies, in consultation with the Secretary of the Interior, 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 critical habitat for these species.

A Biological Assessment was prepared for the Project that covers the Proposed Action area by ICF in June of 2018. Federally-listed species that may occur in the Action Area and may be affected by the Proposed Action are the giant gartersnake, valley elderberry longhorn beetle, and western yellow-billed cuckoo (ICF 2018b). The Biological Assessment concluded that effects to these species would be minimized by avoidance and minimization measures (ICF 2018b).

In consultation under Section 7 of the ESA, Reclamation requested formal consultation from the U.S. Fish and Wildlife Service that the Proposed Action may affect, and is likely to adversely affect giant gartersnake, may affect but is not likely to adversely affect valley elderberry longhorn beetle, and may affect but is not likely to adversely affect western yellow-billed cuckoo in the Action Area. The U.S. Fish and Wildlife Service responded in November 30, 2018 and issued a Biological Opinion (Appendix B).

4.3 National Historic Preservation Act

The National Historic Preservation Act of 1966, as amended (Title 54 USC § 306108.), requires that federal agencies give the Advisory Council on Historic Preservation an opportunity to comment on the effects of an undertaking on historic properties or properties that are eligible for inclusion in the National Register of Historic Places. The 36 CFR Part 800 regulations implement Section 106 of the National Historic Preservation Act. Compliance with Section 106 follows a series of steps that are designed to identify interested parties, determine the area of potential effects, conduct cultural resource inventories, determine if historic properties are present within the area of potential effects, and assess effects on any identified historic properties.

Reclamation initiated consultation with the SHPO by letter dated October 23, 2018 requesting concurrence with a finding of no historic properties affected by the proposed project. SHPO responded on November 20, 2018 with a concurrence on the finding of no historic properties pursuant to 36 CFR § 800.4(d)(1). Documentation of NHPA compliance can be found in Appendix C.

5. References

ICF. 2018a. Draft Initial Study for Distribution Systems Improvements Project. Prepared for: Reclamation District 108. Available: http://www.rd108.org/wp-content/uploads/2018/05/DSIP_ISMND_May2018.pdf

ICF. 2018b. Biological Assessment for the Distribution Systems Improvements Project. Prepared for: Reclamation District 108

Appendix A Indian Trust Assets

Date: 6/18/2018

Requested by (office / program)	Nathaniel Martin
Fund	18XR0687NA
WBS	RD108
Fund Cost Center	RX1852790130RD108
Region # (if other than MP)	
Project Name	Distribution Systems Improvements Project – Reclamation District 108
CEC or EA Number	18-06-MP
Project Description (attach additional sheets if needed and include photos if appropriate)	The District owns and operates numerous water control gates that help the District control irrigation flows in its extensive canal system. The District is proposing to replace 27 manual control gates with automated control gates that have remote monitoring capability. The District has an existing SCADA system, including some automated canals, and has been actively improving the water management of the distribution system to reduce operational spills. The gates are located on the upstream side of access roads that cross sections of the canals or laterals, with a pipe connecting the gate at the upstream end to an outlet at the downstream end of each crossing. Replacing these 27 manual control gates would build on the District's existing automation programs. Each gate is located at a check structure that helps control flows along the associated canal or lateral. Automating the gates and check structures would allow for a more flexible on-demand system that would enable the use of portable pumps in a drip irrigation system to maximize on-

***Project Location (Township, Range, Section, e.g., T12 R5E S10, or Lat/Long cords, DD-MM-SS or decimal degrees). Include map(s)**	See figure below.

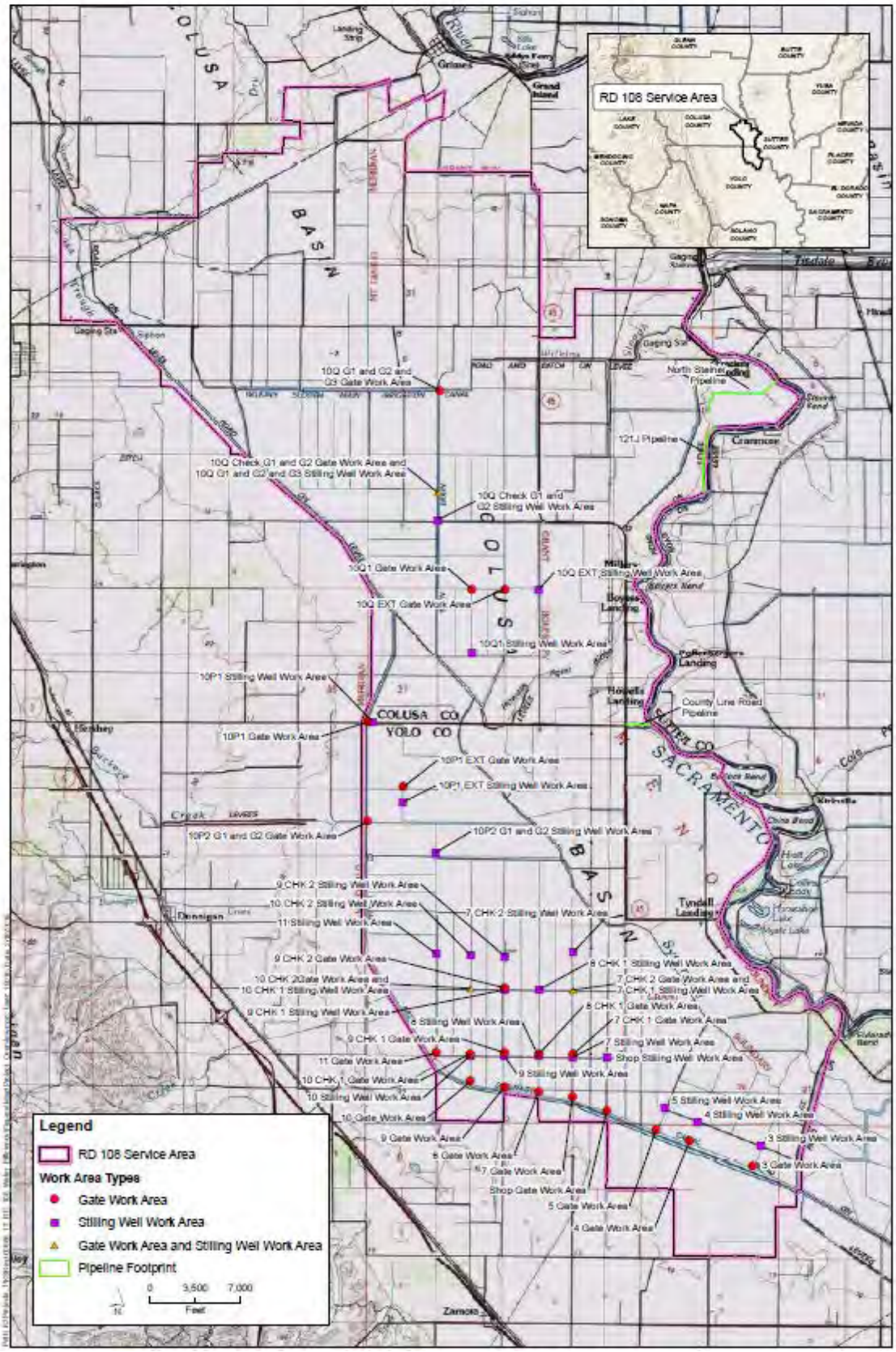
Nathaniel Martin	Nathaniel Martin	2/24/2016
Signature	Printed name of preparer	Date

ITA Determination:

The closest ITA to the proposed **Distribution System Improvements Project – Reclamation District 108** activity is the **Yocha Dehe Wintun Nation** about **20.17** miles to the **soutwest**. (See attached image).

Based on the nature of the planned work it **does not** appear to be in an area that will impact Indian hunting or fishing resources or water rights nor is the proposed activity on actual Indian lands. It is reasonable to assume that the proposed action **will not** have any impacts on ITAs.

