

# RECLAMATION

*Managing Water in the West*

## Finding of No Significant Impact

### Natomas Central Mutual Water Company: Cottonwood Check Structure Project

FONSI 19-01-MP

Prepared by: *Douglas Kleinsmith* Date: 3/6/19  
Douglas Kleinsmith  
Natural Resources Specialist  
Mid-Pacific Regional Office

Concurred by: *Paul Zedonis* Date: 3/12/19  
Paul Zedonis  
Environmental and Natural Resources  
Supervisory Natural Resources Specialist/  
Division Manager  
Northern California Area Office

Approved by: *[Signature]* Date: 3/29/19  
Elizabeth Hadley  
Acting Area Manager  
Northern California Area Office



U.S. Department of the Interior  
Bureau of Reclamation

# 1 Background

The Bureau of Reclamation (Reclamation) prepared an Environmental Assessment (EA) to evaluate and disclose potential environmental impacts associated with a CALFED Water Use Efficiency Grant of \$110,000 to the Natomas Central Mutual Water Company (Company) for the Cottonwood Check Automation Project (Proposed Action). The Proposed Action would make funding available for the replacement of a check structure and install flow meters, water level sensors, and supervisory control and data acquisition equipment. This project is located in the Natomas Basin in Sacramento County. The EA was available for public review from January 25, 2019 to February 8, 2019. No comments were received on the EA.

## 2 Alternatives Including the Proposed Action

### 2.1 No Action

Under No Action, Reclamation would not provide a CALFED Water Use Efficiency Grant to the Company to help construct the proposed action. Without funding by Reclamation, the Company would delay construction of the proposed action until funding is available.

### 2.2 Proposed Action

Under the Proposed Action, Reclamation would award a grant to the Company for the replacement of a check structure and install flow meters, water level sensors, and supervisory control and data acquisition equipment.

## 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 necessary. The EA describes the existing environmental resources in the area of the Proposed Action, and evaluates the effects of the No Action and Proposed Action alternatives on the resources near the Natomas area. This EA was prepared in accordance with National Environmental Policy Act, Council on Environmental Quality regulations (40 CFR 1500-1508), and Department of the Interior regulations (43 CFR Part 46) and 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)). Pursuant to 54 USC § 306108, commonly known as Section 106 of the National Historic Preservation Act, and its implementing regulations at 36 CFR Part 800, Reclamation determined that no historic properties would be affected and therefore, the proposed action will result in no significant impacts to cultural resources.
8. The proposed action will not affect listed or proposed threatened or endangered species (40 CFR 1508.27(b)(9)).
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*

## **Natomas Central Mutual Water Company: Cottonwood Check Structure Project**

**Bay-Delta Program: CALFED Water Use Efficiency Grants**

**Environmental Assessment 19-01-MP**





## **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.



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# List of Acronyms and Abbreviations

CDFW	California Department of Fish and Wildlife
CHRIS	California Historical Resources Information System
CNDDDB	California Natural Diversity Data Base
Company	Natomas Central Mutual Water Company
GGS	Giant garter snake
ITA	Indian Trust Assets
NAAQS	National Ambient Air Quality Standards
NHPA	National Historic Preservation Act
PM <sub>10</sub>	Particulate matter less than 10 micrometers in diameter
PM <sub>2</sub>	Particulate matter less than 2.5 micrometers in diameter
Reclamation	U.S. Bureau of Reclamation
RD-1000	Reclamation District 1000
SCADA	Supervisory Control and Data Acquisition
SMAQMD	Sacramento Metropolitan Air Quality Management District
SVAB	Sacramento Valley Air Basin
TNBC	The Natomas Basin Conservancy
USFWS	United States Fish and Wildlife Service
WPT	Western pond turtle



# **Section 1 Introduction**

## **1.1 Background**

This Environmental Assessment was prepared to evaluate and disclose the potential direct, indirect, and cumulative impacts to the affected environment associated with the U.S. Bureau of Reclamation (Reclamation) providing CALFED Water Use Efficiency Grant funding to the Natomas Central Mutual Water Company (Company) for the Cottonwood Check Automation Project (Proposed Action). The project would make funding available for the replacement of a check structure and install flow meters, water level sensors, and supervisory control and data acquisition (SCADA) equipment. This project is located in the Natomas Basin in Sacramento County (Figure 1).

## **1.2 Need for Action**

The Company needs funding assistance to improve water conservation and water use efficiency. The Company receives its irrigation water supply from the Sacramento River through an extensive tailwater recovery system. The capacity of the Company's distribution system is limited during startup in the spring such that water deliveries for rice flood up must be staggered. This project will improve water management practices and provide greater flexibility in meeting early spring demand. This project would also eliminate the continuous operational spill that totals up to 300 acre-ft per irrigation season and allow up to 100 acres to remain in production that would otherwise face fallowing due to limited water supply.

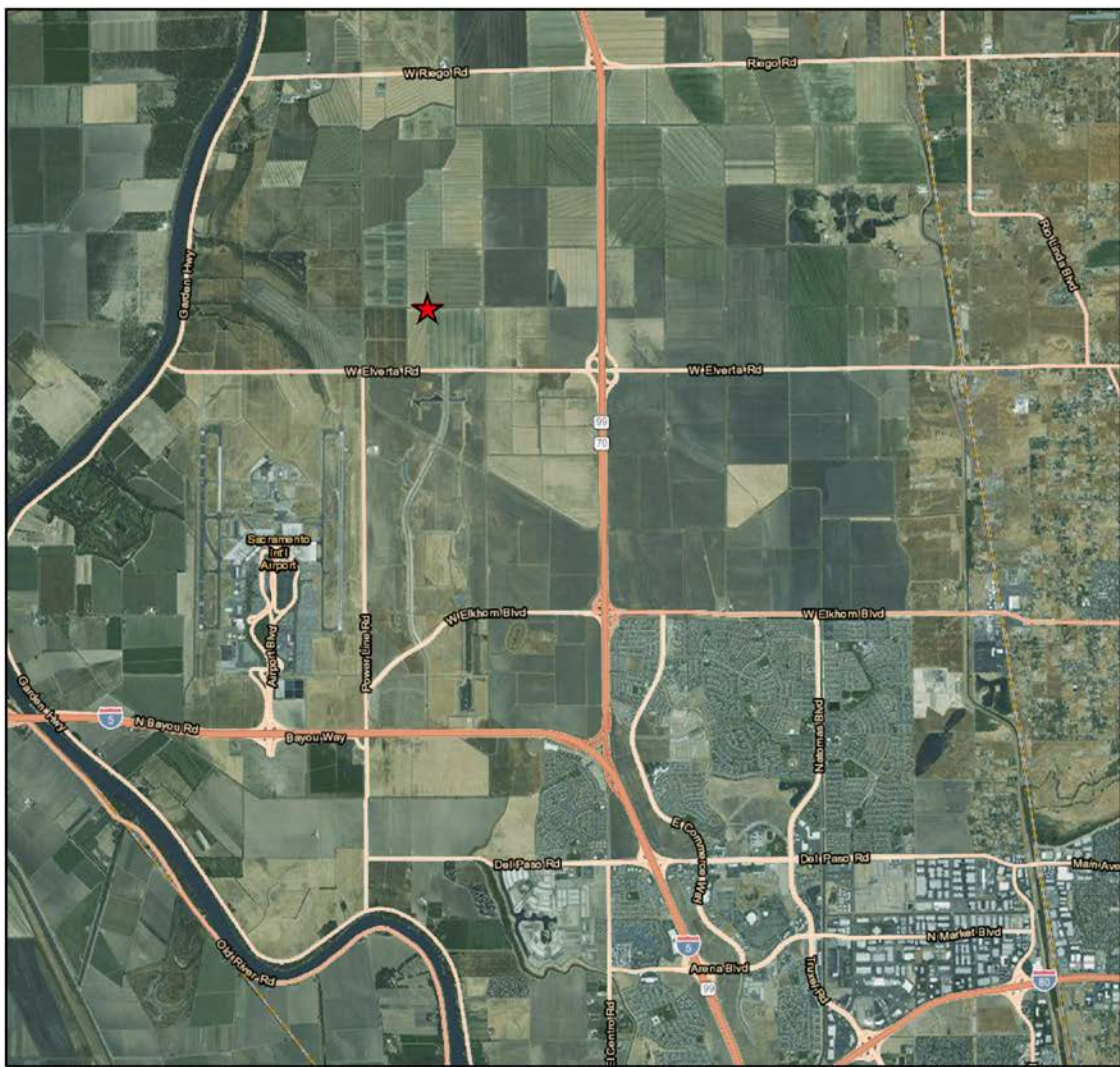
# **Section 2 Alternatives Including the Proposed Action**

## **2.1 No Action**

Under No Action, Reclamation would not provide CALFED Water Use Efficiency Grant to the Company to help construct the proposed action. Without funding by Reclamation, the Company would delay construction of the proposed action until funding is available.

## **2.2 Proposed Action**

Under the Proposed Action, Reclamation would provide a CALFED Water Use Efficiency Grant to the Company of \$110,000 for the Cottonwood Check Automation Project. The Company



LEGEND

★ Cottonwood Check Structure



Service Layer Credits: Sources: Esri, DeLorme, NAVTEQ, USGS, NRCAN, METI, iPC, TomTom

VICINITY MAP



**FIGURE 1**  
**Project Location Cottonwood Check**  
**Natomas Mutual Water Company**  
**Proposed Cottonwood Check Structure**  
**Sacramento County, CA**

proposes to remove the existing Cottonwood Check structure of Lateral 3 (Figures 2 and 3) and replace it with a self-regulating vertical leaf gate that automatically opens and closes to maintain a constant upstream water level. Figure 4 is an example of the new structure. In addition, flow meters, water level sensors, and a solar-powered SCADA remote terminal unit would be installed to expand the coverage and features of the Company's SCADA system for improved water management.

### **2.2.1 Access and Staging**

Existing roads would be used for transporting construction equipment. The staging area for construction equipment would be in the existing Company construction yard located at 2601 West Elkhorn Boulevard in Rio Linda, California. Work would be performed in the canal and from the road.

### **2.2.2 Old Check Structure Removal**

Construction within canals may require dewatering using a screened sump pump. Vegetation would be scraped and removed during excavation. Hand tools would be used for the initial removal of surface broken gunite and concrete to a depth of approximately 1 to 2 feet, afterward an excavator and/or backhoe would be used to complete the removal. This disturbance area would be limited to an area of approximately 25 by 45 feet.

### **2.2.3 Installation of Project Components**

Construction activities would include:

- Installing a new cast-in-place concrete structure for mounting the automated vertical leaf gate. The leaf gate would be installed by sliding it into cast slots in the concrete.
- Installing approximately 275 feet of new polyvinyl chloride conduit for instrumentation and control equipment (level sensors and flow meters) cables along the canal bank in a 2- to 3-foot-deep, 8-inch to 12-inch-wide trench.
- Installing two flow meters and three water level sensors upstream and downstream of the new check structure and in the adjacent Lateral 3A.
- Mounting a solar-powered SCADA remote terminal unit to the concrete structure.
- Placing 0.013 acre of riprap immediately downstream of the check structure. Riprap would be obtained from Nordic Industries' Parks Bar Quarry in Yuba County, which is a permitted commercial quarry. Parks Bar Quarry is located at 7561 Highway 20 and Parks Bar Road in Smartsville.



VICINITY MAP

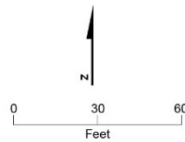
LEGEND

- ⊗ Proposed Water Level Sensor/Flow Meter
- Data/Cable Trench (3'D x 1'W x 275'L)
- Access Road



**FIGURE 1-2**  
**Project Components**  
 Natomas Mutual Water Company  
 Proposed Cottonwood Check Structure  
 Sacramento County, CA

USGS Quad: Taylor Monument  
 Section: 17, 18, 19, and 20  
 Township: 10N  
 Range: 04E  
 Imagery: Google™ Earth, 2017.