K. Clancy	Kevin Clancy	6/19/2018
Signature	Printed name of approver	Date


RD 108 Service Area
10Q G1 and G2 and G3 Gate Work Area
10Q Check G1 and G2 Gate Work Area and 10Q G1 and G2 and G3 Stilling Well Work Area
10Q Check G1 and G2 Stilling Well Work Area
10Q1 Gate Work Area
10Q EXT Gate Work Area
10Q EXT Stilling Well Work Area
10Q1 Stilling Well Work Area
10P1 Stilling Well Work Area
10P1 Gate Work Area
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9 Gate Work Area
8 Gate Work Area
7 Gate Work Area
3 Gate Work Area
Shop Gate Work Area
5 Gate Work Area
4 Gate Work Area
COLUSA CO
YOLO CO
SUTTER CO
COLUSA BASIN
SACRAMENTO RIVER
North Stanley Pipeline
121J Pipeline
County Line Road Pipeline
Legend
RD 108 Service Area
Work Area Types
Gate Work Area
Stilling Well Work Area
Gate Work Area and Stilling Well Work Area
Pipeline Footprint
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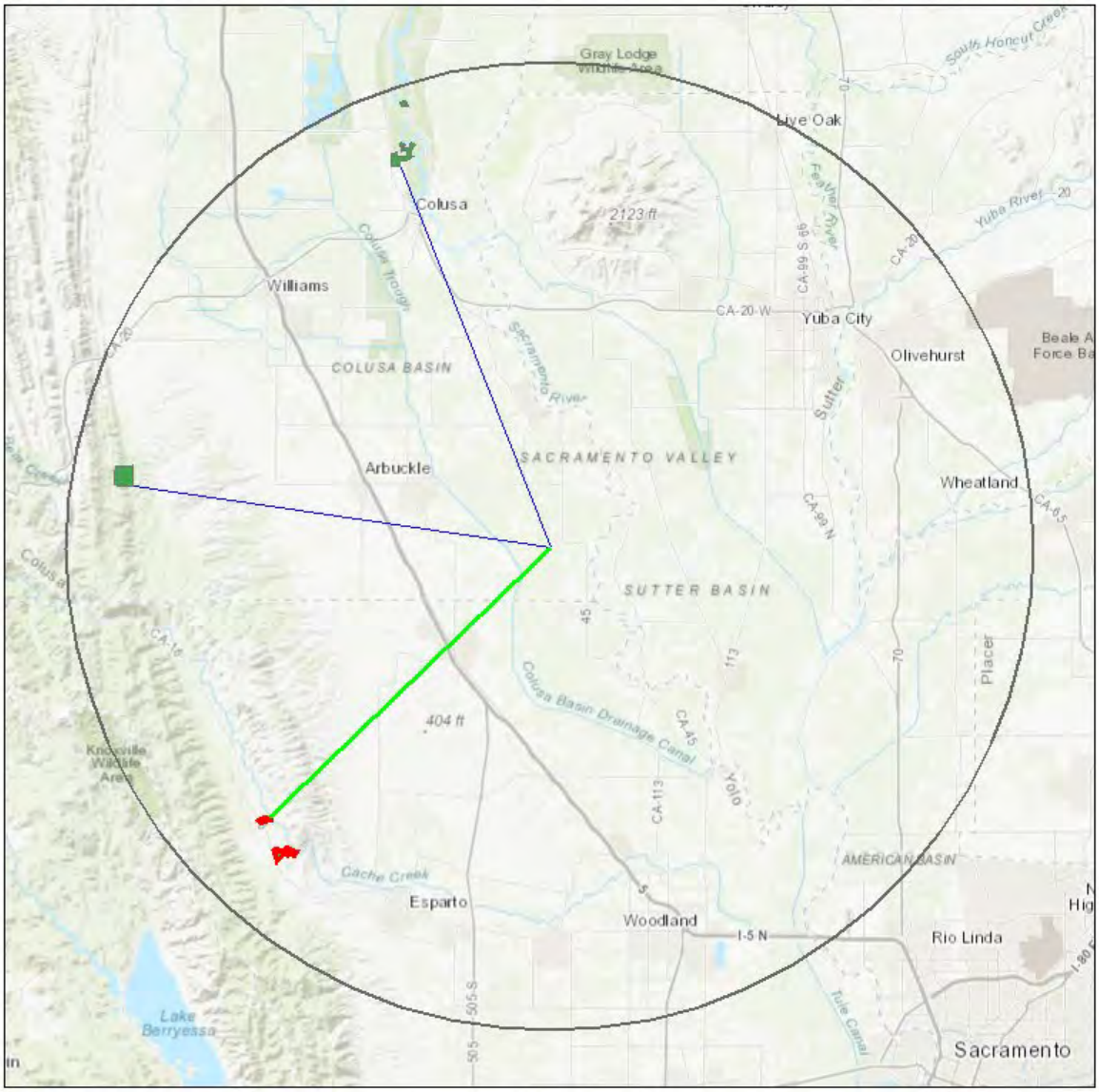
Feet

My Map Title

RECLAMATION
Managing Water in the West



Native American Lands FL

Rancheria

Miles
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N

Map created by: U.S. Bureau of Reclamation
Date: 6/18/2018

Appendix B USFWS Consultation

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Suite W-2605
Sacramento, California 95825-1846

In Reply Refer to:
08ESMF00-
2018-F-2976-2

NOV 3 0 2018

Memorandum

To: Regional Environmental Officer, Environmental Compliance Habitat Conservation Branch, U.S. Bureau of Reclamation, Sacramento, California

From: Field Supervisor, Sacramento Fish and Wildlife Office, U.S. Fish and Wildlife Service, Sacramento, California

Subject: Formal Consultation on the Reclamation District 108 Distribution System Improvements Project in Colusa and Yolo Counties, California (MP-150 ENV-7.00)

This memorandum (memo) is in response to the U.S. Bureau of Reclamation's (Bureau) July 23, 2018, request for initiation of formal consultation with the U.S. Fish and Wildlife Service (Service) on the Distribution System Improvements Project (proposed project) in Colusa and Yolo Counties, California. The Service received your initial request on July 23, 2018; however, all of the information necessary to begin consultation was not received until October 31, 2018. At issue are the proposed project's effects on the federally-listed as threatened giant garter snake (*Thamnophis gigas*) (snake), valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) (beetle), and western distinct population segment (DPS) of the yellow-billed cuckoo (*Coccyzus americanus*) (cuckoo). This response is provided under the authority of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act), and in accordance with the implementing regulations pertaining to interagency cooperation (50 CFR 402).

The federal action on which we are consulting is the Bureau giving funds to Reclamation District 108 (applicant) for the construction of two new irrigation pipelines (County Line Road and North Steiner Bend) to replace approximately 1.6 miles of unlined earthen ditches and the replacement of 27 manual control gates with automated control gates that have remote monitoring capabilities.

Pursuant to 50 CFR 402.12(j), you submitted a biological assessment for our review and requested concurrence with the findings presented therein. These findings conclude that the proposed project may affect, and is likely to adversely affect the snake. The findings also conclude that the proposed project may affect, but is not likely to adversely affect the beetle and the cuckoo. There is no designated or proposed critical habitat for the snake. The proposed project is not within designated or proposed critical habitat for any federally-listed species.

In considering your request, we based our evaluation on the following: (1) your July 23, 2018, memo requesting initiation of formal consultation and the attached July 2018 *Distribution Systems Improvement Project USFWS Biological Assessment* (biological assessment) prepared by ICF (consultant); (2) your October 30, 2018, memo with a revised project description and revised biological assessment; (3) the August 28, 2018, site visit with the Service, the Bureau, the applicant, and the consultant; (4) email

and in-person discussions between the Service and the Bureau; and (5) other information available to the Service.

Valley Elderberry Longhorn Beetle

The proposed project is within the known range of the beetle and there is suitable habitat adjacent to the proposed project. The life cycle of the beetle takes one or two years to complete, during which it spends most of its time within the stems of its sole host plant, the elderberry shrub (*Sambucus* sp.). The consultant conducted a reconnaissance-level survey to document the habitat for listed species on February 20, 2018, and identified one elderberry shrub 77 feet southeast from control gate 10P1 EXT. However, no exit-hole surveys were conducted. There are no known occurrences for the beetle in the California Natural Diversity Database (CNDDB) within five miles of the proposed project (CNDDB 2018).

No elderberry shrubs will be removed or transplanted to implement the proposed project. The following avoidance and minimization measures are proposed by the applicant to minimize disturbance to the beetle and its habitat:

1. Conduct Mandatory Biological Resources Awareness Training for All Project Personnel and Implement General Requirements. No less than 14 days prior to construction, the applicant will submit a request for Service-approval of the project biologists. The request will include education and experience related to the beetle. Before any ground-disturbing work (including vegetation clearing, grading, and equipment staging) occurs in the study area, a Service-approved biologist will conduct a mandatory biological resources awareness training for all construction personnel about sensitive biological resources (e.g., beetle). The training will cover the natural history, appearance (using representative photographs), and legal status of the beetle, regulatory protections, penalties for non-compliance, benefits of compliance, as well as the conservation measures to be implemented. Participants will be required to sign a form that states they have received and understand the training. The applicant will maintain this form with the project records and make it available to agencies, upon request. If new construction personnel are added to the proposed project, the contractor will ensure that the new personnel receive the mandatory training before starting work.

2. Conduct a Focused Survey for Elderberry Shrubs within 165 feet of the Project Footprint. A Service-approved biologist will conduct a pre-construction survey for elderberry shrubs within 165 feet of the construction limits. All elderberry shrubs will be mapped and identified for avoidance with flagging or fencing.

3. Locate Construction Footprint, including Staging Areas, at least 165 feet away from Elderberry Shrubs or Fence and Monitor Elderberry Shrubs during Construction. All staging areas for the proposed project will be located at least 165 feet away from elderberry shrubs where feasible. If a staging area or other construction-related activity must occur within 165 feet of an elderberry shrub, the shrub will be fenced and monitored during construction. Orange construction barrier fencing will be placed at the edges of buffer areas. For activities which could kill an elderberry shrub such as trenching or excavation, fencing will be placed 20 feet from the dripline of the shrub. For non-ground-disturbing activities, fencing will be placed at the dripline of the shrub. No construction activities will be permitted in the buffer zone other than those activities necessary to erect the fencing. Signs will be posted along the fencing for the duration of construction and will contain the following information:

This area is habitat of the valley elderberry longhorn beetle, a threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment.

Buffer area fences around elderberry shrubs will be inspected weekly by a Service-approved biological monitor until project construction is complete or until the fences are removed, as approved by the biological monitor and the resident engineer. The biological monitor will be responsible for ensuring that the contractor maintains the buffer area fences around the elderberry shrubs throughout construction. The biological monitor will also monitor the condition of the shrub (including the presence of dust). Any shrubs inside the 164 feet buffer area that become stressed or die will be reported to the Service. Biological inspection reports will be available to the project lead and the Service.

4. Water Down Construction Area to Control Dust. The applicant and its contractors will ensure that the action area will be watered down as necessary to prevent dust from becoming airborne and accumulating on elderberry shrubs adjacent to the construction limits. If the biological monitor determines that excessive dust is being generated by construction, watering frequency will be increased.

The Service concurs with your determination that the proposed project may affect, but is not likely to adversely affect the beetle. The proposed project reached the 'may affect' level, since the proposed project occurs within the range of the beetle and at least one elderberry shrub is in the action area. Due to the conservation measures proposed, which involve avoidance of any elderberry shrubs by a minimum of 20 feet, the Service believes that any potential adverse effects to the beetle from the proposed project are unlikely to occur, and are therefore discountable for the purposes of this consultation.

Western DPS of the Yellow-billed Cuckoo

The proposed project is within the range of the cuckoo. A small area of the eastern portion of the proposed project is adjacent to the Sacramento River, bordering a thin strip of non-orchard, riparian vegetation approximately 100 feet wide, which is not suitable for nesting. However, it can provide suitable resting habitat during migration (Halterman et al. 2016). The adjacent orchards along the northern portion of the proposed project may provide suitable nesting habitat for the cuckoo, depending on the density of the orchard. The proposed project will occur from January to mid-March 2019, and August to mid-October 2019 at the end of breeding season and during migration. There are no known occurrences for the cuckoo in the CNDDB within five miles of the proposed project (CNDDB 2018).

To implement the proposed project, working in riparian habitat will not be necessary. The following avoidance and minimization measures are proposed by the applicant to minimize disturbance to the cuckoo:

1. Cuckoo Monitoring. Call-back and nesting surveys (which require a 10(a)1(A) permit) for the cuckoo will not be conducted due to the limited riparian vegetation. However, a biologist with familiarity with the cuckoo and its habitat will monitor from June 1 – August 31 during the preconstruction surveys.

2. Biological Monitor Responsibility. If a cuckoo is observed during preconstruction or monitoring surveys, all work within 500 feet will stop until the cuckoo leaves the area. Any visual cuckoo sightings will be reported to the Service within three working days.

The Service concurs with your determination that the proposed project may affect, but is not likely to adversely affect the cuckoo. The proposed project reached the 'may affect' level, since the proposed project occurs within the known range of the cuckoo and a small portion of suitable resting and nesting habitat is within the action area. Due to the implementation of conservation measures, the proposed project not affecting riparian habitat, and the proposed work window which is outside of the nesting season but during the migration period, the Service believes that any potential adverse effects to the cuckoo from construction of the proposed project will be insignificant.

Consultation History

July 23, 2018:	The Service received the July 23, 2018, memo from the Bureau requesting initiation of formal consultation and its attached biological assessment.
August 14, 2018:	The Service requested a site visit to see the habitat and better understand the proposed project.
August 21, 2018:	The Service sent a memo to the Bureau requesting further information on the proposed action, the construction timeline, and the conservation measures.
August 27, 2018:	The Bureau provided a draft response with additional project information in advance of a scheduled site visit on August 28, 2018.
August 28, 2018:	Representatives of the Service, the Bureau, the applicant, and the consultant attended a site visit to discuss the proposed project design and effects to the snake.
October 31, 2018:	The Service received the October 30, 2018, memo from the Bureau with the revised biological assessment. October 31, 2018, was the official start date of formal consultation.

The remainder of this document provides our biological opinion on the effects of the proposed project on the snake.

BIOLOGICAL OPINION

Description of the Proposed Action

The proposed project is the construction of two new irrigation pipelines to replace approximately 1.6 miles of unlined earthen ditches, and the replacement of 27 manual control gates with automated control gates that have remote monitoring capabilities. See Figure 1 for the spatial layout of the proposed project. Work will occur from January to March 2019, August to mid-October 2019, and January to March 2020, if needed. The proposed project will decrease diversions of up to 2,857 acre-feet of water from the Sacramento River by managing water delivery more efficiently in the form of reducing spills and decreasing evaporation. Also, the proposed project will reduce the amount of power needed due to the more efficient delivery. The construction of the North Steiner Bend pipeline will also provide a new source of water to the North Steiner Bend area and allow the North Steiner Bend Pumping Plant to be phased out of use and ultimately abandoned. The proposed project occurs in southern Colusa and northern Yolo Counties in the Sacramento River Valley; and

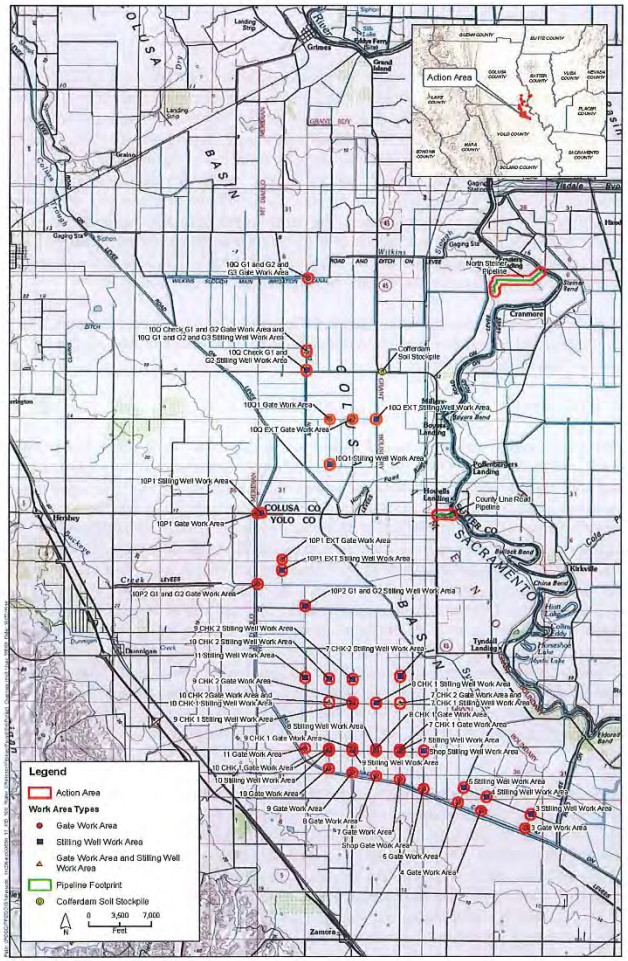

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Figure 1
Action Area and Project Components

is bounded by the Colusa Basin Drainage Canal (Colusa Drain) to the west and south, the Sacramento River to the east, and the Wilkins Slough Main Irrigation Canal to the north.

Irrigation Pipeline Installation

Both pipelines will be utilized to send water from pumping plants to the irrigation canals to prevent the evaporation of water between the pumping plant and the outfall in the canals. The North Steiner Bend pipeline and the County Line Well pipeline will cover a distance of 1.3 miles and 0.3 mile, respectively. Both pipelines will be in the footprint of agricultural access roads. However, the North Steiner Bend Pipeline will aerially cross a ditch to connect to the South Steiner Bend pipeline, and the installation will partly occur in non-flood irrigated cropland. Heavy equipment will be utilized to trench the agricultural roads, to place pipe in the trench, to backfill the trenches with the excavated soil, and to compact the soil as work progresses. The entire length of each trench will not be left open all at one time. Any remaining soil will be used to build up applicant-owned roads, so exporting soil off-site will not be necessary. All disturbed vegetation will be replaced with species found at the site or with a native seed mix, if the original vegetation was invasive.

Work on the pipelines will occur from mid-August to September of 2019, with the North Steiner Bend pipeline starting in September. Staging and material stockpile areas will shift along the alignment as the installation progresses.

Control Gate Replacement

Control gates are utilized to manage irrigation flows in its canal system. Each gate is located at a check structure that helps control flows in the associated canal. The applicant will replace 27 manual control gates with automated control gates. This action will occur at 23 sites: 20 sites have one gate, two sites have two gates, and one site has three gates. Work done at each site will depend on the presence of an existing concrete headwall. If a headwall is present, a new automated control gate custom-made to fit the existing concrete structure will be installed with only minor retrofitting to the concrete structure. Clearing vegetation and heavy equipment will not be required at these sites. If a headwall is absent, a precast concrete headwall and an automated control gate will be installed, and the existing pipe that runs from the check structure under the road will be removed. Vegetation clearing may be done at these sites, and all disturbed vegetation will be replaced with species found at the site or with a native seed mix, if the original vegetation was invasive. Heavy equipment will be utilized to excavate in the canals for the headwall installation, to trench the length of existing pipes running through the check structure to a maximum of 8 feet deep, to place the new headwall in the canal, to backfill the trenches with the excavated soil, and to compact the soil. Any remaining soil will be used on applicant-owned roads. The existing pipes will be disposed at the Yolo County Central Landfill.

The applicant will install remote operating equipment after the installation of the applicable automated control gates. Heavy equipment will be used to trench the canal bank from the stilling well to the downstream control gate. The stilling well will be connected to the downstream control gate using wires, which will be inside of a pipe placed in the trench. Afterwards, the trench will be backfilled with the excavated soil and compacted. Each automated control gate will use a solar power system with a battery backup for normal, remote operations with the option to control the gates manually as a backup. All disturbed vegetation will be replaced with species found at the site or with a native seed mix, if the original vegetation was invasive.

For each gate replacement, flows in the canal will be stopped at the immediate upstream gate to allow the construction area to dry for at least 15 days prior to the start of earth-disturbing activities.

Not all sites may drain completely due to variation in the bottom elevations of the canals. If a site does not drain completely, an earthen cofferdam will be installed on the upstream side of the project site and, if necessary, on the downstream side of the project site. For sites where a canal intersects another canal, three cofferdams will be used. The cofferdams will be about 1 to 2 feet high with the width and depth varying on the project location. A pump with a screened intake will be used to remove the water from the project area after the installation of the cofferdams.

Work on the control gates with an existing headwall will occur from January to mid-March 2019, and work on the control gates without an existing headwall will occur from September through mid-October 2019. Work at each site will take approximately three weeks to complete. Staging and material stockpiling areas will be located anywhere within the boundary of each individual construction site. Fill for the earthen cofferdams will come from current stockpiles on the property.

Operation and Maintenance Activities

Normal operations of the canals will resume once construction is completed. The pipelines are not anticipated to require operations and maintenance (O&M) activities after installation; however, O&M activities for the new automated control gates are expected to be minimal (e.g., keeping the machines oiled and painting the gates). Overall, the proposed action will have reduced O&M activities compared to the present system. However, if future O&M activities affect the snake, another section 7 consultation will be required.