SL0208171116SAC Figure\_1-2\_Cottonwood-WL\_V2.ai tdaus 05.16.2017



**Figure 2. Location and Project Components of Cottonwood Check Automation Project**



**Figure 3. Existing Cottonwood Check Structure**



**Figure 4. Example of Cottonwood Check Replacement**



## **2.2.1 Demobilization and Clean-up**

Unused materials, including the demolished concrete check and concrete lining, will be removed upon completion of the Project. The Company will remove and dispose of this material at its construction yard in Rio Linda. The excavated soil remaining after completion of the Project is expected to be minimal, and it will be spread and compacted along the access road adjacent to the check structure, within the Proposed Action area, to restore the road after construction.

## **2.2.2 Maintenance**

There would not be any annual maintenance besides inspection. The leaf gate is self-cleaning by design and passes silt and debris while the moving water cleans the hinges and openings. Manually sliding the gate out and then sliding it back in to the case slots would occur once every 5 to 10 years.

## **2.3 Construction Schedule**

Construction will start as soon as all necessary permits and approvals are obtained, which is anticipated to be as early as February 2019. Construction will be completed over the course of approximately 4 weeks.

## **2.4 Environmental Protection Measures and Commitments**

As part of the Proposed Action, the Company would implement the following environmental protection measures and commitments to avoid, minimize, or reduce potential environmental impacts associated with the Proposed Action:

### **2.4.1 General Wildlife Avoidance/Minimization Measures**

1. Before any work begins, a biologist would conduct environmental awareness training for individuals who would be working on the proposed project. The environmental awareness training would briefly cover threatened and endangered species and any of their habitats that may be encountered during the proposed project. Awareness training would also cover all restrictions and guidelines that must be followed by crews to avoid or minimize impacts on threatened and endangered species and their habitat, penalties for not complying, and benefits of compliance. Upon completion of training, crews would sign a form stating that they attended the training and understand all the field personnel conservation and protection measures.
2. For work activities occurring between February 15 and August 31, preconstruction nesting bird surveys and ongoing nesting surveys would be conducted by a qualified biologist within 14 days of construction, 250 feet for nonlisted raptors, and 100 feet for nonlisted passerines at all work locations. If nesting birds are found, the biologist or biological monitor would evaluate whether existing screening buffers (such as, buildings, trees, and intervening topography) are sufficient to allow work to proceed and would determine what level of work

exclusion buffers or nest monitoring is needed and notify California Department of Fish and Wildlife (CDFW).

#### **2.4.2 Giant Garter Snake Avoidance/Minimization Measures**

The Company and its contractors would implement the following measures within the Proposed Action area to avoid and minimize potential effects to GGS during construction activities:

1. At least 30 calendar days prior to initiating construction activities, the names and curriculum vitae of the biological monitor(s) for the proposed Project will be submitted to USFWS and CDFW for approval. Monitors shall have the ability to differentiate GGS from other snakes, shall have the authority to stop construction activities if a snake is encountered during construction, and shall monitor the measures for effectiveness.
2. Prior to initiating construction activities, the Company will prepare a GGS relocation plan for use in the event that a snake is injured or trapped during construction. The relocation plan will outline the biological monitor qualifications and responsibilities, and the steps to be taken if a GGS is encountered during construction. The relocation plan will identify the names and contact information for one or more USFWS/CDFW-approved biologists with a 10(a)(1)(A) recovery permit that will be responsible for handling snakes. The location (if known) where trapped GGS would be relocated will be included in the relocation plan, or the plan will specify that trapped individuals will be relocated to the nearest suitable habitat that is outside of the construction area. The relocation plan will describe the steps that will be taken in the event that an injured GGS is found. The relocation plan will describe the communication and notification process and documentation for submission to USFWS and CDFW. The relocation plan will be approved by USFWS and CDFW.
3. If a snake is encountered during construction, activities shall cease until the snake leaves the Proposed Action area on its own or until the USFWS/CDFW-approved biologist determines that the snake is not a GGS. The Proposed Action area includes the Project's permanent (0.013-acre) and temporary (0.51-acre) direct effect areas including project facilities and laydown areas (e.g., materials, spoils, and equipment), and approximately 2 miles of access roads (See Figure 3). No snakes will be harassed, harmed, or killed, and they shall be allowed to leave the construction area on their own volition. If a possible GGS is observed retreating into an underground burrow or is otherwise stationary within the Proposed Action area, construction activities shall not begin or shall cease immediately in the reach where the snake is present. In the instance where a snake goes underground and is not visible, USFWS and CDFW will be notified, and a USFWS/CDFW-approved biologist will respond according to the GGS relocation plan.
4. Snake occurrences will be reported immediately to the USFWS/CDFW-approved biologist, who will contact USFWS and CDFW to determine whether additional protective measures are needed. The USFWS/CDFW-approved biologist shall notify USFWS and CDFW immediately if any listed species are found on-site, and will submit a report including date(s), location(s), habitat description, and any corrective measures taken to protect the species found. The biologist shall be required to report any take to USFWS and CDFW immediately by telephone and by electronic mail or written letter within one working day of the incident as follows:

- USFWS (916) 414-6600, Division Chief, Endangered Species Program
  - CDFW (916) 358-2842, Region 2 Representative, Amy Kennedy
5. A USFWS/CDFW-approved biologist shall perform preconstruction surveys for GGS, oversee implementation of best management practices to prevent sediment from entering areas containing GGS habitat, and oversee installation of exclusion fencing. A USFWS/CDFW-approved biologist shall be present during any earthmoving activities, including riprap placement and trenching.
  6. Before construction activities begin, flooded rice fields and other potential GGS habitat adjacent to the Proposed Action area will be identified and flagged by a USFWS/CDFW-approved biologist, and high-visibility fencing will be erected to protect the areas from encroachment of personnel and equipment. The fencing shall be inspected before the start of each workday and shall be maintained until completion of the Project. The fencing shall be removed only when construction within a given area is completed. This fencing and any erosion control best management practice shall conform to the following specifications: tightly woven fiber netting (mesh size 0.25 inch or smaller) or similar material shall be used to ensure that GGS are not trapped or become entangled by the erosion control material. No monofilament wattles or erosion blankets will be used for this Project.
  7. Movement of equipment and vehicles to and from the Project site will be restricted to established roadways and designated staging areas to minimize habitat disturbance. Project-related vehicles shall observe a 15-mile-per-hour speed limit within the Proposed Action area.
  8. During construction, stockpiling of construction materials, portable equipment, vehicles, and supplies shall be restricted to the designated construction staging areas. All equipment, vehicles, and supplies shall be stored at the designated staging area at the end of each work period. To eliminate an attraction to predators of the GGS, all food-related trash items (such as wrappers, cans, bottles, and food scraps) shall be disposed of in closed containers, which will be removed from the Proposed Action area daily.
  9. Immediately prior to construction activities, a USFWS/CDFW-approved biologist will survey the Proposed Action area for GGS. The biologist shall provide USFWS and CDFW with written documentation of the monitoring efforts within 48 hours after the survey is completed. The Proposed Action area survey will be repeated if a lapse in construction activity of 14 days or greater has occurred.
  10. Initial excavation and removal of the broken gunite and concrete from the surface of the canal channel will be completed with hand tools and under the supervision of a USFWS/CDFW-approved biologist.
  11. Exclusion fencing will be installed using a modified ripper capable of deliberately and accurately ripping along the fence line to minimize disturbance and impacts to GGS. The edge of the material shall be buried in the ground to prevent GGS from crawling underneath the material. Exclusionary fencing shall be monitored each day prior to and during construction to ensure that openings do not develop that will allow the entry of a GGS into the construction area. Prior to construction activity, the area would be inspected by a USFWS/CDFW-approved biologist for GGS. If at any time a GGS is discovered inside an

area protected by exclusionary fencing, a USFWS/CDFW-approved biologist shall notify USFWS and CDFW immediately as described under measures 3 and 4.

12. Temporary fencing will be used around equipment that is left overnight at the Proposed Action area. Temporary fencing will be constructed of material satisfactory to USFWS and CDFW. Immediately prior to moving vehicles stored within the temporarily fenced area, a USFWS/CDFW-approved biologist will survey the area and underneath the vehicle for GGS. If a GGS is discovered, a USFWS/CDFW-approved biologist shall notify USFWS and CDFW immediately as described under measures 3 and 4.
13. Clearing of vegetation and scraping or digging of soil shall be limited to the minimal area necessary to facilitate construction activities. Removal and replacement of check structure and the broken gunite and concrete will be completed within the area restricted by exclusion fencing, which will reduce the likelihood of encountering GGS. In addition, all earthmoving activity, including riprap placement and trenching, shall be overseen by a USFWS/CDFW-approved biologist.
14. Construction within canals may require dewatering using a screened sump pump. The area to be dewatered will be inspected by a USFWS/CDFW-approved biologist prior to dewatering, and a spill response kit (e.g., cleanup items such as absorbent pads, waddles, and disposal containers) will be made available at the site. The dewatered portion shall remain dry (no standing water) for 15 consecutive days prior to construction activities. The dewatered area would be inspected by a USFWS/CDFW-approved biologist prior to construction activity within the constructed canal. If complete dewatering is not possible, potential snake prey (e.g., fish and tadpoles) shall be removed so that snakes and other wildlife are not attracted to the construction area. Stormwater runoff that occurs after the canal is dewatered and after exclusionary fencing is installed around the Proposed Action area will be directed to a screened trash pump and not be allowed to accumulate in the canal. The screened trash pump would be checked by a USFWS/CDFW-approved biologist prior to use.
15. After construction activities are complete, any temporarily disturbed areas shall be restored to their pre-Project conditions.

### **2.4.3 Western Pond Turtle (WPT) Avoidance/Minimization Measures**

1. A CDFW-approved biologist shall perform preconstruction surveys for WPT, assist with implementation of best management practices to prevent equipment and personnel from entering areas containing WPT habitat, and oversee installation of exclusion fencing, as needed.
2. Movement of equipment and vehicles to and from the Proposed Action area will be restricted to established roadways and designated staging areas to minimize habitat disturbance. Project-related vehicles shall observe a 15-mile per-hour speed limit within the project area.
3. During construction, stockpiling of construction materials, portable equipment, vehicles, and supplies shall be restricted to the designated construction staging areas. All equipment, vehicles, and supplies shall be stored at the designated staging area at the end of each work period. To eliminate an attraction to predators of the WPT, all food-related trash items (such

as wrappers, cans, bottles, and food scraps) shall be disposed of in closed containers, which will be removed from the project area daily.

4. If any turtles are encountered within the construction zone during construction, all work shall halt until the CDFW-approved biologist has determined whether it is a western pond turtle or some other species. If it is not a WPT, work may continue. If a WPT is encountered during construction, the CDFW shall be notified and all work shall stop until additional exclusion measures have been defined and authorization to proceed is obtained from the CDFW. No person shall handle or otherwise harass any individual WPT, with the exception of authorized handling by the CDFW-approved biologist.

5. Basking sites (e.g., vegetation mats, logs, debris, and mud banks) and suitable upland habitat for egg laying would be identified and flagged by the CDFW-approved biologist. Where feasible, these areas would be avoided by all construction personnel during construction activities.

#### **2.4.4 Mitigation for Habitat Loss**

The Company proposes to mitigate GGS habitat impacts by purchasing credits from the Natomas Basin Conservancy (TNBC) at the 2018 Natomas Basin Habitat Conservation Plan fee of \$33,091 per acre. Credits will be purchased prior to the start of construction. A total of 0.51 acre of temporary direct effects would be mitigated at a proposed 1:1 ratio, and a total of 0.013 acre of permanent direct effects would be mitigated at a proposed 5:1 ratio. A total payment of \$19,193 will be made to the TNBC for the purchase of 0.58 acre (0.51 acre for temporary impacts and 0.07 acre for permanent impacts). Permanent protection and management of mitigation habitat will be conducted by TNBC.

#### **2.4.5 Mitigation for Air Quality**

Construction will include implementation of Best Management Practices (BMP's) to minimize/avoid fugitive dust including application of water during demolition, excavation, and re-grading activities. Additionally, during construction the following measures will be taken:

- Shut-off all equipment when not in use to reduce emissions from idling.
- Keep all equipment properly maintained and operating efficiently to minimize emissions.
- Comply with California's idling restrictions for compression ignition engines.