Equipment

A backhoe, an excavator, a boom truck, shovels, jumping jack compactors, and other hand tools will be used for construction. Construction materials will be transported to and from the project sites using standard delivery trucks and semi-trucks.

Conservation Measures

The applicant proposed and will implement conservation measures to minimize the effects to the snake. Due to the length of the conservation measures, a summary has been provided below. Detailed conservation measures are on pages 2-7 through 2-13 of the biological assessment.

1. Conduct Mandatory Biological Resources Awareness Training. No less than 14 days prior to construction, the applicant will submit a request for Service-approval of the project biologists. The request will include education and experience related to the snake. Before any ground-disturbing work (including vegetation clearing, grading, and equipment staging) occurs in the study area, a Service-approved biologist will conduct a mandatory biological resources awareness training for all construction personnel about sensitive biological resources (e.g., snake). The training will cover the natural history, appearance (using representative photographs), and legal status of the snake, regulatory protections, penalties for non-compliance, benefits of compliance, as well as the conservation measures to be implemented. Participants will be required to sign a form that states they have received and understand the training. The applicant will maintain this form with the project records and make it available to agencies, upon request. If new construction personnel are added to the proposed project, the contractor will ensure that the new personnel receive the mandatory training before starting work.

2. General Measures. Requirements that will be followed by construction personnel are listed below.
   - The applicant will clearly delineate the construction limits with survey tape, pin flags, orange barrier fencing, or other means, and prohibit any construction-related traffic outside these boundaries.
   - Construction vehicles will observe the posted speed limit on hard-surfaced roads and a 10-mile-per-hour speed limit on unpaved roads during travel in the construction area.
   - Construction vehicles and equipment will restrict off-road travel to the designated construction areas.
   - Construction vehicles and equipment left onsite overnight will be thoroughly inspected each day for snakes (both underneath the vehicles and in open cabs) before they are moved.
   - All food-related trash will be disposed of in closed containers and removed from the construction area daily during the construction period. Construction personnel will not feed or otherwise attract fish or wildlife to the construction site.
   - No pets or firearms will be allowed in the construction area.
   - To avoid entrapment of wildlife, all excavated steep-walled holes or trenches more than one foot deep will either be properly covered or provided with one or more escape ramps constructed of earth fill or wooden planks at the end of each workday. If left open overnight, the hole or trench will be inspected by a Service-approved biologist prior to it being backfilled.
   - To prevent possible resource damage from hazardous materials such as motor oil or gasoline, construction personnel will not service vehicles or construction equipment within 200 feet of wet canals.

3. Designate a Project Representative. The applicant will designate a project representative as the contact for any employee or contractor who inadvertently injures or kills a special-status species or finds one dead, injured, or entrapped. The representative will be identified during the environmental awareness program. If a special-status species is found dead, injured, or entrapped in the project area, the project representative will immediately notify the applicant, who will provide notification to the Service's Sacramento Fish and Wildlife Office (SFWO) and the local California Department of Fish and Wildlife (CDFW) warden or biologist within three (3) working day. The notification will include the date, time, location of the incident or of the finding of the dead or injured animal, and any other pertinent information. The Service contact is the Sacramento Valley Division Chief at the SFWO, (916) 414-6631.

4. Retain a Biological Monitor. The applicant will retain a Service-approved biologist to monitor construction activities adjacent to sensitive biological resources (e.g., snake habitat). No less than 14 days prior to construction, the applicant will submit a request for Service approval of the project biologists. The request will include education and experience related to the snake and the beetle. Once approved, the biologist will assist the construction crew, as needed, to comply with all proposed project implementation restrictions and guidelines. In addition, the biologist will be responsible for ensuring that the applicant or its contractors maintain the construction barrier fencing adjacent to sensitive biological resources, including elderberry shrubs. Prior to ground-disturbing activities within suitable aquatic and upland habitat for the snake (undeveloped areas within 200 feet of suitable aquatic habitat), a Service-approved biologist will conduct a preconstruction survey for the snake and inspect construction barrier and/or exclusion fencing to ensure they are intact at the beginning of each work day.

5. Install, Maintain, and Monitor Exclusion Fencing. To reduce the likelihood of snakes entering the construction area, the applicant will install exclusion fencing to the extent practicable along the portions of the construction area that are within 200 feet of suitable aquatic habitat and provide suitable upland habitat, as determined by the approved biologist. The exclusion fencing will be installed during the active period for snakes (May 1-October 1) to reduce the potential for injury and mortality during this activity. Weekly monitoring summary reports will be provided to the applicant and the Service, as necessary. A Service-approved biologist will inspect exclusion fences daily during ground-disturbing activities and weekly after ground-disturbing activities until construction is complete or until the fences are removed, as approved by the biological monitor. If the installation of exclusion fencing is not feasible, a full-time biological monitor will be present during all construction activities.

6. Exclusion Fencing Requirements. The exclusion fencing will consist of three-foot-tall silt fencing buried four to six inches below ground level. The exclusion fencing will ensure that snakes are excluded from the construction area and that suitable aquatic and upland habitat is protected during construction. The orange construction barrier fencing will be commercial-quality, four-foot-high, woven polypropylene (Tensor Polygrid or equivalent). The fencing will be tightly strung on posts with a maximum of 10-foot spacing. The orange construction barrier fencing can be attached to the exclusion fencing or the exclusion fencing can double as construction barrier fencing if it is orange in color and at least four feet tall. To prevent snakes and other ground-dwelling animals from being caught in the orange construction fencing, it will be placed so that there is a one-foot gap between the ground and the bottom of the orange construction fencing. The fencing requirements will be included in the construction specifications, and a Service-approved biologist will be onsite to direct and monitor exclusion fencing installation.

7. Dewatering. The applicant will implement the following measures to minimize potential impacts of dewatering channels on snakes.
   - All channels will be inspected for the presence of snakes by the approved biologist immediately prior to dewatering. The approved biologist will monitor the dewatering activity until the biologist determines that monitoring is no longer needed (e.g., once the channel is fully dewatered and once exclusion fencing has been installed).
   - Channels within work areas will be sufficiently dry (no standing water) prior to excavating or filling of the dewatered habitat. If the channels within the work areas are not fully drained prior to construction, the approved biologist will inspect the exclusion fencing and survey the work area for snakes each morning prior to construction in the area.

8. Staging Areas. Staging areas will be located more than 200 feet from suitable aquatic habitat for the snake (as determined by the Service-approved biologist) or will be fenced with exclusion fencing prior to the start of construction and between May 1 and October 1.

9. Heavy Equipment Use. The movements of heavy equipment within 200 feet of the banks of suitable aquatic habitat for the snake will be confined to existing roads to minimize habitat disturbance.

10. Prepare and Implement a Spill Prevention, Control, and Countermeasure Plan. A spill prevention, control, and countermeasure plan (SPCCP) is intended to prevent any discharge of oil into navigable water or adjoining shorelines. The applicant or its contractor will develop and implement an SPCCP to minimize the potential for and effects from spills of hazardous, toxic, or petroleum substances during construction and operation activities.

11. Restore Temporarily Disturbed Aquatic and Upland Habitat to Pre-Action Conditions. Upon completion of the proposed action, the applicant will restore temporarily disturbed habitat for the snake to pre-project conditions. These areas are adjacent to and within the canal prism and are currently subject to agricultural management activities. Habitat will be restored within one season (defined as May 1 – October 1).

12. Compensate for Permanent Loss of Aquatic Habitat for the Snake. The applicant proposes providing 0.012 acres of compensation for the permanent fill of 0.004 acres of snake habitat by purchasing snake preservation credits at a Service-approved conservation bank prior to any construction activities.

Action Area

The action area is defined in 50 CFR 402.02, as "all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action." The action area for this project is not a continuous area, but is a combination of 29 separate sites where activities will occur (Figure 1). For the proposed project, the action area encompasses the construction footprint of the 27 manual-control gates and 1.6 miles of pipelines in agricultural roads, the 500-foot buffer around the construction area, and the earthen fill stockpile.

Analytical Framework for the Jeopardy Determinations

Section 7(a)(2) of the Act requires that federal agencies ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of listed species. "Jeopardize the continued existence of" means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species (50 CFR 402.02).

The jeopardy analysis in this biological opinion considers the effects of the proposed federal action, and any cumulative effects, on the range wide survival and recovery of the listed species. It relies on four components: (1) the *Status of the Species*, which describes the range wide condition of the species, the factors responsible for that condition, and its survival and recovery needs; (2) the *Environmental Baseline*, which analyzes the condition of the species in the action area, the factors responsible for that condition, and the relationship of the action area to the survival and recovery of the species; (3) the *Effects of the Action*, which determines the direct and indirect impacts of the proposed federal action and the effects of any interrelated or interdependent activities on the species; and (4) the *Cumulative Effects*, which evaluates the effects of future, non-federal activities in the action area on the species.

Status of the Species

For the most recent comprehensive assessment of the range-wide status of the snake, please refer to the *Giant Garter Snake (Thamnophis gigas) 5-year Review: Summary and Evaluation* (Service 2012). The Service did not recommend a change in the snake's listing status in this 5-year review. The abundance and distribution of the snake has not changed significantly, although some populations remain in danger of extirpation due to small population sizes and low habitat quality. The threats discussed have continued to act on the snake, with the loss and fragmentation of habitat having the most significant effect. While the snake continues to lose suitable habitat throughout its range, to date no project has proposed a level of effect for which the Service issued a biological opinion of jeopardy for the snake. The Service has not designated or proposed critical habitat for the snake.

Environmental Baseline

The proposed project is located in the southern portion of the Colusa Basin Recovery Unit, identified in the *Recovery Plan for the Giant Garter Snake* (Recovery Plan) (Service 2017). Habitat loss and fragmentation due to land use changes and methods of rice production are the largest threat to the snake. Other threats in the action area include changes in water availability, levee and canal maintenance, water management and water deliveries which do not account for the snake, water transfers, contaminants, small populations, and encounters with humans.

The snake occurs in and around the proposed project, particularly near the Colusa Drain where there are 25 CNDDB occurrences (CNDDB 2018). The population centered around the Colusa Drain is one of the oldest known populations in the Sacramento River Valley and has been studied since at least 1980 (e.g., Hansen and Brode 1980). The snake forages in the irrigation canals, and brumates in the burrows found along the levees in the action area. The snake likely uses the proposed project for all life stages since suitable aquatic and upland habitat is present. In three surveys from 2003 to 2006, Wylie et al. (2008) estimated that the density of snakes along the Colusa Drain was between 12 and 35 snakes per kilometer.

Land use around the North Steiner Bend Pipeline project site is mostly non-flood-irrigated crops, with some flood-irrigated crops (e.g., rice) and walnut groves. A ditch runs parallel to the proposed project that the pipeline will aerially cross near the western terminus. Emergent vegetation and summer water were present during the August 28, 2018, site visit, which provides suitable aquatic and upland habitat for the snake. At the County Line Well Pipeline site, the land use is non-flood-irrigated crops and a walnut grove. Farmers do not plant the non-irrigated cropland every year. During the August 28, 2018, site visit, there was no summer water in the parallel ditch.

The 27 control-gate sites are throughout the proposed project and abut lands of varying agriculture use. The gates near the southern end of the proposed project provide suitable habitat with flood-irrigated cropland (e.g., rice) on both sides of the irrigation canals. During the August 28, 2018, site visit, the channels were observed to provide suitable aquatic and upland habitat for the snake due to emergent vegetation and summer water.

Effects of the Action

Irrigation Pipeline Installations

Construction activities that occur in suitable snake habitat, particularly at the North Steiner Bend Pipeline project site, have the potential to injure or kill a snake. Noise and vibrations from construction activities will cause snakes to leave the proposed project and will make them more vulnerable to predation. Exclusion fencing will be used within 200 feet of suitable habitat to prevent the snake from moving into the project area. Equipment can injure or kill a snake if the snake is basking in upland refugia and does not move away as the equipment travels between construction areas. Construction activities will be limited to the active period of the snake (May to October), when the snake has the potential to move away.

The proposed project is to install two pipelines in current footprints of agricultural access roads. However, the North Steiner Bend Pipeline will aerially cross a ditch and will enter non-flood irrigated cropland. Entering non-irrigated cropland and working in the footprint of the road will not have a direct effect on snake habitat. However, the North Steiner Bend Pipeline at the ditch will affect 0.002 acre of suitable upland snake habitat. The permanent loss of upland habitat will remove opportunities for the snake to bask and to use as winter refugia. Snakes will no longer be able to

Environmental Baseline

The proposed project is located in the southern portion of the Colusa Basin Recovery Unit, identified in the *Recovery Plan for the Giant Garter Snake* (Recovery Plan) (Service 2017). Habitat loss and fragmentation due to land use changes and methods of rice production are the largest threat to the snake. Other threats in the action area include changes in water availability, levee and canal maintenance, water management and water deliveries which do not account for the snake, water transfers, contaminants, small populations, and encounters with humans.

The snake occurs in and around the proposed project, particularly near the Colusa Drain where there are 25 CNDDB occurrences (CNDDB 2018). The population centered around the Colusa Drain is one of the oldest known populations in the Sacramento River Valley and has been studied since at least 1980 (e.g., Hansen and Brode 1980). The snake forages in the irrigation canals, and brumates in the burrows found along the levees in the action area. The snake likely uses the proposed project for all life stages since suitable aquatic and upland habitat is present. In three surveys from 2003 to 2006, Wylie et al. (2008) estimated that the density of snakes along the Colusa Drain was between 12 and 35 snakes per kilometer.

Land use around the North Steiner Bend Pipeline project site is mostly non-flood-irrigated crops, with some flood-irrigated crops (e.g., rice) and walnut groves. A ditch runs parallel to the proposed project that the pipeline will aerially cross near the western terminus. Emergent vegetation and summer water were present during the August 28, 2018, site visit, which provides suitable aquatic and upland habitat for the snake. At the County Line Well Pipeline site, the land use is non-flood-irrigated crops and a walnut grove. Farmers do not plant the non-irrigated cropland every year. During the August 28, 2018, site visit, there was no summer water in the parallel ditch.

The 27 control-gate sites are throughout the proposed project and abut lands of varying agriculture use. The gates near the southern end of the proposed project provide suitable habitat with flood-irrigated cropland (e.g., rice) on both sides of the irrigation canals. During the August 28, 2018, site visit, the channels were observed to provide suitable aquatic and upland habitat for the snake due to emergent vegetation and summer water.

Effects of the Action

Irrigation Pipeline Installations

Construction activities that occur in suitable snake habitat, particularly at the North Steiner Bend Pipeline project site, have the potential to injure or kill a snake. Noise and vibrations from construction activities will cause snakes to leave the proposed project and will make them more vulnerable to predation. Exclusion fencing will be used within 200 feet of suitable habitat to prevent the snake from moving into the project area. Equipment can injure or kill a snake if the snake is basking in upland refugia and does not move away as the equipment travels between construction areas. Construction activities will be limited to the active period of the snake (May to October), when the snake has the potential to move away.

The proposed project is to install two pipelines in current footprints of agricultural access roads. However, the North Steiner Bend Pipeline will aerially cross a ditch and will enter non-flood irrigated cropland. Entering non-irrigated cropland and working in the footprint of the road will not have a direct effect on snake habitat. However, the North Steiner Bend Pipeline at the ditch will affect 0.002 acre of suitable upland snake habitat. The permanent loss of upland habitat will remove opportunities for the snake to bask and to use as winter refugia. Snakes will no longer be able to

Environmental Baseline

The proposed project is located in the southern portion of the Colusa Basin Recovery Unit, identified in the *Recovery Plan for the Giant Garter Snake* (Recovery Plan) (Service 2017). Habitat loss and fragmentation due to land use changes and methods of rice production are the largest threat to the snake. Other threats in the action area include changes in water availability, levee and canal maintenance, water management and water deliveries which do not account for the snake, water transfers, contaminants, small populations, and encounters with humans.

The snake occurs in and around the proposed project, particularly near the Colusa Drain where there are 25 CNDDB occurrences (CNDDB 2018). The population centered around the Colusa Drain is one of the oldest known populations in the Sacramento River Valley and has been studied since at least 1980 (e.g., Hansen and Brode 1980). The snake forages in the irrigation canals, and brumates in the burrows found along the levees in the action area. The snake likely uses the proposed project for all life stages since suitable aquatic and upland habitat is present. In three surveys from 2003 to 2006, Wylie et al. (2008) estimated that the density of snakes along the Colusa Drain was between 12 and 35 snakes per kilometer.

Land use around the North Steiner Bend Pipeline project site is mostly non-flood-irrigated crops, with some flood-irrigated crops (e.g., rice) and walnut groves. A ditch runs parallel to the proposed project that the pipeline will aerially cross near the western terminus. Emergent vegetation and summer water were present during the August 28, 2018, site visit, which provides suitable aquatic and upland habitat for the snake. At the County Line Well Pipeline site, the land use is non-flood-irrigated crops and a walnut grove. Farmers do not plant the non-irrigated cropland every year. During the August 28, 2018, site visit, there was no summer water in the parallel ditch.

The 27 control-gate sites are throughout the proposed project and abut lands of varying agriculture use. The gates near the southern end of the proposed project provide suitable habitat with flood-irrigated cropland (e.g., rice) on both sides of the irrigation canals. During the August 28, 2018, site visit, the channels were observed to provide suitable aquatic and upland habitat for the snake due to emergent vegetation and summer water.

Effects of the Action

Irrigation Pipeline Installations

Construction activities that occur in suitable snake habitat, particularly at the North Steiner Bend Pipeline project site, have the potential to injure or kill a snake. Noise and vibrations from construction activities will cause snakes to leave the proposed project and will make them more vulnerable to predation. Exclusion fencing will be used within 200 feet of suitable habitat to prevent the snake from moving into the project area. Equipment can injure or kill a snake if the snake is basking in upland refugia and does not move away as the equipment travels between construction areas. Construction activities will be limited to the active period of the snake (May to October), when the snake has the potential to move away.

The proposed project is to install two pipelines in current footprints of agricultural access roads. However, the North Steiner Bend Pipeline will aerially cross a ditch and will enter non-flood irrigated cropland. Entering non-irrigated cropland and working in the footprint of the road will not have a direct effect on snake habitat. However, the North Steiner Bend Pipeline at the ditch will affect 0.002 acre of suitable upland snake habitat. The permanent loss of upland habitat will remove opportunities for the snake to bask and to use as winter refugia. Snakes will no longer be able to

thermoregulate above- or below-ground, seek protection from predators, or find hibernacula in these upland areas. However, additional suitable habitat is in the vicinity of the proposed project. Any areas temporarily affected by the proposed project will be revegetated to the pre-project condition to offset the effect of temporary habitat loss. The Service expects temporary disturbance to upland habitat to last one season.

Control Gate Replacement

Due to the proposed installation of exclusion fencing, snakes are unlikely to be found within the proposed project during construction. Any snakes attempting to move into or through the proposed project will be unable to enter the area due to the exclusion fencing and will have to utilize habitat elsewhere. However, construction activities that occur in suitable snake habitat have the potential to injure or kill a snake. Equipment can injure or kill a snake if the snake is basking in upland refugia and does not move away as the equipment travels between construction areas. Noise and vibrations from construction activities will cause snakes to leave the proposed project area and will make them more vulnerable to predation. The installation of concrete headwalls and the installation of the stilling wells will be limited to the active period of the snake (May to October), when the snake has the potential to move away. The installation of automated control gates at sites with an existing headwall will occur during the inactive period of the snake, when digging is not required.