# **Section 3 Affected Environment and Environmental Consequences**

## **3.1 No Action Alternative**

Under No Action, Reclamation would not provide CALFED Water Use Efficiency Grants to the Company to help construct the proposed action. Without funding by Reclamation, it is expected that the Company would delay construction until funding is available. The effects of the No Action would be the same or less as the Proposed Action, and thus no further analysis is necessary in this document.

## **3.2 Proposed Action**

### **3.2.1 Indian Trust Assets**

Indian Trust Assets (ITAs) are legal interests in assets that are held in trust by the United States for federally recognized Indian tribes or individuals. There are no Indian reservations, rancherias or allotments in the project area. The nearest Indian Trust Asset is the Moortown Rancheria of Maidue Indians which is about 11.32 miles north of the project area. The Proposed Action does not have a potential to affect Indian Trust Assets. (See Appendix A).

### **3.2.2 Indian Sacred Sites**

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

### **3.2.3 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 could not have a significant or disproportionately negative impact on low-income or minority individuals within the Proposed Action area.

### **3.2.4 Cultural Resources**

#### **3.2.4.1 Affected Environment**

The Proposed Action is situated in the Reclamation District 1000 Rural Historic Landscape District (RD-1000) characterized by irrigation canals and drainage canals and pumping stations that enable rice farming and the cultivation of field crops. This historic district was found eligible for listing in the National Register of Historic Places (National Register) in 1994 by Peak and Associates (Peak 1997). It is significant as one of the first and largest reclamation districts in California with a period of significance from 1911 to 1939.

A records search of the California Historical Resources Information System (CHRIS) North Central Information Center at the California State University, Sacramento took place on January 20 and 23, 2017 with a 0.5-mile radius for previously located cultural resources and inventories located in Sacramento County. A second CHRIS search with the same parameters took place on January 17, 2017 at the Northeast Information Center at the California State University, Chico for resources located in Sutter County. The CHRIS search determined that thirty-one sites are located within the record search areas, and include eighteen historic period resources, seven prehistoric sites, and three multi-component sites. Portions of the study area are located in the RD 1000 rural historic landscape.

Cultural resources inventories of study area took place in February 2017. Due to poor ground visibility at the time of inventory limited archaeological shovel testing took place to determine the presence/absence of intact subsurface archaeological deposits. No archaeological resources were discovered as a result of the pedestrian survey or the shovel testing. The architectural resources inventory identified two new historic period sites and updated information on six previously recorded historic period sites. Portions of the study area are located in the RD-1000 Historic District and its contributing elements within the study area include the RD-1000 Pumping Plant 1A and the North Drainage Canal. The Company's Laterals 3 and 3A within the study area were determined to be eligible for listing in the National Register. They are contributing elements to the RD-1000 Historic District under National Register Criterion A, for their role in Sacramento Valley agriculture and water conveyance.

#### **3.2.4.2 Project Impacts**

No cultural resources, historical resources, or historic properties were located in the Proposed Action area. Reclamation determined that the Proposed Action would have no adverse effect on historic properties. Based on review of the available information, Reclamation initiated consultation with the SHPO on February 14, 2018 and requested concurrence on a finding that the Proposed Action would have no adverse effect on historic properties, pursuant to 36 CFR § 800.5(b) (See Appendix B). Reclamation received concurrence on the National Register eligibility of these resources and the finding of no adverse effect on historic properties on March 15, 2018.

### **3.2.5 Biological Resources**

#### **3.2.5.1 Affected Environment**

The Proposed Action is located in Sacramento County, California and occurs within existing Company owned and maintained canal and access roads. Access roads and margins of the rice

fields have ruderal vegetation species that are routinely mowed. The Project is surrounded by agricultural lands, dominated by rice fields. Irrigation canals and drains crisscross the area, delivering and receiving water during rice production. Canals and drains are routinely maintained and are devoid of vegetation.

#### **3.2.5.1.1 California Natural Diversity Data Base Search**

The California Natural Diversity Database (CNDDDB) (December 2018 data) was queried to identify those sensitive species and habitats recorded within 5 miles of the Proposed Action area (CDFW, 2018). This search also included a query for designated or proposed critical habitat for federally listed species within the Taylor Monument USGS 7.5-minute topographic quad and adjacent quads. The habitats of some of these species only exist in isolated areas of adjacent quads; therefore, these species are unlikely to occur within the Proposed Action area. The USFWS Information for Planning and Conservation was queried on September 12, 2017 and updated on December 6, 2018. No designated or proposed critical habitat was identified within the Proposed Action area (USFWS, 2018).

Four of the species on the CNDDDB list have suitable habitat present in the project area. These are the California Native Plant Society rare woolly rose mallow (*Hibiscus lasiocarpus* var. *occidentalis*), Federal and state listed as threatened giant garter snake (*Thamnophis gigas*, GGS), state species of special concern western pond turtle (*Emys marmorata*, WPT) and state species of special concern western burrowing owl (*Athene cunicularia*). CNDDDB records indicate historical occurrences of GGS at the proposed check structure, with numerous other occurrences throughout the greater area. However, on the basis of current project site conditions, there is potential habitat including refugia only for the GGS and WPT. The Company routinely maintains their canals and roads in the area, keeping foraging habitat within the canals to a minimum. However, during the latter part of the growing season, the adjacent rice fields provide additional foraging opportunities.

#### **3.2.5.1.2 Site Survey**

A site survey was conducted for special status species on November 4, 2016. Potential habitat for GGS was identified but the species was not observed during the survey. Downstream (east) from the existing check structure, broken gunite and concrete provide canal slope protection. Small- and medium-sized burrows (1.25 to 3.5 inches) and canal protection (such as gunite and concrete) could provide GGS refugia habitat. During the site visit, the fields were dry and minimal standing water was in the canal. No prey species were noted (such as, small fish, frogs, or insects) in the ponded areas of the canal. Since suitable habitat is present in the Proposed Action area, GGS is considered to be present.

The site survey determined potential aquatic habitat for WPT could occur within the canal structures and adjacent rice fields when water is present. During the site visit, the fields were dry and minimal standing water was in the canal; no individuals of this species were observed during the site visit. The canal banks may provide basking sites for WPT. Overwintering habitat is likely limited to the bottom substrates in the canal.

The site survey also looked for bird species. To meet the CDFW recommendations for protection of Swainson's hawk (*Buteo swainsoni*), a state-listed threatened species, nest sites and nesting surveys were planned. However, because no suitable nest trees were within 0.5 mile of the proposed project, nesting surveys were not required (California Department of Fish and Game,



1994; Swainson's Hawk Technical Advisory Committee, 2000). No nesting habitat was noted for tri-colored blackbird (*Agelaius tricolor*), a California species of special concern. California ground squirrel burrows were present near the check structure along the canal and access roads. No burrowing owls or evidence of burrowing owl occupancy (such as, feathers, pellets, or white wash) was observed within the proposed project site (where access was allowed). The survey occurred during the nonbreeding season for burrowing owl; however, no burrowing owl or burrowing owl evidence was noted in the area.

No vernal pools occur within 250 feet of the project area. No other special-status species or suitable habitat was noted or observed during the survey effort.

The proposed Cottonwood Check structure is located within routinely maintained canals and routinely mowed dirt roads. No vegetation was noted in the canal during the site survey. While no protocol special-status plant surveys were conducted, impacts to the one special-status plant species identified in the CNDDDB query, (wooly rose mallow), which grows in wet areas (CNPS, 2018), are considered to be unlikely because no vegetation was noted in the canal during the site survey and the routinely mowed roads would not provide suitable habitat for this species.

### **3.2.5.2 Project Impacts**

#### **3.2.5.2.1 General**

Direct impacts to approximately 0.51 acres of aquatic and upland habitat would result from removal of the existing check structure, excavation and construction of the new check structure, and shallow trenching for electrical conduit. These impacts would be temporary and would be confined to the existing canal and dirt access road surfaces. Downstream (east) from the existing check structure, approximately 0.013 acre of broken gunite and concrete would be removed and replaced with 0.013 acre of riprap to armor the canal edges to provide canal slope protection.

#### **3.2.5.2.2 Giant Garter Snake**

##### *3.2.5.2.2.1 Potential Effects to GGS Individuals*

Because GGS are presumed to be present within the Proposed Action area, several aspects of the Project would result in an increased risk of mortality or species take. Potential impacts are associated with disturbance during demolition of the existing check structure, facilities construction (e.g., trenching, earthmoving, and placement of riprap), and increased vehicle traffic on surface roads adjacent to open-water habitat during construction. GGS could be crushed beneath heavy construction equipment during ingress or egress from the construction site or entombed in below-ground refugia during trenching and earthmoving activities. Potential impacts during demolition and construction would be minimized or avoided through implementation of project-specific avoidance and minimization measures (Section 2.4.2) such as environmental awareness training for construction personnel, USFWS/CDFW-approved biological monitors on-site during construction activities, preparation of a GGS relocation plan, and conducting preconstruction surveys for GGS (e.g., flagging of potential GGS habitat).

During construction, injury and mortality of GGS would be further minimized by suspending activity when a snake is encountered, restricting movement of equipment and vehicles to established roadways and designated laydown area, and observation of vehicle speed limits. The initial excavation and removal of the broken gunite and concrete from the surface of the canal channel would be completed with hand tools and under the supervision of a USFWS/CDFW-approved biologist, which would reduce the potential for GGS to be entombed in below-ground refugia during trenching and earthmoving activities. In addition, if a snake is encountered, construction activities would be suspended, USFWS and CDFW would be notified, and the USFWS/CDFW-approved biologist would respond in accordance with the GGS relocation plan. With the project-specific avoidance and minimization measures identified in Section 2.4.1, the Project is not expected to result in mortality of GGS.

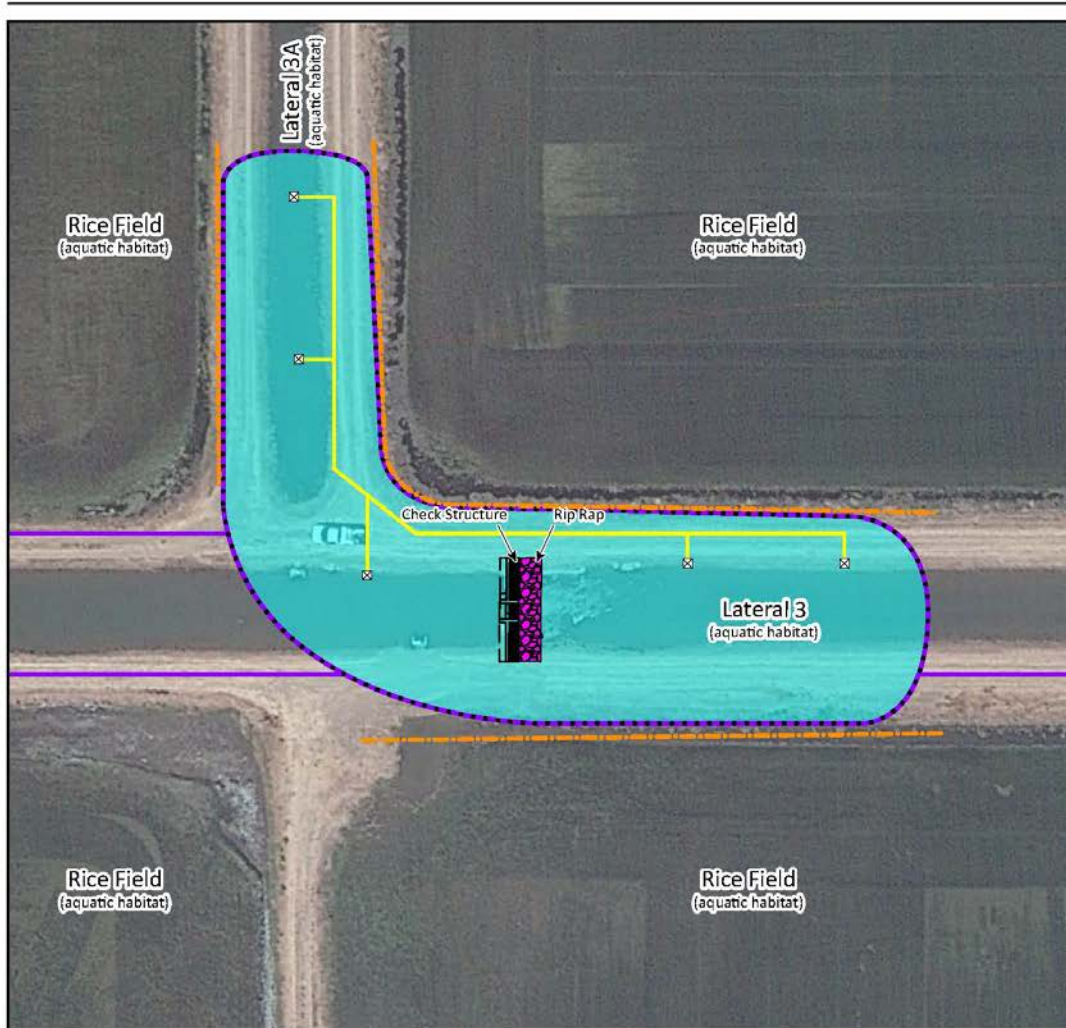
Although GGS presence is considered likely and construction activity may result in short-term habitat impacts, no long-term adverse impacts are anticipated to occur as a result of the Project. The Project would result in improved water management both locally at the check structure and regionally in the Natomas Basin.

#### *3.2.5.2.2.2 Potential Effects to GGS Habitat*

Suitable habitat for GGS is present in the project area. Direct impacts to approximately 0.51 acre of disturbed ruderal vegetation and canal would result from removal of the existing check structure, excavation and construction of the new check structure, and shallow trenching for electrical conduit. These impacts would be temporary and would be confined to the existing canal and dirt access road surfaces. After the approximately 4 weeks of construction activities are complete, any temporarily disturbed areas will be restored to their pre-Project conditions. Downstream (east) from the existing check structure, approximately 0.013 acre of broken gunite and concrete would be removed and replaced with 0.013 acre of riprap to arm the canal edges to provide canal slope protection. Compensatory mitigation (see Section 2.4.4) is proposed to fully mitigate Project impacts on GGS habitat. Compensatory mitigation will be completed in advance of the impacts to be mitigated. While not natural habitat, GGS have been documented as using riprap for shelter; therefore, this Project component may improve refugia habitat conditions for GGS. Figure 5 depicts the areas of direct effects on potentially suitable GGS habitat.

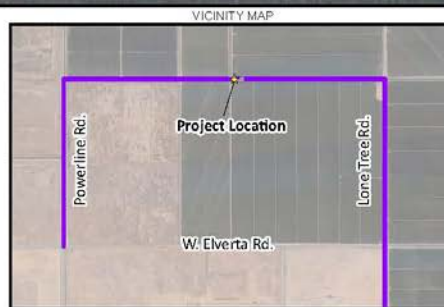
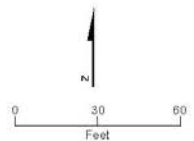
#### **3.2.5.2.3 Western Pond Turtle**

Suitable habitat for WPT is present in the project area. Approximately 0.013 acre of broken gunite and concrete would be removed and replaced with 0.013 acre of riprap and 0.51 acre of disturbed ruderal vegetation and canal would result from removal of the existing check structure, excavation and construction of the new check structure, and shallow trenching for electrical conduit. Therefore, work associated with the proposed Project would permanently affect 0.013 acre and temporarily affect 0.51 acre of upland and aquatic habitat within the Proposed Action area that may be used by WPT. Preconstruction surveys would be conducted and worker environmental awareness training about species and protection measures would be conducted for all construction staff. Although WPT presence is considered likely and the approximately 4



- LEGEND**
- Action Area
  - Temporary Impacts (0.51 acre)
  - Permanent Impacts (0.013 acre)
  - Exclusion Fencing
  - High Visibility Fencing
  - ⊗ Proposed Water Level Sensor/Flow Meter
  - Data/Cable Trench (3'D x 1'W x 275'L)  
(Trench Impacts = 0.006 acre)

USGS Quad: Taylor Monument  
 Section: 17, 18, 19, and 20  
 Township: 10N  
 Range: 04E  
 Imagery: Google™ Earth, 2017.



**FIGURE 3**  
**Action Area and Direct Effects to GGS Habitat**  
 Natomas Central Mutual Water Company  
 Proposed Cottonwood Check Structure  
 Sacramento County, CA



Figure 5. Action Area and Direct Effects to GGS Habitat

weeks of construction activity may result in temporary habitat impacts, no long-term adverse impacts are anticipated to occur as a result of the Project.

#### **3.2.5.2.4 Birds Protected Under the Migratory Bird Treaty Act**

Migrating waterfowl would not be affected because the migration season would be over by the time construction is initiated. The sides of the canal are almost completely devoid of vegetation (Figure 3) since they are routinely mowed. There are no shrubs or trees present in the project area, and no tree removal is proposed. Any construction activities conducted during the normal nesting season (February 15 through August 31) would be preceded by a preconstruction survey no more than 15 days prior to the start of construction and covering a radius 100 feet for non-listed passerines at all work locations. If nesting birds are found, the USFWS/CDFW-approved biologist will evaluate whether existing screening buffers (e.g., buildings, trees, and intervening topography) are sufficient to allow work to proceed, and will determine what level of work exclusion buffers or nest monitoring, if any, is needed. As a result, there would be no direct displacement of nesting birds.

#### **3.2.5.3 Consultation with Fish and Wildlife Service**

Reclamation sent a memorandum to USFWS on January 8, 2018 requesting formal consultation on the impacts of the Proposed Action to the GGS. USFWS responded with a biological opinion on August 1, 2018. (Appendix C). USFWS concluded that the Proposed Action is not likely to jeopardize the continued existence of the GGS based on the conservation measures proposed and the purchase of conservation credits to minimize the permanent loss of snake habitat. In addition, CDFW issued a Consistency Determination on September 6, 2018.

### **3.2.6 Air Quality**

The Proposed Action is located in Sacramento County, which lies within the Sacramento Valley Air Basin (SVAB). Air basins share a common “air shed”, the boundaries of which are defined by surrounding topography. Although mixing between adjacent air basins inevitably occurs, air quality conditions are relatively uniform within a given air basin. Air quality in the Proposed Action area is regulated by the Sacramento Metropolitan Air Quality Management District (SMAQMD).

The U.S. Environmental Protection Agency and California Air Resources Board developed federal and state health-based air quality standards, known as National and California ambient air quality standards (NAAQS and CAAQS), for criteria air pollutants. Criteria air pollutants consist of carbon monoxide, ozone, sulfur dioxide, nitrogen dioxide, inhalable particulate matter between 2.5 and 10 microns in diameter (PM<sub>10</sub>), particulate matter less than 2.5 microns in diameter (PM<sub>2.5</sub>), and lead. The CAAQS also set standards for sulfates, hydrogen sulfide and visibility. Regionally, some portions of the SVAB have fewer air quality problems than others.

Sacramento County is designated as a nonattainment area for the 8-hour ozone NAAQS and nonattainment for the CAAQS for ozone and PM<sub>10</sub> (CARB, 2014; State of California, Office of Administrative Law [OAL], 2017). Sacramento County attained the federal PM<sub>2.5</sub> health

standards on December 31, 2011 and have requested re-designation of the area to attainment for the federal standard (SMAQMD et al. 2013).

Section 176(c) of the Clean Air Act (42 U.S.C. 7506(c)) requires that any entity of the federal government that engages in, supports, or in any way provided financial support for, licenses or permits, or approves any activity to demonstrate that the action conforms to the applicable State Implementation Plan before the action is otherwise approved. The U.S. Environmental Protection Agency promulgated the General Conformity Rule to ensure that such federal actions are consistent with a State Implementation Plan's purpose of eliminating or reducing the severity and number of violations of the NAAQS for criteria air pollutants and achieving expeditious attainment of those standards. If an action does not conform to the State Implementation Plan, the Federal agency must submit a conformity determination to the U.S. Environmental Protection Agency, State and local air pollution control agencies, and to the public. Federal actions that are exempt from the General Conformity Regulations include, but are not limited to, actions with associated emissions clearly at or below specified *de minimis* levels (USEPA 2017).

### **3.2.6.1 Project Impacts**

Construction emissions would be short term and vary from day to day and by activity, timing and intensity. Temporary impacts from construction on disturbed ruderal vegetation and the existing canal would occur over approximately 0.51 acres. A portion of the existing gunite and concrete would be removed from within the canal directly downstream from the existing structure (approximately 0.013 acres). Total construction would last about 4 weeks.

Short-term air quality impacts would be associated with demolition, excavation, construction of the new check structure, and final grading, and would generally arise from dust generation (fugitive dust) and operation of construction equipment and vehicle traffic on paved and unpaved roads. Fugitive dust is a source of airborne particulates, including PM<sub>10</sub> and PM<sub>2.5</sub>. Control of fugitive dust is required by District Rule 403 and enforced by SMAQMD. As part of the SMAQMD has adopted Basic Construction Emission Control Practices (Best Management Practices), watering is required to control fugitive dust from a construction site (SMAQMD 2016, 2018).

Earth-moving equipment, trucks, and other mobile sources powered by diesel or gasoline are also sources of combustion emissions, including nitrogen dioxide, carbon monoxide, volatile organic compounds, sulfur dioxide, and small amounts of air toxics.

The SMAQMD has developed a screening level to assist in determining if nitrogen dioxide and particulate emissions from constructing a project in Sacramento County will exceed SMAQMD construction significance thresholds. This screening level was developed using default construction inputs in the California Emissions Estimator Model. Projects that are 35 acres or less in size generally will not exceed the SMAQMD construction thresholds of significance for nitrogen dioxide or particulates, provided that the project meets all the screening parameters. All construction projects regardless of the screening level are required to implement the Basic Construction Emission Control Practices (SMAQMD 2018).

The Proposed Action would disturb approximately 0.523 acres which is much less than the screening level of 35 acres and the project meets all of the screening parameters. Therefore, the

Proposed Action would not exceed SMAQMD thresholds of significance. Since the Proposed Action will be below SMAQMD adopted thresholds which are more stringent than the *de minimis* thresholds, the Proposed Action would also fall below federal general conformity thresholds and a Federal general conformity analysis report is not required. Thus, the Proposed Action would have a *de minimus* effect on air quality.

### **3.2.7 Cumulative Impacts**

According to Council on Environment Quality regulations for implementing the procedural provisions of National Environmental Policy Act, a cumulative impact is defined as *the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.7).*

Greenhouse gas (GHG) impacts are considered to be cumulative impacts since any increase in GHG emissions would add to the existing inventory of gases that could contribute to climate change. Reclamation provided a grant in 2015 to the Garden Highway Mutual Water Company for the System Modernization and Real-Time Monitoring and Control Project, adjacent to the Proposed Action. The estimated GHG emissions for the Garden Highway project were 13.22 metric tons of carbon dioxide equivalents, due to temporary project construction activities. The Proposed Action is smaller in magnitude than the Garden Highway project.

The SMAQMD provides a recommended threshold of 1,100 metric tons of carbon dioxide equivalent emission annually during construction for agencies without adopted GHG reduction plans or their own adopted thresholds (SMAQMD 2018). If a project's emissions exceed the threshold of significance, then the project emissions may have a cumulatively considerable contribution to a significant cumulative environmental impact. Construction-related GHG emissions from the Proposed Action would be the same or less than the 13.22 metric tons of carbon dioxide equivalent per year anticipated to be emitted from the similar Garden Highway project. Therefore, the Proposed Action's GHG emissions are well below 1,100 metric tons/year and the contribution of GHG is negligible.

## **Section 4 Consultation and Coordination**

### **4.1 Agencies and Persons Consulted**

Reclamation consulted with the U.S. Fish and Wildlife Service, California Department of Fish and Wildlife, State Historic Preservation Officer, and Natomas Central Mutual Water Company.

### **4.2 Endangered Species Act (16 USC § 1531 et seq.)**

Section 7 of the Endangered Species Act 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 the critical habitat of these species.

### **4.3 National Historic Preservation Act (NHPA) (54 USC § 306108 )**

Reclamation is consulting under Title 54 USC § 306108, commonly known as Section 106 of the NHPA, which requires that federal agencies give the Advisory Council on Historic Preservation an opportunity to comment on the effects of an undertaking on historic properties, properties that are eligible for inclusion in the National Register. The 36 CFR Part 800 regulations implement Section 106 of the NHPA. Section 106 of the NHPA requires federal agencies to consider the effects of federal undertakings on historic properties, properties determined eligible for inclusion in the National Register.