Digging and vegetation removal for the installation of the concrete headwalls and the stilling wells will result in the temporary loss of 0.070 acre of upland habitat. The 0.070 acre of upland habitat temporarily affected by the proposed project will be revegetated to the pre-project condition to offset the effect of the temporary habitat loss. The Service expects temporary disturbance to upland habitat to last one season, which will allow the snake to move back in the next season. The snake has the potential to forage in the adjacent irrigated cropland (e.g., rice) during construction.

Work will be done during the periods when water isn't normally in the channels. However, construction will result in the temporary loss of 0.076 acre of aquatic habitat. If water is in the channel, the work sites will be drained of water by closing the immediately upstream control gate and waiting 15 days for the project area to dry before the start of construction. If the work site doesn't drain completely, an earthen cofferdam will be erected and the remaining water will be pumped out of the project area using a screened intake pump. Once the areas have been dewatered, any snakes attempting to move into or through the dewatered areas will be unable to enter the area due to the exclusion fencing at the limits of dewatering and will have to utilize habitat elsewhere. The 0.076 acre of aquatic habitat that will be temporarily dewatered during the proposed project will be available to the snakes after the removal of the cofferdams.

The installation of the concrete headwalls will permanently impact 0.002 acre of aquatic habitat. This loss of habitat will remove foraging opportunities and will make it harder for the snake to escape from predators. Other suitable aquatic habitat is in the adjacent flood-irrigated cropland and when the channels are holding water.

Cumulative Effects

Cumulative effects include the effects of future state, tribal, local, or private actions that are reasonably certain to occur in the action area are considered in this biological opinion. Future federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. During this consultation, the Service did not identify any future non-federal actions that are reasonably certain to occur in the action area of the proposed project.

Conclusion

After reviewing the current status of the snake, the environmental baseline for the action area, the effects of the proposed project, and the cumulative effects, it is the Service's biological opinion that the Distribution System Improvements Project, as proposed, is not likely to jeopardize the continued existence of the snake. The Service reached this conclusion because the project-related effects to the species, when added to the environmental baseline and analyzed in consideration of all cumulative effects, will not rise to the level of precluding recovery or reducing the likelihood of survival of the species. The snake habitat affected by the proposed project represents a small portion of habitat available, and the loss will be minimized by following the proposed conservation measures proposed and purchasing the conservation credits.

INCIDENTAL TAKE STATEMENT

Section 9(a)(1) of the Act and federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened fish and wildlife species without special exemption. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Harass is defined by the Service in 50 CFR 17.3 as an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Harm is defined by the Service in 50 CFR 17.3 as an act which actually kills or injures wildlife. Such act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavior patterns, including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with this Incidental Take Statement.

The measures described below are non-discretionary, and must be implemented by the Bureau so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, in order for the exemption in section 7(o)(2) to apply. The Bureau has a continuing duty to regulate the activity covered by this Incidental Take Statement. If the Bureau: (1) fails to require the applicant to adhere to the terms and conditions of the Incidental Take Statement through enforceable terms that are added to the permit or grant document, and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the Bureau or the applicant must report the progress of the action and its impact on the species to the Service as specified in the Incidental Take Statement [50 CFR 402.12(i)(3)].

Amount or Extent of Take

The Service anticipates that incidental take of the snake will be difficult to detect or quantify because the number of individuals in the action area is unknown. The snake is secretive and uses underground burrows for shelter while not in aquatic habitat during the active season. In instances in which the number of individuals that may be taken cannot be determined, the Service may quantify take in the amount of lost or disturbed habitat as a result of the project action; since take is expected to result from these effects to habitat, the quantification of habitat becomes a direct surrogate for the species that will be taken. Therefore, the Service anticipates that overall within the action area, all snakes inhabiting the 0.076 acre of aquatic habitat and 0.070 acre of upland habitat

that will be temporarily disturbed, as well as the 0.002 acre of aquatic habitat and 0.002 acre of upland habitat that will be lost, will be subject to incidental take in the form of non-lethal harm. In addition, all snakes using underground burrows in the 0.002 acre of upland habitat that will be lost will be subject to incidental take in the form of harm by injury or mortality. Proper implementation of conservation measures, in particular the installation of snake exclusion fencing, should be effective in preventing incidental take due to injury or mortality; however, due to the fact that it is often difficult to completely exclude upland areas, any snakes that may enter the action area could be injured or killed during proposed project construction. Although it is infeasible to quantify the exact number of snakes that may be incidentally taken, the Service anticipates that the number will be low due to the fact that snakes are expected to avoid active construction if possible, as well as the conservation measures proposed by the applicant.

Since we cannot estimate the number of individual snakes that will be incidentally taken for the reasons listed above, we are providing a mechanism to quantify when take would be considered to be exceeded as a result of implementing the proposed project. Based on Wylie et al. (2008), we will use detection of two (2) dead or injured snakes at any one site or a total of nine (9) dead or injured snakes for the proposed project to determine when take is exceeded. By setting a threshold of two (2) individuals detected at any one site or a total of nine (9) individuals detected for the proposed project, we have set an incidental take limit that is measurable, irrefutable, and indicates that the snake is being affected at a level where avoidance and minimization measures and project implementation need to be evaluated and possibly modified. We conclude that incidental take of the snake will be considered exceeded if two (2) dead or injured snakes at any one site or a total of nine (9) dead or injured snakes for the proposed project are detected by biological monitors or other project personnel.

Upon implementation of the following Reasonable and Prudent Measures, incidental take of the snake associated with the proposed project will become exempt from the prohibitions described in section 9 of the Act. No other forms of take are exempted under this opinion.

Effect of the Take

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to the species.

Reasonable and Prudent Measures

All necessary and appropriate measures to avoid or minimize effects on the snake resulting from implementation of this project have been incorporated into the project's proposed conservation measures. Therefore, the Service believes the following reasonable and prudent measure is necessary and appropriate to minimize incidental take of the snake:

1. All conservation measures, as described in the biological assessment and restated here in the *Description of the Proposed Action* section of this biological opinion, will be fully implemented and adhered to. Further, this reasonable and prudent measure will be supplemented by the terms and conditions below.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, the Bureau and the applicant must ensure compliance with the following terms and conditions, which implement the reasonable and prudent measure described above. These terms and conditions are nondiscretionary.

1. The Bureau and the applicant will include full implementation and adherence to the conservation measures as a condition of any permit or contract issued for the project.

2. The applicant will provide a copy of the bill of sale and payment receipt to the Service upon the purchase of snake conservation credits.

3. In order to monitor whether the amount or extent of incidental take anticipated from implementation of the proposed project is approached or exceeded, the Bureau will adhere to the following reporting requirements. Should this anticipated amount or extent of incidental take be exceeded, the Bureau must immediately reinitiate formal consultation, as per 50 CFR 402.16.
    a. For those components of the action that will result in habitat degradation or modification whereby incidental take in the form of harm is anticipated, the Bureau will provide a precise accounting of the total acreage of habitat effected to the Service after completion of construction. This report will also include any information about changes in project implementation that result in habitat disturbance not describe in the *Description of the Proposed Action* and not analyzed in this biological opinion.
    b. The Bureau will immediately contact the Service's Sacramento Fish and Wildlife Office (SFWO) at (916) 414-6631 to report direct encounters between listed species, project workers, and their equipment whereby incidental take in the form of harassment, harm, injury, or death occurs. If the encounter occurs after normal working hours, the Bureau or the applicant will contact the SFWO at the earliest possible opportunity the next working day. When injured or killed individuals of the listed species are found, the Bureau or the applicant will follow the steps outlined in the Salvage and Disposition of Individuals section below.

Salvage and Disposition of Individuals

Injured listed species must be cared for by a licensed veterinarian or other qualified person(s), such as the Service-approved biologist. Dead individuals must be sealed in a resealable plastic bag containing a paper with the date and time when the animal was found, the location where it was found, and the name of the person who found it, and the bag containing the specimen must be frozen in a freezer in a secure site, until instructions are received from the Service regarding the disposition of the dead specimen. The Service's contact person is the Sacramento Valley Division Chief of the Endangered Species Program at the SFWO at (916) 414-6631.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. The Service recommends the following actions:

13. The Bureau should work with the Service in meeting the goals of the *Recovery Plan for the Giant Garter Snake* (Service 2017).

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

REINITIATION—CLOSING STATEMENT

This concludes formal consultation on the Distribution System Improvements Project. As provided in 50 CFR 402.16, reinitiation of formal consultation is required and will be requested by the federal agency or by the Service where discretionary federal agency involvement or control over the action has been retained or is authorized by law and:

(a) if the amount or extent of taking specified in the Incidental Take Statement is exceeded;
(b) if new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered;
(c) if the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion; or
(d) if a new species is listed or critical habitat designated that may be affected by the identified action.

If you have any questions regarding this biological opinion, please contact Sam Sosa, Fish and Wildlife Biologist (samuel_sosa@fws.gov) or Kellie Berry, Sacramento Valley Division Chief (kellie_berry@fws.gov), at the letterhead address or at (916) 414-6631.

cc:
Nathaniel Martin, U.S. Bureau of Reclamation, Sacramento, California
Gregg Ellis, ICF, Sacramento, California

Literature Cited

[CNDDB] California Natural Diversity Database. 2018. Biogeographic Data Branch, Department of Fish and Wildlife, Sacramento, California. Accessed 2 November 2018.

Halstead, B.J., and J.M. Brode. 1980. Status of the Giant Garter Snake, Thamnophis couchi gigas (Fitch). California Department of Fish and Game. Inland Fisheries Endangered Species Program Special Publication Report No. 80-5. Sacramento, California. 14 pp.