## Section 5 References

- California Department of Fish and Game. 1994. Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (*Buteo swainsoni*) in the Central Valley. November 1.
- Californian Natural Diversity Database (CNDDDB), California Department of Fish and Wildlife. 2018. Accessed online December 2018. <https://www.wildlife.ca.gov/Data/BIOS>.
- CH2M. 2017. Cultural Resources Inventory Report for the Cottonwood Check Structure Automation, SCADA Integration, and North Drainage Canal Lift Pump Station Projects, Sacramento and Sutter Counties, California.
- Council on Environmental Quality. 2014. Revised Draft Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in NEPA Reviews. Federal Register /Vol. 79, No. 247 /Wednesday, December 24, 2014.
- Peak, Melinda A. 1997. Historic American Engineering Record for the Reclamation District 1000 HAER No. CA-187. Prepared by Peak & Associates, Eldorado Hills, CA.
- Sacramento Metropolitan Air Quality Management District (SMAQMD). 2017. Air Quality and Health. SMAQMD Website <http://www.airquality.org/air-quality-health>
- Swainson's Hawk Technical Advisory Committee. 2000. Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley. May 31.
- Sacramento Metropolitan Air Quality Management District (SMAQMD). 2018. Guide to Air Quality Assessment in Sacramento County. December 2009. Revised September 2010, April 2011, May 2011, April 2013, June 2013, July 2013, August 2013, October 2013, June 2014, November 2014, May 2015, June 2015, December 2015, February 2016, March 2016, May 2016, June 2016, August 2016, September 2016, December 2016, May 2017, April 2018, and May 2018. Individual chapters available for download at: <http://www.airquality.org/Residents/CEQA-Land-Use-Planning/CEQA-Guidance-Tools>
- Sacramento Metropolitan Air Quality Management District (SMAQMD), El Dorado County Air Quality Management District, Placer County Air Pollution Control District, Yolo-Solano Air Quality Management District. 2013. PM2.5 Implementation/Maintenance Plan and Re-designation Request for Sacramento PM2.5 Nonattainment Area. October.
- State of California, Office of Administrative Law (OAL). 2017. Notice of Approval of Changes without Regulatory Effect. 2016 Changes by Operation of Law. Area Designations for State Ambient Air Quality Standards. Chapter 1. Air Resources Board. Subchapter 1.5. Air Basins and Air Quality Standards. Article 1.5. Area Pollutant Designations.
- USEPA. 2017. General Conformity: Frequent Questions about General Conformity. U.S. Environmental Protection Agency. Website: <https://www.epa.gov/general-conformity/frequent-questions-about-general-conformity#2>. Accessed: August 14, 2018.



U.S. Fish and Wildlife Service. 2018. List of threatened and endangered species. Generated through IPaC. Sacramento, CA.

# **Appendix A Indian Trust Assets Compliance**

10/22/2015

**Indian Trust Assets  
Request Form (MP Region)**

Submit your request to your office's ITA designee or to MP-400, attention Kevin Clancy.

**Date:**

<b>Requested by</b> (office/program)	Doug Kleinsmith
<b>Fund</b>	16XR0687NA
<b>WBS</b>	RX.31721000.000000
<b>Fund Cost Center</b>	2015200
<b>Region #</b> (if other than MP)	
<b>Project Name</b>	Natomas Central Mutual Water Company: Cottonwood Check Automation Project; and NMWC/RD1000 SCADA Integration Project
<b>CEC or EA Number</b>	
<b>Project Description</b> (attach additional sheets if needed and include photos if appropriate)	<p>1. Cottonwood Check Automation Project: This project will reconstruct the existing Cottonwood check structure to provide a self-regulating vertical leaf gate that opens/closes to maintain a consistent upstream water level. In addition to the new check structure improvements, two flow meters, three water level sensors and a solar powered SCADA RTU will be installed to expand the coverage/features of the Company SCADA system for improved water management.</p> <p>2. NMWC/RD1000 SCADA Integration Project: NCMWC is proposing to install water level sensors and pump runtime meters at the eight RD1000 pump stations to improve drain water management and tailwater recovery. The project will include implementing RD1000's SCADA system and integration with the NCMEWC's SCADA system.</p>

10/22/2015

<b>*Project Location (Township, Range, Section, e.g., T12 R5E S10, or Lat/Long cords, DD-MM-SS or decimal degrees). Include map(s)</b>	121.5 longitude and 39.3 latitude (See figure below).
--	---

/s/ Doug Kleinsmith  
Signature

Doug Kleinsmith  
Printed name of preparer

7/27/16  
Date

**ITA Determination:**

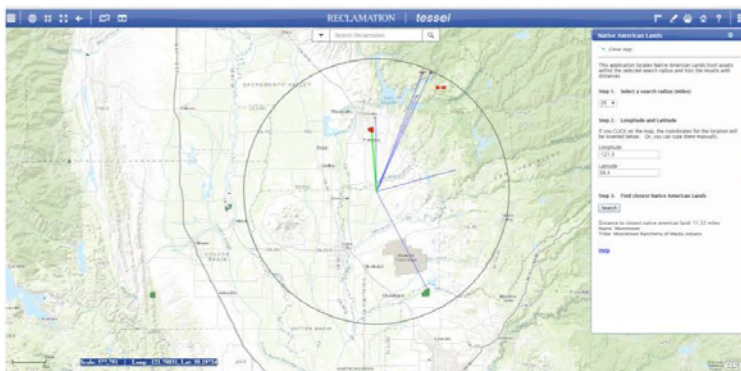
The closest ITA to the proposed Natomas Central Mutual Water Company activity is the Moortown Rancheria of Maidue Indians about 11.32 miles to the north (see attached image).

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.

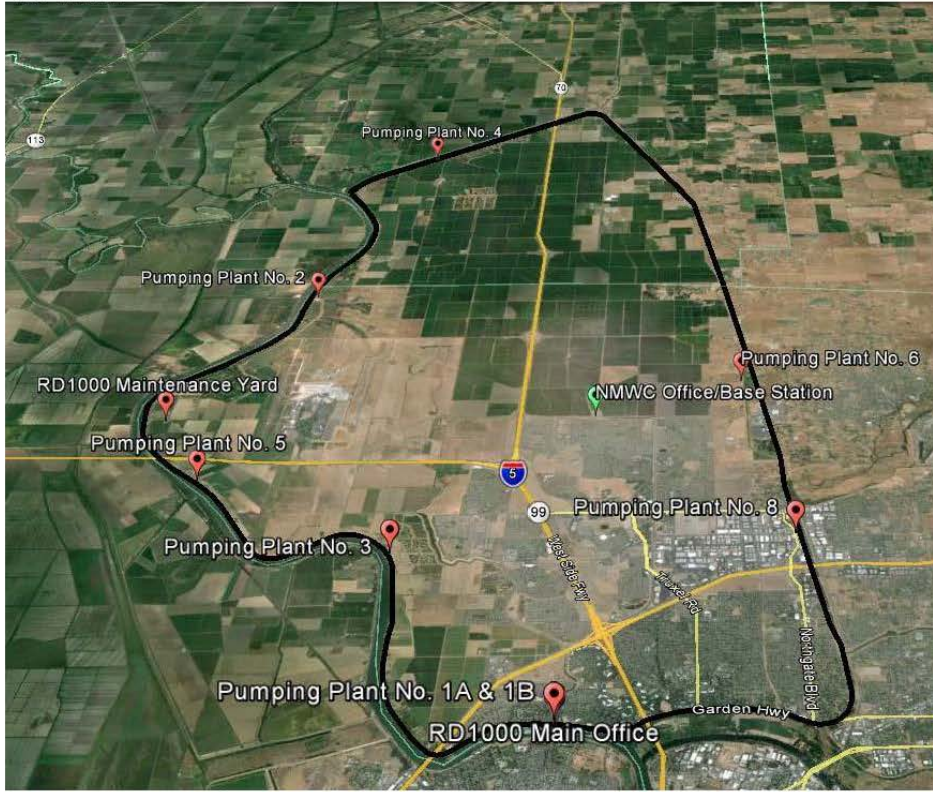
K. Clancy  
Signature

Kevin Clancy  
Printed name of approver

8/1/2016  
Date



10/22/2015



# **Appendix B Cultural Resources Compliance**

**CULTURAL RESOURCE COMPLIANCE**  
**Mid-Pacific Region**  
**Division of Environmental Affairs**  
**Cultural Resources Branch**

MP-153 Tracking Number: 15-NCAO-195/15-NCAO-196/16-NCAO-174

Project Name: Reclamation District 1000 (RD-1000) and Natomas Central Mutual Water Company (NCMWC) Supervisory Control and Data Acquisition (SCADA) Integration, Cottonwood Check Structure, and North Drainage Canal (NDC) Lift Pump Station Projects, Sacramento & Sutter Counties

NEPA Document: 18-18-MP

MP 153 Cultural Resources Reviewer: Lex Palmer

Date: March 15, 2018

---

Reclamation proposes to approve CALFED Water Use Efficiency program grant funding for the installation of SCADA systems and a Lift Pump Station located within the RD-1000 and NCMWD boundaries. This action constitutes an undertaking with the potential to cause effects to historic properties, assuming such properties are present, requiring compliance with Section 106 of the National Historic Preservation Act (NHPA) as amended.

Based on historic properties identification efforts conducted by CH2M on behalf of RD-1000 and NCMWC, Reclamation made a finding of no adverse effect to historic properties by the proposed undertaking. Reclamation notified the State Historic Preservation Officer (SHPO) of this finding, pursuant to 36 CFR §800.4(d)(1). SHPO replied with concurrence on the finding. 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.

Please note that as a condition of this finding, Reclamation will provide a staff archaeologist to monitor the installation of a SCADA tower at the RD-1000 work shop. RD-1000 must coordinate with Reclamation on when this activity will occur.

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. Thank you for providing the opportunity to comment on this project.

Attachment:

Letter: SHPO to Reclamation dated March 15, 2018



**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

March 15, 2018

In reply refer to: BUR\_2018\_0215\_001

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 for the Reclamation District 1000 (RD-1000) and Natomas Central Mutual Water Company (NCMWC) Supervisory Control and Data Acquisition (SCADA) Integration, Cottonwood Check Structure, and North Drainage Canal (NDC) Lift Pump Station Projects, Sacramento & Sutter Counties, CA (Projects #15-NCAO-195; #15-NCAO-196; #16-NCAO-174)

Dear Ms. Leigh:

The State Historic Preservation Officer (SHPO) received on February 15, 2018 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 Bureau of Reclamation (Reclamation) is seeking comments on delineation of the Area of Potential Effects (APE), appropriateness of historic properties identification efforts, and on its effect finding of no adverse effect to historic properties. The following documentation was provided:

- *Enclosure 1: Cultural Resources Inventory Report for the Cottonwood Check Structure Automation, SCADA Integration, and North Drainage Canal Lift Pump Station Projects, Sacramento and Sutter Counties, California; Reclamation Projects 15-NCAO-195/196; October 2017 [By: G. Cardenas, L. Price, M. Montgomery, N. Lawson, & A. McCarthy-Reid; CH2M HILL, Inc., Santa Ana, CA] [For: Natomas Central Mutual Water Company, Rio Linda, CA, and U.S. Bureau of Reclamation, Mid-Pacific Region Environmental Affairs MP-150, Sacramento, CA].*
- *Enclosure 2: (on Compact Disk): Appendix C: As Built for Project; Appendix D: DPR 523 forms.*

Proposed work involves three interrelated grant-funded projects that are located within RD-1000 and NCMWD boundaries. Basically, the RD-1000 infrastructure drains the natural floodplain of the basin, while NCMWC infrastructure provides local agricultural irrigation:

- The SCADA Integration Project (#15-NCAO-195) requires RD-1000 and NCMWD to coordinate to install SCADA water level sensors and telemetry towers at nine sites that include seven RD-1000 pump stations, the RD-1000 shop, and the RD-1000 office. Excavation is needed to install the towers and run hard wire conduit from the towers to existing electrical control buildings.
- The Cottonwood Check Project (#15-NCAO-196) will replace an existing check structure in NCMWD's Lateral 3 with a new, automated Hydra-LOPAC gate; install instrumentation and control equipment conduit and cables along the Lateral 3 and Lateral 3A canal access roads; and place a solar powered SCADA system terminal at the new automated gate to manage flows.
- The NDC Lift Pump Station Project (#16-NCAO-174) is designed to recover agricultural tailwater by constructing a new lift pump on the south side of the NCMWD's Sankey Canal and access road. Construction components include a cast-in-place or precast concrete wet well and pump base slab, and installation of motors, a control cabinet, and electrical transformer. The wet well requires a concrete intake and trash racks to cover four 48-inch



intake pipes. The lift pump station needs excavation for electrical service conduit in the lower Sankey Canal access road.

The goal for the three projects is to provide greater flexibility in meeting spring water demands, improve water management, reduce Sacramento River fresh water diversions by 4,000 acre-feet annually, and reduce the amount of excess drain water being pumped back into the river.

The Area of Potential Effects (APE) comprises eleven (11) discontinuous light industrial and rural locations (Figures: 1-12A, Appendix A, CH2M 2017). All staging will occur on existing canal access roads, in the canals, or on paved surfaces at the RD-1000 and NCMWD headquarters shops. The total APE acreage for all three projects is about 5.3 acres:

- The RD-1000 SCADA Project (15-NCAO-195) horizontal APE will be 5 feet by 5 feet at each of the nine tower locations, with a vertical APE ranging from 3 feet deep for electrical conduit runs with varying lengths, and 10 feet deep for tower foundations.
- The Cottonwood Check Project (15-NCAO-196) horizontal APE is 80 square feet for the check structure replacement work area, and 275 feet long by 12 inches wide for the cable trench in the Lateral 3 and Lateral 3A canal access roads. The vertical APE is 3 feet deep. In addition, about 900 square feet of riprap will be installed upstream and downstream of the new check structure in the existing canal prism. Work will be in the canal and from the dirt access roads.
- The NDC Lift Station Project (16-NCAO-174) horizontal APE is 100 feet long and 65 feet wide for the lift station, and 270 feet long and 12 inches wide for an electrical service line conduit trench to be placed in the lower Sankey Canal access road. The vertical APE will be 14 feet deep.

On behalf RD-1000 and NCMWD, CH2M Hill Inc. (CH2M: 2017) conducted background records searches and conducted a cultural resources inventory that included shovel testing in portions of the APE. No archaeological sites were located during the inventory. Six (6) previously recorded and two newly recorded historic period architectural sites are located in the APE. Sections of the APE are located within the recorded boundary of the RD-1000 Rural Landscape Historic District and its contributing elements within the APE include the RD-1000 Pumping Plant 1A and the North Drainage Canal. The RD-1000 pumping plants record drawings (as-builts) were provided (Compact Disk enclosure).

The RD-1000 Rural Landscape Historic District was determined eligible for listing in the National Register of Historic Places (NRHP) in 1994 (Peak and Associates: 1997). It is significant as one of the first and largest reclamation districts in California with a period of significance from 1911 to 1939 and has been recorded and documented for the Historic American Engineering Record (HAER No. CA-187, June 1997). CH2M documented the NCMWC Lateral 3 and Lateral 3A in the APE, and recommended that the NCMWD irrigation system is eligible for NRHP listing as a contributing element to the RD-1000 Historic District under National Register Criterion A, for its role in Sacramento Valley agriculture and water conveyance. Reclamation agrees with the CH2M recommendation that Lateral 3 and Lateral 3A are eligible for NRHP listing as contributors to the district.

Reclamation identified the United Auburn Indian Community of the Auburn Rancheria (UAIC), Buena Vista Rancheria, Lone Band of Miwok Indians, Shingle Springs Band of Miwok Indians (Shingle Springs Band), and Wilton Rancheria as tribes potentially having interests in the project area. Reclamation contacted these tribes by letter dated April 07, 2017, and invited their participation in the Section 106 process. Reclamation also sent letters dated April 07, 2017, to the Nashville-El Dorado Miwok, Tsi Akim Maidu, and Mr. Don Ryberg of the Tsi Akim Maidu requesting their assistance in site identification.

The UAIC and the Shingle Springs Band responded, requesting copies of any associated cultural resources inventory reports and to be Section 106 consulting parties. Reclamation replied on October 24, 2017, providing the draft inventory report and again requesting information on any cultural resources of concern specific to these projects. A site visit was done with UAIC representatives on January 9, 2018. The UAIC indicated concerns about a SCADA tower installation at the RD-1000 shop due to proximity of known recorded prehistoric sites located along the Sacramento River east bank (CH2M 2017: Figure 10A). To address the UAIC concerns, Reclamation will provide a staff archaeologist to monitor the SCADA Tower foundation excavation that is located within the RD-1000 shop APE. Reclamation currently has no further responses, but will work to address any concerns that may subsequently arise and will make notifications as required.

Reclamation applied the criteria of adverse effect for each component and reached the following conclusions. The SCADA Integration Project (15-NCAO-195) involves construction of vertical antennas, though placement is in locations that will not have an indirect visual, or direct effect, to any contributing RD-1000 Historic District historic properties. Removal of the Cottonwood Check Structure (15-NCAO-196) constitutes only a minor change within the NCMWC irrigation system that has over 100 miles of canals, and the new replacement gate will let Lateral 3 continue to operate as designed. The NDC Lift Station Project (16-NCAO-174) will be built on only 200 feet of the 4-mile-long North Drainage Canal, which is a contributing element to the RD-1000 historic district. The new lift station is a minor change in the setting of the canal, will not impact the structure's National Register eligibility, and will allow the canal to still function as intended.

Following OHP staff review, the following comments are offered:

- Pursuant to 36 CFR 800.4(a)(1), there are no objections to the overall APE as defined;
- Pursuant to 36 CFR 800.4(b), Reclamation has documented a reasonable and good faith effort to identify historic properties within all sections of the area of potential effects.
- Pursuant to 36 CFR 800.4(c)(2), **I do not object** that Reclamation has determined that NCMWC Lateral 3 and Lateral 3A are eligible for listing in the NRHP under Criterion A, as contributors to the eligible RD-1000 Rural Landscape Historic District.
- Reclamation finds that, with the condition of having a Reclamation staff archaeologist monitor the SCADA Tower foundation excavation that is located within the RD-1000 shop APE, the proposed undertaking will result in no adverse effects to the historic properties affected. Pursuant to 36 CFR 800.5(b), **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](mailto:Jeanette.Schulz@parks.ca.gov) or her desk phone is: (916) 445-7031.

Sincerely,



Julianne Polanco  
State Historic Preservation Officer

# **Appendix C Endangered Species Consultation**



## United States Department of the Interior



In Reply Refer to:  
08ESMF00-  
2018-F-2667-1

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

AUG 01 2018

### Memorandum

To: Anastasia T. Leigh, Regional Environmental Officer, Mid-Pacific Regional Office,  
U.S. Bureau of Reclamation, Sacramento, California

From: *Doug Weirich*  
Jennifer M. Norris, Field Supervisor, Sacramento Fish and Wildlife Office,  
U.S. Fish and Wildlife Service, Sacramento, California

Subject: Formal Consultation on the Proposed Cottonwood Check Automation Project and  
the North Drainage Canal Lift Pump Station Project, Sacramento and Sutter  
Counties

This memorandum is in response to the U.S. Bureau of Reclamation's (Bureau) January 8, 2018, request for formal consultation on the proposed Cottonwood Check Automation Project and the North Drainage Canal Lift Pump Station Project (proposed projects), in Sacramento and Sutter Counties, California. Your request, which included the May 2018, *Biological Assessment – Cottonwood Check Automation Project*, and the May 2018, *Biological Assessment – North Drainage Canal Lift Pump Station Project* (biological assessments), were received by the U.S. Fish and Wildlife Service (Service) on January 8, 2018. The biological assessments present an evaluation of the proposed project's effects on species federally-listed under the Endangered Species Act of 1973, as amended (16 U.S.C. §1531 *et seq.*) (Act).

The federal action we are consulting on is the Bureau partially funding the proposed projects through a CALFED Water Use Efficiency grant with the Natomas Central Mutual Water Company (applicant) for the replacement of the existing check structure on the Lateral 3 Canal, and the new construction of a lift pump station on the North Drainage Canal (NDC). This response is provided under the authority of the Act, and in accordance with the implementing regulations pertaining to interagency cooperation (50 CFR 402).

The findings presented in the biological assessments conclude that the proposed projects may affect, and are likely to adversely affect the federally-listed as threatened giant garter snake (*Thamnophis gigas*) (snake). The proposed projects are not within designated or proposed critical habitat for any federally-listed species.

We have considered the following in our review of the proposed projects: 1) your May 2018, biological assessments; 2) your May 8, 2018, letter initiating formal consultation; 3) email and telephone correspondence between the Service and the consultant; and 4) additional information available to the Service.

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### Consultation History

- March 1, 2017:* The Service conducted a site visit with representatives of the Bureau, California Department of Fish and Wildlife (CDFW), the applicant, and CH2M Hill, Inc. (consultant).
- April 20, 2017:* The Service participated in a conference call with the Bureau, CDFW, and the consultant to discuss the proposed projects.
- January 8, 2018:* The Service received the January 8, 2018, letter from the Bureau initiating consultation on the proposed projects.
- May 30, 2018:* The Service received an email from the Bureau with the revised biological assessments for the proposed projects that included all the supplemental information necessary to begin consultation.

## BIOLOGICAL OPINION

### Description of the Action

The proposed projects include the replacement of the existing check structure at Cottonwood Creek, and the new construction of a tailwater recovery lift pump station at the NDC. The Cottonwood Check structure is located east of Powerline Road, north of West Elverta Road, and approximately 2.5 miles northeast of the Sacramento International Airport in Sacramento County. The NDC Lift Pump Station is located west of Powerline Road and north of Sankey Road approximately 2.2 miles east of Verona, in Sutter County.

The Cottonwood Check Automation Project includes the removal of the existing Cottonwood Check structure in the Lateral 3 canal and replace it with a self-regulating vertical leaf gate that automatically opens and closes to maintain a constant upstream water level (Figure 1). New polyvinyl chloride (PVC) conduit for instrumentation and control equipment cables will be installed along the canal bank. In addition to the new check structure improvements, flow meters, water level sensors, and a solar-powered Supervisory Control and Data Acquisition (SCADA) remote terminal unit will be installed to expand the coverage and features of the applicant's SCADA system. The existing broken concrete lining immediately downstream of the check structure will be removed and replaced with riprap.

The Cottonwood Check Automation Project includes the following components:

- A new cast-in-place concrete structure for mounting the automated vertical leaf gate. After demolition of the existing structure, the location of the structure will be prepared using an excavator and/or backhoe to provide a clean surface for placement of concrete forms and reinforcing steel.
- Approximately 275 feet of new PVC conduit for instrumentation and control equipment (level sensors and flow meters) cables will be installed along the canal bank in a 2- to 3-foot-deep, 8-inch to 12-inch-wide trench. The conduit trenches will be excavated concurrently or after placement of the new concrete structure using a backhoe or skid steer. Trench spoils will be placed adjacent to the trench excavation and will be used to backfill the trenches. Conduit will be placed in the trench and backfilled with the spoils from the trench excavation. The conduit will transition from below grade to above grade at required

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termination locations such as the flow meters, level transducers, and SCADA remote terminal unit (new concrete structure).

- Two flow meters and three water level sensors will be installed upstream and downstream of the new check structure and in the adjacent Lateral 3A Canal. The flow meters are surface mount type units and will be placed at grade. Level transducers will be placed in surface mounted stilling wells (vertical sections of PVC pipe with holes drilled in them).
- A solar-powered SCADA remote terminal unit will be mounted to the concrete structure. The SCADA remote terminal unit will be mounted to the new concrete structure.
- 0.013 acre of riprap will be installed immediately downstream of the check structure.

Figure 1: Effects to the Snake from the Cottonwood Check Automation Project.