Halterman, M.D., M.J. Johnson, J.A. Holmes, and S.A. Laymon. 2016. Draft. A Natural History Summary and Survey Protocol for the Western Distinct Population Segment of the Yellow-billed Cuckoo: U.S. Fish and Wildlife Service Techniques and Methods, 45 pp.

[Service] U.S. Fish and Wildlife Service. 2012. Giant Garter Snake (Thamnophis gigas) 5-year Review: Summary and Evaluation. U.S. Fish and Wildlife Service, Pacific Southwest Region, Sacramento, California. 63 pp.

_____. 2017. Recovery Plan for the Giant Garter Snake (*Thamnophis gigas*). U.S. Fish and Wildlife Service, Pacific Southwest Region, Sacramento, California. vii + 71 pp.

Wylie, G., L.L. Martin, and M. Amarello. 2008. Results of Monitoring for Giant Garter Snakes (Thamnophis gigas) for the Bank Protection Project on the Left Bank of the Colusa Basin Drainage Canal in Reclamation District 108, Sacramento River Bank Protection Project, Phase II. Progress report for the U.S. Army Corps of Engineers. 20 pp.

Appendix C SHPO

CULTURAL RESOURCES COMPLIANCE
Division of Environmental Affairs
Cultural Resources Branch (MP-153)

MP-153 Tracking Number: 16-NCAO-232

Project Name: Reclamation District 108 (RD-108) Supervisory Control and Data Acquisition (SCADA), Canal Gate Automation, and Pipeline Conversion Project, Yolo and Colusa counties, California

NEPA Contact: Nate Martin, Natural Resource Specialist

EA Number:

MP 153 Cultural Resources Reviewer: Lex Palmer, Architectural Historian

Date: November 21, 2018

Reclamation proposes to issue CALFED water use efficiency grant funds to RD-108 for their proposed SCADA, canal gate automation, and pipeline conversion project. The award of Federal funding constitutes an undertaking as defined in 36 CFR § 800.16(y) and is a type of activity that has the potential to cause effects on historic properties under 36 CFR § 800.3(a), requiring compliance under Title 54 USC § 306108, commonly known as Section 106 of the National Historic Preservation Act (NHPA) as amended.

Based on historic properties identification efforts conducted by ICF, Reclamation consulted with, and received concurrence from, the State Historic Preservation Officer (SHPO) on a finding of no historic properties affected, pursuant to 36 CFR 800.4(d)(1). Consultation correspondence between Reclamation and the SHPO has been provided with this cultural resources compliance document for inclusion in the administrative record for this action.

This document serves as notification that Section 106 compliance has been completed for this undertaking. Please note that if project activities subsequently change, additional NHPA Section 106 review, including further consultation with the SHPO, may be required.

Attachments:

Letter: Reclamation to SHPO dated October 23, 2018
Letter: SHPO to Reclamation dated November 20, 2018

United States Department of the Interior

BUREAU OF RECLAMATION
Mid-Pacific Regional Office
2800 Cottage Way
Sacramento, CA 95825-1898

IN REPLY REFER TO

OCT 2 3 2018

MP-153
2.1.1.04

SPECIAL DELIVERY – HAND DELIVERED

Ms. Julianne Polanco
State Historic Preservation Officer
Office of Historic Preservation
1715 23rd Street, Suite 100
Sacramento, CA 95816

Subject: National Historic Preservation Act (NHPA) Section 106 Consultation for the Reclamation District 108 (RD-108) Supervisory Control and Data Acquisition (SCADA), Canal Gate Automation, and Pipeline Conversion Project, Yolo and Colusa Counties, California (16-NCAO-232.00)

Dear Ms. Polanco:

The Bureau of Reclamation is initiating consultation under Title 54 U.S.C. § 306108, commonly known as Section 106 of the NHPA, and its implementing regulations found at 36 CFR Part 800, for the proposed issuance of CALFED water use efficiency grant funds to RD-108 for their proposed SCADA, canal gate automation, and pipeline conversion project (Enclosure: ICF Report Appendix A, Figure 1). The award of Federal funding constitutes an undertaking as defined in 36 CFR § 800.16(y) and is a type of activity that has the potential to cause effects on historic properties under 36 CFR § 800.3(a). We are entering into consultation with you on this undertaking and are notifying you of our finding of no historic properties affected, pursuant to 36 CFR § 800.4(d)(1).

RD-108 proposes to install SCADA systems in 17 lateral headgates to allow remote control using the existing SCADA system (Enclosure: ICF Report Appendix A, Figure X Sheets 1-16). The SCADA systems would be mounted on two 3-inch-diameter poles set 3.5 feet into the ground with concrete footings next to the new or existing canal headwall. The concrete footings would be approximately 3.5 feet deep and 1 foot wide.

RD-108 is also proposing to replace 26 manual canal control gates with automated control gates that would be remotely controlled using the existing SCADA system to reduce operational spills. Each new canal gate would have a 6-inch-diameter stilling well installed downstream of the gate site. The stilling well installation would require a 1-foot-wide by approximately 10-foot-long trench to be cut into the canal bank. The excavated soil would be backfilled and the site would be restored to pre-project contours.

RD-108 also proposes to install three pipelines. The North Steiner Bend Pipeline would be 1.3 miles of 27-inch-diameter pipeline placed in a 4 foot-wide trench, 3 to 6 feet deep. Where the excavation exceeds 4 feet in depth the trench width would be expanded to 8 feet. The County Well Line Pipeline would have 0.3 miles of 18-inch-diameter pipeline installed in a 4-foot-wide trench 3 to 6 feet deep. The 121J Pipeline would have 1 mile of 18-inch-diameter pipeline laid in a 4-foot-wide trench 3 to 6 feet deep. The project would decrease Sacramento River diversions by 2,587 acre-feet annually and reduce RD-108 electrical power costs.

Reclamation determined that the area of potential effects (APE) includes all project-related activities as described above. The SCADA system vertical APE would be 3.5 feet deep, and the horizontal APE would be 12 inches wide and long. The automated canal control gate stilling well vertical APE would be 24 inches deep and the horizontal APE would be 12 inches wide and 10 feet long. The three pipelines have a vertical APE ranging from 3 to 6 feet deep. The horizontal APE would be 2.6 miles long, and range from 4 to 8 feet wide. Construction equipment and materials would be transported from State Route 45 and local roadways to the construction sites. Staging and material stockpiling would take place on existing canal and unpaved farm roads. The project is 21.25 acres in size. Lands surrounding the project area are characterized by rural open space and crop fields. Table 1 below presents the legal descriptions for the RD-108 project.

USGS Quadrangle	Meridian	Township	Range	Section	County
Kirkville	MDB&M	13N	1E	1, 11, 12, 14, 21, 28, 35	Colusa
Kirkville	MDB&M	12N	1E	2	Yolo
Dunnigan	MDB&M	13N	1E	8, 17, 29	Colusa
Dunnigan	MDB&M	12N	1E	Unsectioned (Colusa Basin)	Yolo
Zamora	MDB&M	12N	1E	20, 29, 32	Yolo
Eldorado Bend	MDB&M	12N	1E	33, 34, 35, Unsectioned (Colusa Basin)	Yolo
Eldorado Bend	MDB&M	11N	1E	2, Unsectioned (Colusa Basin)	Yolo

Efforts to identify historic properties in the APE were conducted by ICF on behalf of RD-108. The results of these efforts are documented in the enclosed cultural resources inventory report (Enclosure: ICF, 2018). ICF conducted background research, a records search at the Northwest Information Center at California State University, Sonoma, and a cultural resources inventory that included auger testing in portions of the APE.

No historic properties were identified during the inventory. ICF documented 23 RD-108 canals and laterals in the APE, and recommended that the RD-108 irrigation system is ineligible for the National Register of Historic Places (National Register) under National Register criteria A, B, C, or D on an individual or district basis. Reclamation agrees with the ICF recommendation that the RD-108 system and the canals and laterals in the APE are ineligible for listing in the National Register; however, the ICF report states that the proposed undertaking will have no adverse effect on historic properties (Enclosure: ICF, 2018:1). Reclamation disagrees with this finding, and determined that the proposed project would result in no historic properties affected, pursuant to 36 CFR § 800.4(d)(1).

Pursuant to the regulations at 36 CFR § 800.3(f)(2), Reclamation identified the United Auburn Indian Community of the Auburn Rancheria (UAIC), Cachil DeHe Band of Wintun Indians of the Colusa Indian Community of the Colusa Rancheria, Cortina Rancheria Kletsel Dehe Band of Wintun Indians, Enterprise Rancheria of Maidu Indians, Grindstone Indian Rancheria of Wintun-Wailaki Indians, Paskenta Band of Nomlaki Indians, and Yocha Dehe Wintun Nation as Indian tribes who might attach religious and cultural significance to historic properties within the APE. Reclamation contacted these tribes by letter dated May 14, 2018, inviting their participation in the Section 106 process and requesting their assistance in the identification of sites of religious and cultural significance or historic properties that may be affected by the proposed undertaking, pursuant to 36 CFR § 800.4(a)(4). Reclamation received responses back from the UAIC and the Yocha Dehe Wintun Nation, requesting copies of any cultural resources inventory reports associated with these projects and to be Section 106 consulting parties. Reclamation responded to these tribes on July 2, 2018, by providing the draft inventory report and again requesting information on any cultural resources of concern they may have specific to these projects. We received no response to these letters. If any Native American concerns are raised, we will work to address them and notify your office, as appropriate.

Reclamation applied the criteria of adverse effect to cultural resources in the APE, as outlined at 36 CFR § 800.5(a). Based on the above and enclosed information, Reclamation has reached a finding of no historic properties affected for the current undertaking. We request your consensus on our determination of National Register eligibility for the RD-108 laterals and canals in the APE. We invite your comments on our delineation of the APE and the efforts to identify historic properties in the APE. We are also notifying you of our finding of no historic properties affected, pursuant to 36 CFR § 800.4(d)(1). If you have any questions or concerns regarding this project, please contact Mr. Lex Palmer, Architectural Historian, at 916-978-5213 or kpalmer@usbr.gov.