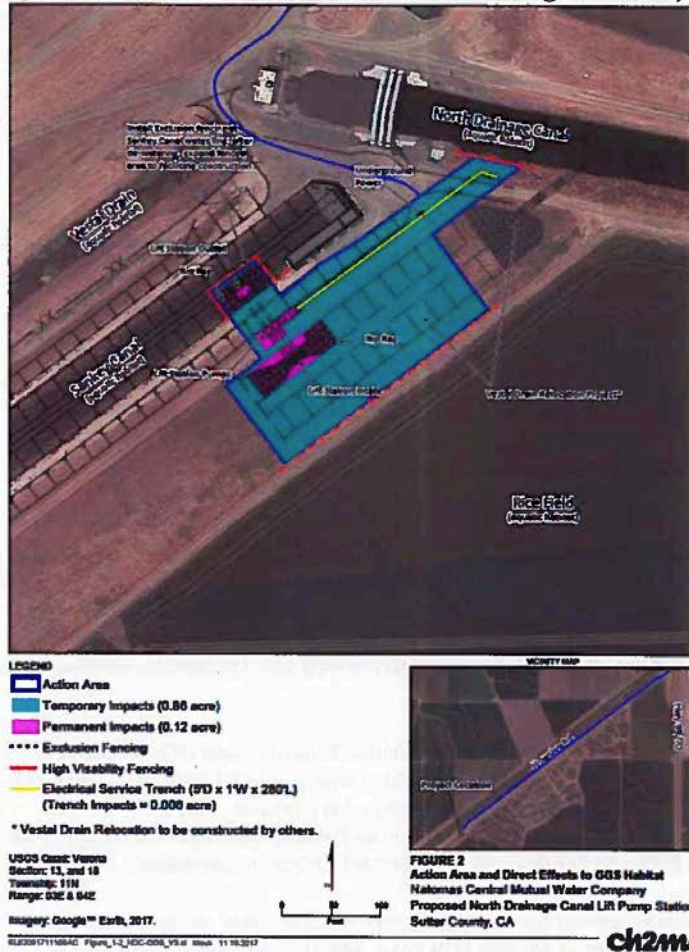
Demolition of the existing check structure and removal of the existing broken concrete lining will be under the supervision of a Service/CDFW-approved biologist, hand tools will be used for the initial removal of surface broken gunite and concrete to a depth of approximately 1 to 2 feet, afterward an excavator and/or backhoe will be used to complete the removal. This disturbance area will be limited to an area of approximately 25 by 45 feet. The Cottonwood Check Automation Project will not require on-site borrow, but will require disposal of demolished concrete check and concrete lining. Unused materials, including the demolished concrete check and concrete lining, will be removed upon completion of the proposed project. The applicant will remove and dispose of this material at its construction yard in Rio Linda. The excavated soil remaining after completion of the proposed project is expected to be minimal, and it will be spread and compacted along the access road adjacent to the check structure, within the action area, to restore the road after construction.

The North Drainage Canal Lift Pump Station Project includes the construction of a new tailwater recovery lift pump station with 120-cubic-foot-per-second (cfs) capacity on the Sankey Canal near the NDC (Figure 2). The NDC Lift Pump Station will be constructed within an existing canal and access road owned by the applicant. The new structure will be placed on the southern side of the Sankey Canal currently owned and operated by the applicant. To address levee stability issues under a separate project (anticipated in 2018), the United States Army Corps of Engineers (Corps) will be relocating the Vestal Drain from the northern to the southern side of the Sankey Canal, which will become the conveyance channel from the NDC Lift Pump Station to the NDC (Service File Number: 81420-2010-F-0949-1).

Construction of the proposed 120-cfs tailwater recovery lift pump station includes the following:

- Cast-in-place (or precast) reinforced concrete wet well and pump base slab, including pumps and motors, control cabinet, and electrical transformer.
- Cast-in-place reinforced concrete intake and trash rake with four intake pipes to the lift pump station wet well.
- Approximately 270 linear feet of buried electrical conduit.
- Discharge pipes from the pumps through the Sankey Canal bank with cast-in-place concrete discharge structure and riprap slope protection.

Figure 2: Effects to the Snake from the North Drainage Canal Project



The earthwork activities associated with the intake, intake piping, and pump structure will be made with an excavator to a depth of approximately 14 feet, but limited to an area of approximately 0.11 acre (approximately 90 feet long by 55 feet wide). The remaining earthwork activities for installation of the discharge piping will be confined to a depth of 8 feet and an area of 0.07 acre. It is anticipated that after clearing the site, excavation for a portion of the Vestal Drain in front of the intake (if not already completed by Corps), intake structure, intake pipe, and lift pump station will occur at the same time with the contractor working over the footprint of these structures to excavate to subgrade simultaneously while sloping the excavation for safety. Once excavated, crews will begin forming the structures for concrete, placing reinforcing steel, and placing the intake pipe. After concrete is placed and forms are stripped, the structures and intake pipe will be backfilled. Concurrent with or subsequent to placing concrete forms the contractor will excavate through the canal bank for the discharge pipe and may place the discharge pipe while the structure concrete is curing.



For the proposed projects, existing roads will be used for transporting construction equipment. The staging area for construction equipment will be located in an existing construction yard. Work will be performed in the canal and from the road. Construction of the proposed projects will start as soon as all necessary permits and approvals are obtained. Construction will be completed over the course of approximately 4 months during the snake active season; however, work could occur during the inactive season depending on the start date of construction.

### Conservation Measures

The following is a summary of the proposed conservation measures, as outlined in the biological assessments, to minimize effects on the snake. The conservation measures proposed below are considered part of the proposed action evaluated by the Service in this biological opinion.

1. The applicant has proposed to compensate for the effects of the proposed project by purchasing credits from the Natomas Basin Conservancy at the 2018 Natomas Basin Habitat Conservation Plan fee of \$33,091 per acre. Compensation will be purchased prior to ground breaking on the proposed projects. This also satisfies the compensatory mitigation to fully mitigate the effects that supports CDFW's requirements for a Consistency Determination under Section 2080.1 of the Fish and Game code.
  - For the Cottonwood Check Automation Project, a total of 0.51 acre of temporary direct effects will be compensated at a proposed 1:1 ratio, and a total of 0.013 acre of permanent direct effects will be compensated at a proposed 5:1 ratio. A total payment of \$19,193 will be made to the Natomas Basin Conservancy for the purchase of 0.58 acre (0.51 acre for temporary effects and 0.07 acre for permanent effects).
  - For the North Drainage Canal Lift Pump Station Project, a total of 0.86 acre of temporary direct effects will be compensated at a proposed 1:1 ratio and a total 0.12 acre of permanent direct effects will be mitigated at a proposed 5:1 ratio. A total payment of \$48,313 to be made to the Natomas Basin Conservancy for the purchase of 1.46 acres (0.86 acre for temporary effects and 0.6 acre for permanent effects).
  - Therefore, prior to ground breaking on the proposed projects, the applicant will provide a total payment of \$67,506 (\$19,193 + \$48,313) that will be made to the Natomas Basin Conservancy.
2. At least 30 calendar days prior to initiating construction activities, the names and curriculum vitae of the biological monitor(s) for the proposed projects will be submitted to the Service and California Department of Fish and Wildlife (CDFW) for approval. Monitors will have the ability to differentiate a giant garter snake from other snakes, will have the authority to stop construction activities if a snake is encountered during construction, and will monitor the measures for effectiveness.
3. Prior to initiating construction activities, the applicant will prepare a snake relocation plan for use in the event that a snake is injured or trapped during construction. The relocation plan will outline the biological monitor qualifications and responsibilities, and the steps to be taken if a snake is encountered during construction. The relocation plan will identify the names and contact information for one or more Service/CDFW-approved biologists with a 10(a)(1)(A) recovery permit for a snake that will be responsible for handling snakes. The

location (if known) where trapped snakes will be relocated will be included in the relocation plan, or the plan will specify that trapped individuals will be relocated to the nearest suitable habitat that is outside of the construction area. The relocation plan will describe the steps that will be taken in the event that an injured snake is found. The relocation plan will describe the communication and notification process and documentation for submission to the Service and CDFW. The relocation plan will be approved by the Service and CDFW.

4. If a snake is encountered during construction, activities will cease until the snake leaves the action area on its own or until the Service/CDFW-approved biologist determines that the snake is not a giant garter snake. If a possible snake is observed retreating into an underground burrow or is otherwise stationary within the action area, construction activities will not begin or will cease immediately in the reach where the snake is present. In the instance where a snake goes underground and is not visible, the Service and CDFW will be notified and a Service/CDFW-approved biologist with a 10(a)(1)(A) recovery permit will respond according to the snake relocation plan.
5. Snake occurrences will be reported immediately to the Service/CDFW-approved biologist, who will contact the Service and CDFW to determine whether additional protective measures are needed. The Service/CDFW-approved biologist will notify the Service and CDFW immediately if any listed species are found on-site, and will submit a report including date(s), location(s), habitat description, and any corrective measures taken to protect the species found. The biologist will be required to report any take to the Service and CDFW immediately by telephone at (916) 414-6631 and by electronic mail or written letter within one working day of the incident as follows:
  - Service (916) 414-6631, Sacramento Valley Division Chief, Endangered Species Program
  - CDFW (916) 358-2842, Region 2 Representative, Amy Kennedy
6. Before any work begins, construction personnel will receive worker environmental awareness training conducted by a Service/CDFW-approved biologist to recognize the snake and their habitat. The education program will briefly cover the snake and their habitat that may be encountered during the proposed projects, and will cover all restrictions and guidelines that must be followed by crews to avoid or minimize effects. Upon completion of training, crews will sign a form stating that they attended the training and understand all the field personnel conservation and protection measures.
7. A Service/CDFW-approved biologist will perform preconstruction surveys for the snake, oversee implementation of best management practices to prevent sediment from entering areas containing snake habitat, and oversee installation of exclusion fencing. A Service/CDFW-approved biologist will be present during any earthmoving activities, including riprap placement and trenching.
8. Before construction activities begin, flooded rice fields and other potential snake habitat adjacent to the action area will be identified and flagged by a Service/CDFW-approved biologist, and high-visibility fencing will be erected to protect the areas from encroachment of personnel and equipment. The fencing will be inspected before the start of each workday and will be maintained until completion of the proposed project. The fencing will be removed only when construction within a given area is completed. This fencing and any erosion control best management practice will conform to the following specifications:

- tightly woven fiber netting (mesh size 0.25 inch or smaller) or similar material will be used to ensure that snakes are not trapped or become entangled by the erosion control material. No monofilament wattles or erosion blankets will be used for the proposed projects.
9. Movement of equipment and vehicles to and from the proposed projects will be restricted to established roadways and designated staging areas to minimize habitat disturbance. Project-related vehicles will observe a 15-mile-per-hour speed limit within the action area.
  10. During construction, stockpiling of construction materials, portable equipment, vehicles, and supplies will be restricted to the designated construction staging areas. All equipment, vehicles, and supplies will be stored at the designated staging area at the end of each work period. To eliminate an attraction to predators of the snake, all food-related trash items (such as wrappers, cans, bottles, and food scraps) will be disposed of in closed containers, which will be removed from the Action Area daily.
  11. Immediately prior to construction activities, a Service/CDFW-approved biologist will survey the action area for the snake. The biologist will provide the Service and CDFW with written documentation of the monitoring efforts within 48 hours after the survey is completed. The survey will be repeated if a lapse in construction activity of 14 days or greater has occurred.
  12. Exclusion fencing will be installed using a modified ripper capable of deliberately and accurately ripping along the fence line to minimize disturbance and effects to the snake. The edge of the material will be buried in the ground to prevent the snake from crawling underneath the material. Exclusion fencing will be monitored each day prior to and during construction to ensure that openings do not develop that will allow the entry of a snake into the construction area. Prior to construction activity, the area will be inspected by a Service/CDFW-approved biologist for the snake. If at any time a snake is discovered inside an area protected by exclusionary fencing, a Service/CDFW-approved biologist will notify the Service and CDFW immediately as described under measures 3 and 4.
  13. Temporary fencing will be used around equipment that is left overnight at the proposed project. Temporary fencing will be constructed of material satisfactory to the Service and CDFW. Immediately prior to moving vehicles stored within the temporarily fenced area, a Service/CDFW-approved biologist will survey the area and underneath the vehicle for the snake. If a snake is discovered, a Service/CDFW-approved biologist will notify the Service and CDFW immediately as described under measures 3 and 4.
  14. Clearing of vegetation and scraping or digging of soil will be limited to the minimal area necessary to facilitate construction activities. In addition, earthmoving activity, including riprap placement and trenching, will be overseen by a Service/CDFW-approved biologist.
  15. Construction within canals may require dewatering using a screened sump pump. The area to be dewatered will be inspected by a Service/CDFW-approved biologist prior to dewatering and a spill response kit (e.g., cleanup items such as absorbent pads, waddles, and disposal containers) will be made available at the site. The dewatered portion will remain dry (no standing water) for 15 consecutive days prior to construction activities. The dewatered area will be inspected by a Service/CDFW-approved biologist prior to construction activity within the constructed canal. If complete dewatering is not possible, potential snake prey (e.g., fish and tadpoles) will be removed so that snakes and other wildlife are not attracted to the construction area. Stormwater runoff that occurs after the canal is dewatered and after exclusion fencing is installed around the action area will be directed to a screened trash

pump and not be allowed to accumulate in the canal. The screened trash pump will be checked by a Service/CDFW-approved biologist prior to use.

16. To prevent entrapment of snakes during construction, an escape ramp will be placed at each end of all open excavations at the end of each work day to allow snakes that may have become entrapped in the trench to escape the trench overnight. The ramp may be constructed of dirt fill, wood planking, or other suitable material. Before such holes or trenches are filled, a Service/CDFW-approved biologist will thoroughly inspect them for snakes. If at any time a trapped snake is discovered, the Service and CDFW will be notified and a Service/CDFW-approved biologist with a 10(a)(1)(A) recovery permit will respond according to the snake relocation plan.
17. After construction activities are complete, any temporarily disturbed areas will be restored by the applicant to their pre-project conditions.

*Conservation Measures Specific to the Cottonwood Check Automation Project:*

- C1. Initial excavation and removal of the broken gunite and concrete from the surface of the canal channel will be completed with hand tools and under the supervision of a Service/CDFW-approved biologist.
- C2. Removal and replacement of check structure and the broken gunite and concrete will be completed within the area restricted by exclusion fencing, which will reduce the likelihood of encountering a snake.

*Conservation Measures Specific to the North Drainage Canal Lift Pump Station Project:*

- N1. During construction, all pipes, culverts, or similar structures that are stored at the project site overnight will be thoroughly inspected for trapped snakes before the pipe is buried, capped, or otherwise used or moved. Pipes laid in trenches overnight should be capped. If at any time a trapped snake is discovered, Service and CDFW will be notified and a Service/CDFW-approved biologist with a 10(a)(1)(A) recovery permit will respond according to the snake relocation plan.
- N2. An area subject to temporary disturbance includes any area that is disturbed during the proposed project but that, after completion, will not be subject to further disturbance and has the potential to be revegetated. All snake habitats subject to temporary ground disturbances, including storage and staging areas, will be restored (i.e., revegetated with an erosion control seed) by the applicant. The banks of the Sankey Canal will be revegetated with a native seed mix.

**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.” For the proposed projects, the action area encompasses the footprint of the cottonwood check structure, NDC pump station, and all associated infrastructure. The action area also includes all access roads, staging areas, and all areas up to 330 feet from the maintenance activities in which noise from construction activities is expected to exceed ambient levels (derived from Service 2006).

### 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). No change in the snake's listing status was recommended in this 5-year review. The abundance and distribution of the snake has not changed significantly since the previous review, although some populations remain in danger of extirpation due to small population sizes and low habitat quality. Threats discussed in the review have continued to act on the snake since the 2012 5-year review was finalized, with loss and fragmentation of habitat being the most significant effect. While there continue to be losses of snake habitat throughout its range, to date no project has proposed a level of effect for which the Service has issued a biological opinion of jeopardy for the snake.

### Environmental Baseline

The proposed project is located within the American Basin, identified as a "snake population and Recovery Unit" in the *Recovery Plan for the Giant Garter Snake* (Service 2017) (Recovery Plan). The American Basin Recovery Unit extends from the city of Oroville, south to the confluence of the Sacramento and American Rivers. The American Basin is about 376,104 acres, which includes portions of Butte, Yuba, Sutter, Placer, and Sacramento counties. The proposed projects occur within the Natomas Basin Management Unit which is one of the four management units defined within the American Basin Recovery Unit. The California Natural Diversity Database (CNDDDB) identified an occurrence at the Cottonwood Check structure in 1989, as well as numerous more recent occurrences within the vicinity of the Cottonwood Check. In addition, numerous occurrences occur within five miles of the North Drainage Canal. The nearest record is located less than 0.25 mile from the North Drainage Canal (CNDDDB 2018).

Suitable aquatic habitat for the snake occurs within the action area and consists of the Sankey Canal, the Vestal Drain, the Lateral 3 Canal, the NDC, and all adjacent rice lands. The drainage canals and wetlands provide year-round sources of water; the upland areas around the aquatic habitats provide suitable basking sites; and there is some terrestrial vegetation that would provide cover for the snake. In addition, small mammal burrows were observed within the action area.

Therefore, due to the suitability of habitat within the action area, rice lands adjacent to the proposed projects, and the relative proximity of known occurrences, it is likely that snakes may be found within the action area. It is likely that snakes may be present in the action area in underground burrows, or using suitable habitat in the action area for basking and foraging, or moving through the action area to surrounding habitat.

### Effects of the Action

The Cottonwood Check Automation Project will have effects to both upland and aquatic snake habitat as a result of the removal of the existing check structure, excavation and construction of the new check structure, and the shallow trenching for the electrical conduit. These effects will be temporary and will adversely affect approximately 0.51 acre of suitable upland and aquatic habitat. In addition, the Cottonwood Check Automation Project will result in the permanent loss of approximately 0.013 acre of suitable upland snake habitat as a result of placing rip rap along the canal edges to provide canal slope protection.

The North Drainage Canal Lift Pump Station Project will have effects to both upland and aquatic snake habitat as a result of the facilities construction (e.g., trenching, earthmoving, and placement of riprap) during installation of the intake, intake piping, and pump structure and increased vehicle

traffic on surface roads adjacent to open-water habitat during construction. There will be 0.86 acre of temporary effects to suitable aquatic and upland habitat as well as 0.12 acre of permanent effects to upland habitat.

The permanent loss of suitable habitat will prevent the snake from foraging within the suitable aquatic habitats as well as utilizing the associated upland areas to bask or to use as winter refugia. The loss of this habitat will also prevent snakes from utilizing these areas to thermoregulate above or below ground, seek shelter from predators or find winter refugia in the upland areas during the snakes inactive season. The temporary effects associated with the proposed projects will likely prevent snakes from utilizing the areas that will be temporarily disturbed during project construction; however, the habitat will be restored to its pre-project condition. In addition, the amount of habitat loss that will be temporarily affected is relatively small and there is abundant suitable habitat surrounding the proposed projects, so snakes will likely be able to find other areas of suitable aquatic and upland habitat adjacent to the proposed projects.

Construction activities associated with the proposed projects will likely result in injury or mortality to the snake. Snakes will likely be crushed beneath heavy construction equipment or will likely be entombed in below ground refugia during trenching and earthmoving activities. However, adverse effects to the snake during the proposed projects will be minimized through implementation of project-specific avoidance and minimization measures that are proposed by the applicant.

As noted previously in the *Description of the Action* section, the project proponent has also proposed a set of conservation measures, including the commitment to provide compensatory habitat as a condition of the action. This compensatory habitat is intended to minimize the effect on the species of the proposed project's anticipated incidental take, resulting from the loss of habitat described above. The compensatory habitat proposed will be in the form of purchasing credits from the Natomas Basin Conservancy which will conserve habitat that occurs within the Natomas Basin. The compensatory lands will provide suitable habitat for breeding, feeding, or sheltering commensurate with or better than habitat lost as a result of the proposed project. Providing this compensatory habitat as part of a relatively large, contiguous block of conserved land may contribute to other recovery efforts for the species.

### **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 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 Cottonwood Check Automation Project and the North Drainage Canal Lift Pump Station Project, and the cumulative effects, it is the Service's biological opinion that the proposed projects, as proposed, are 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 potential cumulative effects, will not rise to the level of precluding recovery or reducing the likelihood of survival of the species based on

the conservation measures proposed by the Bureau and the purchase of conservation credits to minimize the permanent loss of snake habitat.

### 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 as an intentional or negligent act or omission which creates the likelihood of injury to a listed species 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 to include significant habitat modification or degradation that results in death or injury to listed species by impairing behavioral 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 Service 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 Service has a continuing duty to regulate the activity covered by this incidental take statement. If the Service: (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.

#### 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, and estimates of population density in the action area are unavailable. The snake is secretive and uses underground burrows for shelter while not in aquatic habitat during the active season and for brumation during the inactive 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 within the action area, all snakes inhabiting the 0.133 acre (0.013 acre + 0.12 acre) of upland habitat that will be permanently lost will be subject to incidental take in the form of harm. 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 based on the fact that snakes are expected to avoid active construction if possible, as well as the conservation measures proposed by the Bureau.

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 will be considered to be exceeded as a result of implementing the proposed project. We will use detection of one (1) dead or injured snake to determine when take is exceeded. By setting a threshold of one individual detected, 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 one dead or injured snake is 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 Cottonwood Check Automation Project and the North Drainage Canal Lift Pump Station 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 Take**

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

#### **Reasonable and Prudent Measures**

All necessary and appropriate measures to avoid or minimize effects on the snake resulting from implementation of the proposed project have been incorporated into the project's 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 *Project Description* section of this biological opinion, shall be fully implemented and adhered to. Further, this reasonable and prudent measure shall 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 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 will include full implementation and adherence to the conservation measures as a condition of any permit or contract issued for the proposed projects.
2. Prior to construction, the Bureau will provide a copy of the completed bill(s) of sale and payment receipt(s) to the Service upon the purchase of habitat conservation credits.
3. In order to monitor whether the amount or extent of incidental take anticipated from implementation of the proposed projects 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 impacted to the Service after completion of construction. The report will also include any information about changes in project implementation that result in habitat disturbance not described in the *Description of the Action* and not analyzed in this biological opinion.



- b. The Bureau shall immediately contact the Service's Sacramento Fish and Wildlife Office (SFWO) at (916) 414-6631 to report direct encounters between the snake, project workers, and their equipment whereby incidental take in the form of harassment, harm, injury, or mortality occurs. If the encounter occurs after normal working hours, the Bureau shall contact the Service at the earliest possible opportunity the next working day. When injured or killed individuals of the listed species are found, the Bureau shall follow the steps outlined in the Salvage and Disposition of Individuals section below.
- c. For those components of the action that will require the capture and relocation of any listed species, the Bureau shall immediately contact the Service's SFWO at (916) 414-6631 to report the action. If capture and relocation need to occur after normal working hours, the Bureau shall contact the Service at the earliest possible opportunity the next working day.

#### **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 frozen in a freezer located in a secure site, until instructions are received from the Service regarding the disposition of the dead specimen. The Service contact person is the Chief, Sacramento Valley Division 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:

1. The Bureau should work with the Service to assist us in meeting the goals of the recovery plan for the snake.

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 Cottonwood Check Automation Project and the North Drainage Canal Lift Pump Station Project. As provided in 50 CFR §402.16, reinitiation of formal consultation is required and shall 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 Kellie Berry, Chief, Sacramento Valley Division ([kellie\\_berry@fws.gov](mailto:kellie_berry@fws.gov)) at (916) 414-6631.

cc:

Amy Kennedy, California Department of Fish and Wildlife, Rancho Cordova, California

**LITERATURE CITED**

- U.S. Fish and Wildlife Service (Service). 2006. Estimating the Effects of Auditory and Visual Disturbance to Northern Spotted and Marbled Murrelets in Northwestern California. Arcata Fish and Wildlife Office, Arcata, California. July 26, 2006. 61 pp.
- \_\_\_\_\_. 2012. Giant Garter Snake (*Thamnophis gigas*) 5-year Review: Summary and Evaluation. Sacramento Fish and Wildlife Office, Sacramento, California. June 2012. 62 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.