Sincerely,

Anastasia T. Leigh
Regional Environmental Officer

Enclosure

State of California • Natural Resources Agency
Edmund G. Brown Jr., *Governor*

DEPARTMENT OF PARKS AND RECREATION
OFFICE OF HISTORIC PRESERVATION
Lisa Ann L. Mangat, *Director*

Julianne Polanco, State Historic Preservation Officer
1725 23rd Street, Suite 100, Sacramento, CA 95816-7100
Telephone: (916) 445-7000 FAX: (916) 445-7053
calshpo.ohp@parks.ca.gov www.ohp.parks.ca.gov

November 20, 2018 In reply refer to: BUR_2018_1024_001

VIA ELECTRONIC MAIL

Ms. Anastasia T. Leigh, Regional Environmental Officer
U.S. Bureau of Reclamation, Mid-Pacific Regional Office
2800 Cottage Way, Sacramento, CA 95825-1898

Subject: Section 106 Consultation: Reclamation District 108 (RD-108) Supervisory Control and Data Acquisition (SCADA), Canal Gate Automation, and Pipeline Conversion Project, Yolo and Colusa Counties, California (16-NCAO-232.00)

Dear Ms. Leigh:

On October 24, 2018 the State Historic Preservation Officer (SHPO) received your letter initiating consultation on the above referenced undertaking to comply with Section 106 of the National Historic Preservation Act of 1966 (as currently amended) and its implementing regulations found at 36 CFR Part 800. The U.S. Bureau of Reclamation (Reclamation) proposes to issue CALFED water use efficiency grant funds to RD-108 for their proposed SCADA canal gate automation, and three pipelines conversion project. Reclamation has made a finding of *no historic properties affected* and seeks concurrence. Along with the consultation letter, the following documentation was provided:

- ***Report:*** *Cultural Resource Inventory and Evaluation Report for the Reclamation District 108 Distribution Systems Improvements Project, Yolo and Colusa Counties, California; July 2018 (ICF 00688.17).* ***[By:*** *D. Lemon and E. Allen, ICF, Sacramento, CA]* ***[For:*** *W. Vanderwaal, Reclamation District 108, Grimes, CA; and K. Palmer, US Bureau of Reclamation, Mid-Pacific Region, Sacramento, CA] [ICF 2018]*

RD-108 will install new SCADA systems at 17 lateral head gates to expand remote control by tying into an existing SCADA system. The new SCADA components will be mounted on two 3-inch-diameter poles, set 3.5 feet into the ground with concrete footings, next to the new or existing canal headwall. The footings will be about 3.5 feet deep and 1 foot wide.

At the same time, in order to reduce operational spills, RD-108 intends to replace 26 manual canal control gates with automated control gates that also will be remotely controlled by the existing SCADA system. Each new canal gate will have a 6-inch-diameter stilling well installed downstream of the gate site, which requires cutting a 1-foot-wide by circa 10-foot-long trench into the canal bank. Excavated soil will be used as backfill and all sites will be restored to pre-project contours when completed.

Due to land contours, RD-108 also proposes to install three new pipelines for water delivery. The North Steiner Bend Pipeline will be 1.3 miles of 27-inch-diameter pipeline placed in a 4-foot-wide trench, 3 to 6 feet deep. Where the excavation exceeds 4 feet in depth the trench width would be expanded to 8 feet. The County Line Well Pipeline will be 0.3 miles of 18-inch-diameter pipeline installed in a 4-foot-wide trench, 3 to 6 feet deep. The 12IJ Pipeline will consist of 1 mile of 18-inch-diameter pipeline laid in a 4-foot-wide trench, 3 to 6 feet deep. The goal for installation of the pipelines is to decrease Sacramento River diversions by 2,587 acre-feet annually and reduce RD-108 electrical power costs.

Reclamation has determined that the area of potential effects (APE) encompasses all project-related activities at each gate location and the three pipeline alignments for a total of about 21.25 acres in cumulative size (42 loci) (ICF 2018: pg. 10; Appendix A-Figure 2: Project Location Overview; and Figure X: APE-16 map sheets). Vertical APE depths are 3.5 feet for the SCADA systems; for the stilling wells, 24-inches deep; and for the pipelines, depth will be from 3-to-6-feet depending on land contours. Transportation will be from State Route 45 and existing local roadways to the construction sites. Staging and material stockpiling will take place on existing canal and unpaved farm roads. Lands around the project area are characterized by rural open space, the canal system, and crop fields.

On behalf of Reclamation, ICF conducted historic properties identification efforts including a records search; pedestrian archaeological and built environment surveys on February 20 and 21, 2018; geoarchaeological soils study evaluations; and additional field auger testing on August 12, 2018 of the entire County Line Well Pipeline route due to its proximity to loci of prehistoric site CA-COL-0002 and its overall soils sensitivity ratings (ICF 2018: pp. 26-32; Table 4; Appendix A-Figure X: APE sheets 14 and 16 of 16 map sheets). The records search indicated that three resources have been recorded near the combined APE:

- CA-COL-0002, a multicomponent village-mound site excavated in 1935 with recovery of about 60 human interments. Its loci are in proximity to the proposed alignment of the County Line Well new pipeline along the river margin. No cultural constituents were found during auger testing and soils were uniformly the same color and consistency for all auger holes indicating that fill was most likely used for the road construction at the proposed alignment.
- CA-COL-0066, a levelled prehistoric mound site with remnants of bone, obsidian tools and other prehistoric debitage. It is located in an agricultural field outside of any APE boundary.
- The Colusa Basin Drainage Canal (CA-COL-302H and CA-YOL-240H), was built in the 1920s and crosses into both counties; it was designated a Yolo County landmark in 1986. The canal is within 300 feet of, but outside of, the western boundary of the combined APE.

No additional prehistoric sites were identified during the pedestrian survey and ICF documented 23 RD-108 earthen canals and laterals within the APE (DPR 523 forms). These are tertiary canals and laterals delivering water into a large system of agricultural fields located along the Sacramento River.

Originally constructed circa 1913 to 1917, over time the canal prisms have been cleared of vegetation and regraded for maintenance, although keeping their basic field alignments and connections. Every 10-15 years the water control systems and gates were repaired and replaced. Overall, this canal system section is functional as it originally was designed, but does not represent a significant context as its installation is a standard response to the expansion of agriculture in this region. As none of the proposed work alters their existing alignments and relationships to the larger canal and drainage systems, the information recorded in the DPR 523 forms documents their current appearance, function and use within the larger agricultural region. Reclamation states that this tertiary section of canals and laterals does not have context or significance under any of the National Register of Historic Places criteria due to their standard and tertiary nature and loss of original workmanship details and original materials integrity over time.

Reclamation identified the United Auburn Indian Community of the Auburn Rancheria (UAIC), Cachil DeHe Band of Wintun Indians of the Colusa Indian Community of the Colusa Rancheria, Cortina Rancheria Kletsel Dehe Band of Wintun Indians, Enterprise Rancheria of Maidu Indians, Grindstone Indian Rancheria of Wintun-Wailaki Indians, Paskenta Band of Nomlaki Indians, and Yocha Dehe Wintun Nation as Indian tribes

who might attach religious and cultural significance to historic properties within the APE. Reclamation contacted these tribes by letter dated May 14, 2018, inviting participation in the Section 106 process and requesting assistance in identifying any sites of religious and cultural significance or historic properties that may be affected by the proposed undertaking. Reclamation received responses from the UAIC and the Yocha Dehe Wintun Nation requesting copies of any cultural resources inventory reports associated with these projects and to be Section 106 consulting parties. On July 2, 2018, Reclamation provided the draft inventory report and again requesting information on any cultural resources that may be of concern specific to these projects. To date, no further responses have been received. Should any Native American concerns be subsequently raised, Reclamation will work to address them and make notifications as required.

Reclamation has applied the criteria of adverse effect for each component and concluded that no historic properties will be affected by the undertaking. The existing RD-108 laterals and canals in the APE are tertiary components of the larger agricultural region and the recordation has documented their current appearance and function and their alignments and basic connections will not be affected. They do not appear to have a special historical context or significance either individually or as contributing components of a larger system or district, were one to be evaluated. Their location, setting and field design remain intact.

Based on a review of geologic processes, past land use, survey, and the scope of current project activities, Reclamation finds that the undertaking is a *no historic properties affected* outcome and requests review and comment on the delineation of the APE, on efforts to identify historic properties, and seeks concurrence with its effect finding for the undertaking. After review of the documentation and above discussion, the following comments are offered:

- Pursuant to 36 CFR 800.4(a)(1), there are no objections to the discontinuous APE as defined and illustrated in the ICF report;
- Pursuant to 36 CFR 800.4(b), Reclamation has documented a reasonable and good faith effort to appropriately identify historic properties within the overall APE locations;
- Pursuant to 36 CFR 800.4(c)(2), **I do not object** that Reclamation has determined that the 23 recorded small canals and laterals, locally built, common-type structures lacking historic context and workmanship and materials integrity, are not eligible for listing in the National Register of Historic Places.
- Reclamation finds that the proposed undertaking will result in *no historic properties affected*. Pursuant to 36 CFR 800.4(d)(1)(i), **I do not object**.

Please be advised that under certain circumstances, such as unanticipated discovery or a change in project description, Reclamation may have additional future responsibilities for this undertaking under 36 CFR Part 800 (as currently amended). Should you require further information, please contact Jeanette Schulz at Jeanette.Schulz@parks.ca.gov or her desk phone is: (916) 445-7031.

Sincerely,

Julianne Polanco
State Historic Preservation Officer